CRIME, INNOVATION, AND THE TECHNOLOGY OF MONEY

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ABSTRACT

The emergence of Bitcoin has raised fundamental questions about traditional understandings of money. As the boundaries of what is accepted as money becomes increasingly blurred, so do the types of crime associated with the emergence of new monetary instruments. There is an urgent need to understand and clarify where cryptocurrencies fit within a wider regulatory landscape associated with other forms of money and digital technologies since these criminal activities confound traditional responses to crime, systems of social control, and regulation. To explore this issue, my research focuses on the relationships between money, monetary crime, and forms of regulation, and conducts its analysis across time. By doing so, this project's original contribution will be to offer new perspectives on the challenges and legal uncertainties faced by cryptocurrencies today by drawing on the formative moments of historical forms of money. My research adopts a comparative-historical analysis looking at three case studies: banknotes forgery in the 19th century, credit card fraud in the 1970s and the use and misuse of Bitcoin in the 21st Century. This thesis proposes that a first step in dealing with these challenges is to bring to the fore and reposition the concept of monetary crime. This will enable a more targeted and granular analysis of criminal activities associated with new forms of money and liberate it from pre-defined labels. A second step is to level the playing field between cryptocurrencies and monetary crime by firstly accepting that cryptocurrencies should be clearly differentiated. Secondly, that cryptocurrencies should have their own hierarchy to exempt those which pose little risk from financial regulation. And thirdly, that cryptocurrencies would benefit from becoming aligned with payment services, financial services, and e-money regulations. This would bring into line existing legislation, and the protection they currently afford to forms of money, to cryptocurrencies.

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DECLARATION

I declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References.

INTRODUCTION

Bitcoin has "become the staging ground for debate around the cultural role of money in society."[1] Emerging from a disillusion and mistrust on traditional currencies underpinned by a central authority, it is not a coincidence that Bitcoin emerged during the financial crisis in 2008 when this sentiment was at its lowest.[2] Bitcoin raises fundamental questions about what constitutes money, and the role of technology, the state and trust in constituting it. Bitcoin's assertion of being 'the future of money'[3] exemplifies the challenges faced by regulators, lawmakers, and industrial actors in dealing with innovations in money. These challenges correspond to ensuring the regulatory framework is equipped to harness the benefits of new technologies, supporting innovation and competition, while mitigating risks to consumers and financial stability by limiting criminal activities arising from these technological changes.[4] The recent spike in interest in Bitcoin at the start of 2021 and the ongoing focus on its derivatives such as stablecoins and Central Bank Digital Currencies (CBDCs), has anchored the urgency to understand and clarify where cryptocurrencies fit within a wider regulatory landscape associated with monetary instruments and digital technologies.

Although this thesis aims to investigate the current challenges posed by cryptocurrencies and the emergence of plural forms of money, historical perspectives are

[1] Lana Swartz, 'What Was Bitcoin, What Will It Be? The Techno- Economic Imaginaries of a New Money Technology' (2018) 32 Cultural Studies 623. 623.
[2] ibid. 629.
[3] Sean Stein Smith, 'Bitcoin Created the Future of Money, But Needs to Work with Incumbemts like PayPal.' *Forbes* (22 July 2020) <https://www.forbes.com/sites/seansteinsmith/2020/07/22/bitcoin-created-the-future-of-money-but-needs-to-work-with-incumbents/>.
[4] HM Treasury, 'UK Regulatory Approach to Cryptoassets and Stablecoins: Consultation and Call for Evidence' (HM Treasury 2021). 1.6.

missing. The original contribution of this thesis will be to rectify this. This lack of historical perspective is remiss because new iterations of money should be understood as being part of a wider narrative of monetary innovation and placed in context with past iterations. As such the overarching research question of this thesis asks what the historical relationships between money, crime, and regulation, can tell us about emerging forms of money and how the challenges they pose in the present might be managed. To do so, this project will draw from case studies echoing the formative moments of historical forms of money, beginning with Bank of England Notes in the 19th Century, Barclaycard from the 1966 to the 1989, and finally Bitcoin and cryptoassets in the present. Although there is extensive literature concerning my case studies *separately*, this thesis will aim to address the silence in the literature concerning the connections between iterations of money and crime at different points in time. Indeed, the challenges faced by existing forms of money on how they dealt with rising public acceptance and associated monetary crime are not used nor drawn upon to inform current studies on the development of forms of regulation around emerging forms of money. Therefore, my original contribution to the literature will be to identify similarities and differences that arise across time in order to propose new perspectives on the challenges and legal uncertainties faced by cryptocurrencies in the present.

To identify common threads and themes across time, I will be supported by comparative-historical methodologies. Central to this thesis are three objects of enquiry: technological changes in money, monetary crimes, and forms of regulation. The purpose of this thesis is not to define them nor to answer whether Bitcoin or other forms of cryptoassets *are* money. The objective is to analyse three case studies encompassing the key stages of England's technological changes in money: banknotes forgery in the 19th century, credit card fraud in the 1970s and the use and misuse of Bitcoin in the 21st Century, in relation to those

objects of enquiry. The crux of this methodology is to engage in the comparison of similar and contrasting cases which enables to see how factors have different or similar outcomes across heterogenous contexts. Yet the robustness of this approach relies on the analysis being informed by theories based on conceptual understandings that are present in each of the case studies. This thesis proposes that a first step in dealing with these challenges is to bring to the fore and reposition the concept of monetary crime. This will enable a more targeted and granular analysis of criminal or harmful activities associated with new forms of money and liberate it from pre-defined labels.

This thesis's original findings will be the identification of three main threads that permeate through my case studies and offers unique historical perspectives on cryptocurrencies' legal uncertainty. The data informing these conclusions is also original as it was gathered through in person archival research. The first concerns the close relationship between a clear taxonomy of *monetary crime* and how it can be used to identify the scope of behaviours and activities that might threaten, cause harm, and undermine financial stability, and the different regulatory approaches required to tackle these. It will highlight how crimes directly associated with money should not be seen as isolated incidents. The second concerns the gradual *decentralisation* of actors and decision-makers within monetary systems. The current difficulties in regulating Bitcoin stems from a historical tendency to have centralised oversight over monetary systems. More importantly, the regulation of money should not be focused on its separate elements or target specific activities that might undermine it. It should be understood as a bundle of rights and obligations overseeing a monetary system with the goal of maintaining trust and financial stability, promoting acceptance and adoption, encouraging innovation and protecting from monetary crime. By acknowledging and linking these plural state and non-state actors together can better promote legal certainty. The third and key thread

surrounding this project is that historical perspectives have shown that *previous or existing monetary instruments are flexible enough to integrate new monetary technologies.* There is a significant overlap, reliance, and coexistence between emerging and 'previous' forms of money. New forms of money do not arise in isolation and coexist and emerge within predefined financial and institutional frameworks. As such, approaches in the present that encourage the reorientation of existing regulatory frameworks should be encouraged rather than adopting bespoke and fragmented forms of social control to prevent monetary crime.

This thesis will be separated in six chapters. The literature review will operationalise the scope of the project and address the fragmented and lack of dialogue between the various disciplines and timeframes arising out of the interactions between my objects of enquiry and case studies. The methods chapter will support the identification of key themes and threads throughout the different case studies by setting a rigorous comparative analytical framework for this project that will enable to identify the key factors underpinning my case studies' interrelationship with monetary crime. The third chapter will be conceptual in order to bridge the gap between conceptual understandings of my objects of enquiry and my case studies to facilitate comparison across time. This will be achieved by repositing the meaning of monetary crime by situating Bitcoin and cryptoassets within accepted definitions of money and moneyness. The last three chapters will be analytical and will draw on the original archival research I've undertaken at the archives of the BoE and Barclays. The 4th Chapter on technological innovations of Bank of England notes during the Restriction Period will clearly show how monopolistic and centralised decision making over prevention and deterrence is not conducive to dealing with monetary crime. Indeed, limited technological change was achieved on the banknote to prevent forgery. The 5th Chapter will focus on the rise of Barclaycard and show how preventive steps on the monetary system, rather than focusing on the instrument, is

more capable of limiting monetary crime. It will begin to hint at how decentralised forms of decision-making and actors maximises the opportunities to identify and combat monetary crime. The last chapter will draw on the current challenges faced by regulators in defining cryptoassets and crypto service providers and contextualise these decisions in regard to historical perspectives. It will find that current legislative steps are taking a wrong turn in adopting a fragmented and overregulated approach to certain forms of cryptoassets.

CHAPTER 1: LITERATURE REVIEW

The current trend in the literature analyses Bitcoin and other cryptocurrencies as a monetary innovation of the 21st Century without considering the context, challenges, and previous processes leading up to its inception. This only provides a limited narrative and understanding of the ways in which money, monetary crime and regulation interact. By taking a long view, we can gain a deeper understanding of how money can change, the challenges this can pose with respect to crime, and how these can best be countered. By exploring the various overlapping literatures of my three case studies, this chapter will acknowledge the wider scope and academic interest afforded to the different facets of my research. Due to the scope and historical perspective of this project, the literature cannot be confined to a specific field, and as such this literature review aims to highlight and engage with the key discourses that feed into the research areas of this project. As such the literature review has been split into three sections dealing with my case studies chronologically in order to highlight the underlying themes arising within *their* respective literature. This approach is necessary as there is a clear overarching silence in the literature corresponding to a horizontal and vertical lack of dialogue between disciplines and timeframes. Indeed, there is little to no acknowledgement of past crimes and their responses in current articles on money, while there is no link established by historical literature drawing from previous events to help illuminate the present.

The aim of this chapter will be to address the limited dialogue between disciplines and start identifying commonalities and shared gaps. This is not new, authors such as Wilson, King, and Godfrey have all highlighted this singular problem within their own field. Within the scope

of this project, the existing literature will help inform the core themes that will permeate throughout the thesis and be subject to comparative analysis between my case studies in the following chapters. It will begin to show how monetary literature has engaged with monetary instruments becoming systemic, explore institutional and regulatory responses to formative challenges, highlight the gradual decentralisation of decision-making and control over monetary instruments, and begin to unravel the unitary phenomenon traditionally associated with crime and money. Adding complexity to this task is the fragmented state of the literature concerning the interactions between my case studies and my objects of enquiry. Indeed, different 'spheres' of the same discipline do not engage with each other, such as crime history and monetary history. Accordingly, to address this shortcoming, this thesis draws from a wide range of literatures and disciplines: from history, criminology, law, and sociology. They provide a rich context to the timeframes being studied and enable an accurate representation of the current state of the literature regarding my three case studies.

1. Banknote Forgery

1.1. Key Themes

There are two overarching themes that seem to drive the literature surrounding the innovation of paper money and the criminal responses to it. The first underlying theme, focusing on the history of money, explains the context in which paper notes arose and became settled in Britain by looking at the continuously evolving embodiment of money and the driving forces behind such innovations. Focusing on crime history literature on forgery during this period, the second underlying theme looks at how the study of paper notes and forgery has been used as a focus for institutional change, analysing its effects on both organisations and criminal history.

1.2. The Rising Acceptance of Paper in Britain

1.2.1. Wider Scholarship on Paper Money

The proliferation of paper money in 18th Century England has been the subject of various studies and is traditionally explored through the discipline of history. Indeed, there are numerous historical and chronological accounts of paper money's introduction in Britain. More generally, Eagleton et al wrote: *Money: A History*[1] that adequately records the slow adoption of money in the world, while giving a broader historical context to paper money in general. Davies's book *A History of Money: From Ancient Times to the Present Day*[2] is also a cornerstone for a historical account behind money's various embodiments.

Particularly in the UK, the works of Richards[3] and Horsefield[4] tackle the 18th and 19th Century monetary revolution of using paper instead of precious metals by clearly mapping out the proliferation and different types of paper notes present in the UK. This is relevant to this project as banknotes and other similar instruments such as promissory notes, or goldsmith notes, were privately issued by numerous institutions. As we will explore, this *plurality* is key in understanding the Bank of England's actions towards forgery when compared to other paper instruments issued by other institutions. Likewise, works such as Mayhew's *Sterling*,[5] and Roberts et al *The Bank of England*[6] offer great historical context and a wider understanding of the drives and innovations that fuelled the currency and the institutions issuing it during the 18th and 19th Century. Shin's article 'Paper Money, The Nation, and the Suspension of Cash

[1] Catherine Eagleton and Jonathan Williams, *Money A History* (2nd edn, The British Museum Press 2007).
[2] Glyn Davies, *A History of Money: From Ancient Times to the Present Day* (3rd edn, University of Wales Press 2002).
[3] RD Richards, 'The Evolution of Paper Money in England' (1927) 41 The Quarterly Journal of Economics 361.
[4] J Keith Horsefield, 'The Beginnings of Paper Money in England' (1977) 6 Journal of European Economic History 117.
[5] Nicholas Mayhew, *Sterling: The History of a Currency* (1st edn, Wiley 2000).
[6] Richard Roberts and David Kynaston, *The Bank of England: Money, Power, and Influence 1694-1994* (1st edn, Oxford University Press 1995).

Payments in 1797'[7] further synthesises the historical context relevant to the introduction of paper money in England and the key events leading to the Restriction Period, the period in which Bank of England notes were notoriously forged. Indeed, the close relationship between bullion, paper money, and its convertibility, coupled with the quality of these instruments during the 19th Century were key indicators as to the level of punishment associated with its forgery/ clipping/ uttering. Moreover, it begins to hint at the importance of the overlap and reliance between emerging forms of money with existing instruments.

Works touching on the *evolving* nature of money in the form of banknotes during this particular timeframe in England and Wales has thus been undertaken by academics such as Wray[8], Desan[9], Ferguson[10], Shin[11] and Frame[12]. This field of scholarship is worth exploring in more detail as it has received renewed academic interest since the 2008 financial crisis. Moreover, these discussions are particularly relevant to the first overarching theme found in this review. Notably, that money is a continuously evolving construct, and that the acceptance of paper notes contributed to radical social, legal and economic changes.

Desan and Ferguson provide the leading contextualisation towards such changes. Desan argues convincingly that government played a substantial role in shaping and pushing monetary

[7] Hiroki Shin, 'Paper Money, The Nation, and the Suspension of Cash Payments in 1797' (2015) 58 The Historical Journal 415.
[8] L Randall Wray, 'An Irreverent Overview of the History of Money from the Beginning of the Beginning through to the Present' (1999) 21 Journal of Post Keynesian Economics 679.
[9] Christine Desan, *Making Money: Coin, Currency, and the Coming of Capitalism* (1st edn, Oxford Scholarship Online 2015) <http://www.oxfordscholarship.com.libproxy.york.ac.uk/view/10.1093/acprof:oso/9780198709572.001.0001/acprof-9780198709572> accessed 30 October 2017.
[10] Niall Ferguson, *The Ascent of Money: A Financial History of the World* (1st edn, Penguin Books 2009).
[11] Shin (n 7).
[12] Ian Frame, ``Country Rag Merchants' and English Local Currencies in the Late Eighteenth and Early Nineteenth Century' (2015) 42 Journal of Law and Society 588.

policy and establishing the architecture and protection needed for banknotes to become accepted in England. This is complemented by Ferguson's main argument that both money and the institutions creating and issuing new types of money have a Darwinian quality in the way that monetary innovations mutate and draw from their previous embodiments. Their work mirror much of the literature on monetary policy and help reveal a further 3 themes focused on explaining the growing acceptance of paper notes during the 18th and 19th Century.

1.2.2. The Rising Familiarity of Paper

The literature firstly explores the growing familiarity of paper notes through an increased exposure to a variety of paper instruments. Richards catalogues the different iterations of paper money that circulated in England and describes the origins and early development of paper money.[13] In doing so, Richards hints that a growing familiarity and exposure of notes would impact the way England would accept banknotes as means of payment. Kleer explores in more detail how a type of paper note could be accepted as a means of payment, contrasting Bank of England Notes with early Exchequer bills in 1701 and 1709.[14] Kleer also illustrates the rising power of government and the growing monopoly of the Bank of England. Horsefield continues this thread by looking at the various types of non-metallic items and their validity in qualifying as money in Britain in the 18th Century.[15] He discovered that although the courts and businesses embraced these notes early on as money, it took the government key events and challenges, and an increase in governmental organisations adopting them instead of coins, to finally accept paper notes as money, and only the ones issued by the Bank of England. This begins to unravel two key themes that will run throughout the project: the importance of market agents in the ongoing acceptance and adoption of new instruments,

[13] Richards (n 3). 362.
[14] Richard A Kleer, '"A New Species of Mony": British Exchequer Bills, 1701-1711' (2015) 22 Financial History Review 179.
[15] Horsefield (n 4). 120.

and the key social elements of money. Themes that will permeate throughout the following chapters and case studies.

Secondly, a series of studies have looked at how paper notes became widely accepted not because of a rising familiarity due to a saturation of different types of notes, but because of social endorsements and declaration movements towards the currency and the banks, especially during the array of financial crises that littered the 18th and 19th Century. Shin's thesis[16] argues that it is thanks to declaration movements across the country that the credibility of paper as an acceptable form of payment was bolstered. This phenomenon was not confined to London but also occurred in other major towns and cities across England. Thus, it can be said that the extent and the role of these endorsements, from the way they came into being to the legal backing such declarations received, in conjunction with a growing familiarity of paper notes, played a pivotal role in the nation and general public accepting paper notes as means of payments. Although Shin focuses on declaration movements for Bank of England Notes and cities across the UK, Frame steps outside of the metropolis and analyses this phenomenon with country banks and their local paper notes.[17] Finally, drawing on these arguments of endorsements, James offers a different perspective on how certain banks survived financial crises and ties the literature within an institutional framework by looking at the monetary architecture during these crises, with the Bank of England at its centre and as an unofficial lender of last resort.[18]

[16] Hiroki Shin, 'The Culture of Paper Money in Britain: The Bank of England Note during the Bank Restriction Period, 1797-1821.' (PhD Thesis, Cambridge 2009).
[17] Frame (n 12).
[18] John A James, 'Panics, Payments Disruptions and the Bank of England before 1826' (2012) 19 Financial History Review 289.

Finally, this line of enquiry can be further examined in relation to Frame's thesis that sought to show the variety of mechanisms, and law's constitutive role, in protecting, promoting, and accepting local banknotes while also playing a mounting role in the protection of individual rights.[19] The close relationship between government and the Bank of England during the 19th Century played a key role in the Bank's success in maintaining centralised control over how they dealt with forgery and the banknotes themselves. Chapter 4 will elaborate on this notion further with the help of archival material.

Taken as a whole, these overlapping themes reveal the key drivers behind the growing public acceptance and familiarity of paper money during the 18th and 19th Century. This diverse and complex social, economic, and legal roadmap that resulted in paper money being widely accepted as means of payment in Britain culminated with Bank of England Notes eventually being considered legal tender by 1844. However, although the impact of paper money has been explored, and case studies have been made on specific notes by different authors, legal scholarship remains limited on this subject. Indeed, there has only been little and dispersed legal scholarship on how legislation and other forms of regulation actively influenced the ascent of paper money and contributed to it being accepted during this time. Chapter 4 will aim to address this gap to a certain extent by exploring in more detail the various factors, from the bank's perspective, that helped banknotes reach systemic status during the Restriction Period and the role forgery played in undermining the notes' stability.

1.2.3. From Acceptance to Forgery

Thus, the literature surrounding this first theme has shown how banknotes became significant: an increasing proportion of the population being exposed to this new form of

[19] Ian Frame, '"Country Rag Merchants" and "Octopus Tentacles": An Analysis of Law's Contribution to the Creation of Money in England and Wales, 1790-1844' (PhD Thesis, Kent 2012).

currency, through a saturation of types of notes. Courts, government institutions and local communities endorsing and accepting these notes and declaring paper notes as acceptable as money. Finally. law playing a constitutive role in protecting and promoting banknotes as a mode of payment. The financial necessity of paper notes and the government's drive to build trust in paper seem to suggest the harsh stances adopted by both; the State in legislating forgery statutes; and the Bank of England stance in prosecuting individuals; to deal with the explosion of forgery during the Restriction Period. Therefore, forgery was the criminal response to this particular innovation of money and aimed to undermine financial stability and the growing acceptance of paper as a means of payment. Reflecting on Ferguson's argument that finance and money is a mirror of the human psyche,[20] it did not take long for individuals to take advantage of the crisis derived from the suspension of banknotes during the Restriction Period.

1.3. Banknote Forgery in the 18th And 19th Century

1.3.1. From Science to Sociology: A study of Forgery

It has mostly been historians, legal historians and criminologists that have focused on forgery during the 18th and 19th Century with many focusing on the Restriction Period, with little dialogue between each discipline. Moreover, acknowledgement must be given to the scientific community who have, in recent years, looked at the technology and scientific innovations in the creation of banknotes to tackle forgery and counterfeiting. Notably, the rise of polymer notes has spurred an increasing body of work looking at counter-forgery techniques and the science behind them. A prime example of such literature can be found in Prime and Solomon's article tackling the introduction of the very first plastic note in Australia.[21]

[20] Ferguson (n 10). 362.
[21] Emma L Prime and David H Solomon, 'Australia's Plastic Banknotes: Fighting Counterfeit Currency' (2010) 49 Angewandte Chemie International Edition 3726.

Overall, Emsley's book[22] complimented by Godfrey and Lawrence's[23] body of work serve as the benchmark for the understanding of crime and society during that period, placing forgery within a greater framework of criminal justice. Yet both works do not go into great detail over the impact such a *financial* crime, through the lens of monetary instruments, may have had on society and financial institutions. As will become clear in the following paragraphs, there seems to be a lack of discussion between the literatures surrounding the first underlying theme of this section: the rise and acceptance of paper money, and the monetary crime associated with it: forgery. As such the second underlying theme of this section will focus instead at how the literature on forgery in this timeframe has been used as a focus for institutional change, analysing its effects on both organisations and criminal history. Therefore, drawing on various historical and criminologist literature, it would seem that there are three concepts driving the study of forgery in the 18th and 19th Century. The first is using forgery as a lens to study institutional and societal changes; the second is to reflect on the reactive attitude taken by government and those affected by forgery. The third is the study of Victorian England through the lens of forgery to gain a better understanding of the social reality of the era and how society functioned in the past.

1.3.2. Variety of Perceptions and Disciplines Tackling Forgery during this Era

Recent studies have aimed to explore a more social aspect of forgery and paper notes. In particular, works within the literature have aimed to illustrate the 'social reality' behind the crime of forgery and to explore the variety of perceptions of the crime and paper notes during that era. Indeed, Mockford thesis[24] fills a substantial gap in assessing the 'history from below' of forgery by looking at how those most affected by the crime perceived it. Likewise, articles

[22] Clive Emsley, *Crime and Society in England, 1750- 1900* (5th edn, Routledge 2018).
[23] Barry Godfrey and Paul Lawrence, *Crime and Justice since 1750* (2nd edn, Routledge 2015).
[24] Jack Mockford, '"They Are Exactly as Banknotes Are": Perceptions and Technologies of Bank Note Forgery During the Bank Restriction Period, 1797-1821' (PhD Thesis, Hertfordshire 2014).

by Lahikainen's[25] and Robertson[26] look at the role played by the aesthetic of banknotes in shaping public sentiment towards the authenticity of paper money and crimes arising as a result of monetary innovation.

Likewise, a more detailed study tackling money and crime specifically in the 19th Century has been undertaken by Selgin[27] where he aims to demystify the crimes associated with goldsmiths with the use of primary sources and testimonies to revisit previous assumptions and perceptions of goldsmiths as dishonest individuals. Interestingly, in this pursuit of social reality, three different disciplines; Sociology, History of Art, and Criminology, all revisit this period and interpret crime through the narrow lens of their own discipline, revealing in the process the widening interdisciplinary gap in trying to understand this timeframe. This lack of dialogue, and disciplinary focus is further illustrated by the study of the 'Bloody Code'.

1.3.3. Rethinking the 'Bloody Code' and Institutional Focus through Forgery

A common thread between paper notes and forgery during this period was its association with capital punishment and the hike of forgery that occurred with the advent of the Restriction Period. Wennerlind's article[28] provides insightful arguments towards the use of capital punishment to curb the spread of forgery. Wennerlind draws parallels between capital punishment and government policy in justifying the death penalty, echoing Desan's arguments of the role of governments in shaping money and monetary policy. This is most apparent when looking at the two principal authors on forgery in this era, McGowen and Handler, who have

[25] Amanda Lahikainen, 'Currency from Opinion: Imitation Banknotes and the Materiality of Paper Currency in Britain, 1782–1847' (2017) 40 Art History 104.
[26] Frances Robertson, 'The Aesthetics of Authenticity: Printed Banknotes as Industrial Currency' (2005) 46 Technology and Culture 31.
[27] George Selgin, 'Those Dishonest Goldsmiths' (2012) 19 Financial History Review 269.
[28] Carl Wennerlind, 'The Death Penalty as Monetary Policy: The Practice and Punishment of Monetary Crime, 1690–1830' (2004) 36 History of Political Economy 131.

extensively explored the relationship between banknotes, the crime of forgery arising as a result and the impact it has had on society through a historical and legal historical lens. Handler is the most recent academic to revisit this timeframe in regard to forgery, building upon McGowen's work and the wider body of literature concerning the 'Bloody Code', and has published two works focusing on the role and impact of forgery on penal reform.[29]

Handler's first article[30] brings new insight in both criminology and legal history literature. It tackles concepts of penal reform and sheds new light on the roots and influences that changed capital punishment in the early 19th Century. Likewise, it explores in great detail the role and scope of forgery in the early days of paper notes. Handler argues that it is the crisis resulting from those paper notes, a growing resentment towards the Bank of England, and a growing disquiet towards the death penalty as a proportionate penalty for forgeries, that resulted in a growing interest in penal reform in the 19th Century and the establishment of the 1819 Select Committee on Criminal Laws.

McGowen on the other hand starts his body of research by exploring the relationship between forgery and society during the 18th Century by looking at the evolution of legislation surrounding the 'Bloody Code'.[31] He aims to explore how the emergence of piecemeal legislation regarding the offence took place. McGowen does point out that the passage of forgery statutes was due to a concern over the economic and military security of the state.[32] Forgery also carried a further element in grasping the minds of the population and legislators

[29] Phil Handler, 'Forging the Agenda: The 1819 Select Committee on the Criminal Laws Revisited' (2004) 25 Journal of Legal History 249; Phil Handler, 'Forgery and the End of the "Bloody Code" in Early Nineteenth-Century England' (2005) 48 The Historical Journal 683.
[30] Handler, 'Forging the Agenda: The 1819 Select Committee on the Criminal Laws Revisited' (n 29).
[31] Randall McGowen, 'Making the "Bloody Code"? Forgery Legislation in Eighteenth-Century England' in Norma Landau (ed), *Law, Crime and English Society: 1660-1830* (1st edn, Cambridge University Press 2002).
[32] ibid. 121.

as its perpetrators were deemed to be 'respectable'.[33] It can therefore be said that there was an additional symbolic and moralistic consideration when dealing with the crime.[34] McGowen reflects on this flood of legislation and argues that it portrays a society increasingly dependent on certain types of paper and capital sanction became a bureaucratic reflex, echoing currents of unease running through the governing classes.[35] However, as a whole, McGowen adds strengths to the argument that both crime, and as McGowen points out, imaginative fears, contributed to a reactive process from government in dealing with crimes arising from this evolving economy. This can be seen clearly with the rise of the 1729 forgery statute.

In using forgery as a lens for institutional change, McGowen examines in detail the origin of the forgery statute of 1729 and the landmark case that gave rise to it. In particular, McGowen is keen to reassess previous historical assumptions about 18th Century criminal law.[36] Indeed, McGowen's closer study of the 1729 act reveals that although it represented the growth in the steady but piecemeal legislation regarding forgery, it was an abrupt departure from the majority of previous capital statutes.[37] This is supported by McGowen's analysis of the growing influence of the Bank of England in dealing with banknotes forgeries during the Restriction Period where he reveals that government was not the only actor in responding to the crime as the singular nature of 18th Century criminal justice meant that the Bank of England and the legal profession itself, through solicitors employed by the bank, also had a tremendous impact and influence in these responses, to the extent that the Bank successfully monopolised actors and governmental supports in order to push their counter forgery agenda.[38] This is

[33] ibid. 125.
[34] ibid. 125.
[35] ibid. 136.
[36] Randall McGowen, 'From Pillory to Gallows: The Punishment of Forgery in the Age of the Financial Revolution' (1999) 165 The Past and Present Society 107. 109.
[37] ibid. 109.
[38] Randall McGowen, 'Managing the Gallows: The Bank of England and the Death Penalty, 1797-1821' (2007) 25 Law and History Review 241. 243.

particularly important in contextualising the actions and decisions taken by the Bank of England that will be explored in Chapter 4 as the key tension captured by the chapter is whether the bank could find the right balance between improving their notes, or continuing with the unpopular prosecution of forgers and utterers. In other words, whether the monopolistic control by the Bank over its own instrument focused on security or scalability, prevention, or deterrence through prosecutions.

Throughout his works, McGowen, and scholars interested in forgery and the death penalty, have broken away from previous established scholarly views stating that the gallows were employed "as a crude instrument, an extravagant and messy exercise of power."[39] Through an understanding of forgery's influence on the 18th and 19th Century, it is argued that the gallows were not used to serve a certain class, but, using the Bank of England as an example, to advance the corporation's own corporate and financial interests, justified on the basis of the special role and character its banknotes played.[40] Thus, the benefit of using the gallows was seen as powerful and valuable tool in securing 'lower' convictions and reducing the costs of capital punishment prosecutions, especially at a time when policing was underdeveloped.[41]

This can further be highlighted by McGowen's use of forgery as an institutional focus to discover the impact forgery had on that era. McGowen conducts a thorough analysis of the relationship between the Bank of England, the police force, and forgery by looking at the prosecution and investigation of the crime during the Restriction Period, and using the offence

[39] ibid. 280.
[40] ibid. 280.
[41] ibid. 280.

as a lens to look at the policing reform that resulted from the Bank of England's exploitation of the police regime of the era.[42] Finally, building on Oldham's unique research on informal law making in England[43], McGowen also looks at the impact of forgery on the justice system and how it influenced a change on how decisions were made. [44] Handler also then builds upon these two scholarly works to study the incorporation of the Court for Crown Cases Reserved in 1848.[45]

What is also striking from McGowen's work is his aim to use forgery and its varied impacts to get a better understanding of the past. In particular, by looking at the history behind the 1729 Forgery statute and the circumstances in which it arose, McGowen looks at the intimate account of the facts of the 1728 case, revealing in the process the social life of that era, and the intricacies of the world of London Finance.[46] By painting a picture of how the Bank of England used the established structure of the police in England at the time to prosecute forgeries, McGowen also sheds a light on the social reality of the period and provides a better understanding of how the emerging police force worked in the Victorian Era. It also highlights how, through the Bank's abuse of contemporary norms in police work, it engendered dissatisfaction in the policing system as whole, thus paving the way for change. Finally, by looking at the way in which the justice system changed to promote reserved decisions, McGowen aims to uncover the intricacies and the reasonings of how judges, defence lawyers

[42] Randall McGowen, 'The Bank of England and the Policing of Forgery 1797-1821' (2005) 186 The Past and Present Society 81.
[43] James Oldham, 'Informal Lawmaking in England by the Twelve Judges in the Late Eighteenth and Early Nineteenth Centuries' (2011) 29 American Society for Legal History 181.
[44] Randall McGowen, 'Forgery and the Twelve Judges in Eighteenth-Century England' (2011) 29 Law and History Review 221.
[45] Phil Handler, 'The Court for Crown Cases Reserved, 1848–1908' (2011) 29 Law and History Review 259.
[46] McGowen, 'From Pillory to Gallows: The Punishment of Forgery in the Age of the Financial Revolution' (n 36). 109.

and the crime of forgery came to play a crucial role in developing the practice of reserving decisions in crown cases.[47]

1.4. Identifying Gaps

Thus, banknote forgery has been studied extensively to establish the crime's influence on short term institutional change, with no focus on wider or long-term ramifications. Moreover, the relationships between banknotes, the criminal elements of forgery and a closer analysis of forms of regulation introduced to tackle this particular crime during that period has largely been unexplored.

Thus, the literature has already focused on more social and historical narratives of banknotes and forgery. An interdisciplinary analysis, drawing on law, history and criminology resources could help shed a light on whether forgery contributed to an evolution of banknotes during the 19th Century and highlight the patterns and processes in which this occurred. Indeed, it is crucial to explore and understand how both banknotes and forgery adapted and changed in response to actions taken by issuing institutions and forms of regulation. This will help shed a light on how the most serious challenge on money of the period was dealt with.

2. Credit Card Fraud

2.1. Key Themes

The literature concerning credit card fraud is anchored in legal and regulatory scholarship and covers three overlapping literatures. The first encompasses the literature situated outside the UK, which highlights credit card fraud's international component. The second engages with the prevention of credit card fraud in the UK, which overlaps with changes

[47] McGowen, 'Forgery and the Twelve Judges in Eighteenth-Century England' (n 44). 223.

in regulation and policy regarding fraud on a wider scale. Finally, the third area of research expands on the previous theme by looking at cybercrime and credit card fraud's place within this new body of scholarship.

2.2. International and Comparative Studies

Within the literature, Australia, the US and Canada have released an extensive body of research concerning credit card fraud, which correlated with the UK, seems to show that credit card fraud has historically been and still is, seriously underreported. Taylor, with data from Australia, established that the underreporting of credit card fraud by small businesses was due to a pessimistic belief that nothing could be done to tackle the crime.[48] Taylor also raised the issue that police could do more in order to deal with the offence and increase the willingness of individuals reporting such activity in order to have police data reflect the true levels of crime.[49] In a similar vein, Canadian literature in the 1990s published two articles with the aim to inform the public about crimes associated with credit cards[50] while also giving information about the best way to prevent it.[51] The trend of the literature raising awareness of the crime and offering preventive measures is echoed in the US and the UK.[52]

Likewise, there is a growing body of scholarship undertaking comparative and international analysis of credit card fraud in developing countries, where the rise in use of credit cards seems to have exacerbated credit card fraud. Of note is Williams' account of credit card

[48] Natalie Taylor, 'Under-Reporting Of Crime Against Small Businesses: Attitudes Toward Police And Reporting Practices' (2002) 13 Policing & Society 79. 79.
[49] ibid. 88.
[50] SJ Ross, 'Crime in the Cards' (1998) 105 Canadian Banker 24.
[51] Michael Ballard, 'Preventing Credit Card Crime' (1992) 99 Canadian Banker 34.
[52] Katherine J Barker, Jackie D'Amato and Paul Sheridon, 'Credit Card Fraud: Awareness and Prevention' (2008) 15 Journal of Financial Crime 398.

fraud in Trinidad and Tobago,[53] Yu-Feng analysing responses in Taiwan,[54] and Prabowo doing a comparative analysis of fraud prevention practices between the UK, US, Australia and Indonesia.[55] Interestingly, mention of credit card fraud in developing countries occurred after it was first raised in the US and the UK. This echoes Edgerton's notion of emerging countries using 'créole' technologies, adopting and adapting pre-existing technologies.[56] It also shows that these countries embraced this new and emerging technology after more economically advanced states, paving the way for academia to shift their analysis to the criminal opportunities offered by this new monetary innovation. Although it would be interesting to map out whether the journey by these emerging economies to tackle credit card fraud takes a belated yet similar route to that of the UK or the US, it would be outside the scope of this thesis to adequately compare this area of scholarship.

Moreover, it was in the US that the first hints of a rise in crime associated with credit card use was mentioned. Caminer argued in 1985 that credit card fraud was a neglected crime.[57] Caminer's early account of credit card fraud reveals a dire warning for the potential repercussions and ability of criminals to adapt to technology. He established that in the US, glaring legal loopholes, in conjunction with a rise of credit card fraud being faster than credit card adoption, pointed towards the substantial economic loss caused by such actions and the

[53] Dave Arthur Williams, 'Credit Card Fraud in Trinidad and Tobago' (2007) 14 Journal of Financial Crime 340.
[54] Ma Yu-Feng, 'Tendency and Responses to Credit Card Fraud in Taiwan' (2005) 12 Journal of Financial Crime 344.
[55] Hendi Yogi Prabowo, 'Building Our Defence against Credit Card Fraud: A Strategic View' (2011) 14 Journal of Money Laundering Control 371.
[56] David Edgerton, *The Shock of the Old: Technology and Global History since 1900* (1st edn, Profile Books 2006).
[57] Brian F Caminer, 'Credit Card Fraud: The Neglected Crime' (1985) 76 The Journal of Criminal Law and Criminology 746.

customers having to bear those losses.[58] Moreover, the facility in which credit card fraud was committed and the difficulties of it being detected were also key components of its rise.[59]

Interestingly there is already a clear evolution of modus operandi and advice regarding credit card crimes in the space of 10 years by reflecting, at this early stage and scope, at scholarly advice. For example, whereas Ballard argues that credit card crimes are clearly focused on the user, even advising consumers to treat cards like cash, and to take the same steps against theft, Barker et al, writing nearly two decades after Caminer, clearly acknowledges the rise of technology and considers more innovative approaches in fraudulently taking card details from users. Moreover, there is a growing consensus that the approach to prevent credit card fraud is not and should not be confined to a legal or policy response. This narrative is further accentuated in the present day when the activities regarding credit card fraud have moved online. Therefore, this brief exploration of international and comparative literature hints at the challenges and struggles faced by legislators and consumers. It also begins to highlight the jurisdictional issues arising out of new monetary instruments, where their monetary landscape is increasingly moving away from sovereign territories.

2.3. Card Fraud in the 1990s

Levi and the Fraud Advisory Panel (FAP) have been at the forefront of enquiries and research into fraud in England and Wales. Levi et al conducted initial research into credit card fraud which looked at both cheques and credit card in "a modest explanatory study of an area of crime previously unresearched in the UK."[60] The main drive behind this study was the growing economic cost and impact of this type of monetary crime. Levi et al recounts the

[58] ibid. 762.
[59] ibid. 747.
[60] Michael Levi, Paul Bissel and Tony Richardson, *The Prevention of Cheque and Credit Card Fraud* (Home Office Crime Prevention Unit Paper 26 1991). 1.

methods in which cards come to be fraudulently used, from "false applications, theft in transit, misuse by genuine cardholders, and the recycling of lost or stolen cards through criminal markets."[61] Yet even at this stage, the monetary crime was being analysed through the consumer's perspective.

Due to the novelty of the crime, the focus, just like the articles from Canada, places an emphasis on prevention, listing the best steps to prevent each type of fraudulent behaviour concerning credit cards. Interestingly, the recommendations focus on raising public awareness, increasing data sharing between police and issuing institutions, with a particular emphasis that the "primary burden of prevention ought to lie on the industry itself."[62] Government action and legislative measures are not mentioned in this report, but Levi argues that the private sector, working with the police, is said to be the best way to tackle credit card fraud. This notion will be analysed in Chapter 5, where Barclaycard's actions in relation to the rise of the credit industry and associated fraud will be explored.

Academic interest then strengthened and became focused on credit cards rather than cheques. Further hinting, similarly, to the literature in the previous section, about the overlap between emerging forms of money and existing monetary instruments. Laidlaw explored the legal effect of fraud, malfunction and mistake in payment card transactions in 1992, where he concludes that it is an area that has been largely unexplored, and that in England and Wales, there has not been any clear statutory rules or judicial precedent for the resolution of these

[61] ibid. 7.
[62] ibid. 46.

disputes.[63] This legal historical context offers an insightful anchor to map out the process of legal change concerning credit card fraud.

Following from Levi et al's work, Gould in 1993 looked into more detail at plastic card crime prevention, focusing in particular on the initiatives taken during that period.[64] Gould reflects on the Card Watch campaign, targeting those more susceptible of falling for credit card crimes, to the relationships between retail and police needed to ensure the safe distribution of cards, and the creation of formal links between the previous Association for Payment Clearing Services (APACS), which is now the UK Payments Administration (UKPA), and the British Retail Consortium to address plastic card crime. Gould shows that fraud prevention measures are proving successful in the short term, with the economic loss due to credit card fraud lowering from the previous year.[65]

Gould also hints at the technological advancements that will arguably herald a new era of security in credit card transactions. From smart cards, to better magnetic stripes, and secure PIN numbers, Gould assures that with the continued involvement of banks, the retail industry and technology, the war against plastic card fraud will be won.[66] This is supported by Harris who is confident that smart cards, and the chip in particular, will protect plastic cards against types of fraud well into the 21st Century.[67] It is important to note at this point that a clear evolution and social history of electronic modes of payment in the UK, with a focus on credit cards is scarcely complete. This is in stark contrast to banknotes which has an established body

[63] Andrew Laidlaw, 'EFT and EDI - Legal Consequences of Fraud, Malfunctions and Mistakes in Payment Card Transactions' (1992) 6 International Review of Law, Computers & Technology 89. 98.
[64] Martyn Gould, 'Plastic Card Crime and Fraud Prevention' (1993) 21 International Journal of Retail & Distribution Management 34. 34.
[65] ibid. 35.
[66] ibid. 38.
[67] Lorna Harris, 'Turning the Tide of Plastic Card Fraud' (1996) 3 Journal of Financial Crime 288. 290.

of scholarship on its rise and acceptability. This lack of historical perspective on the rise of credit card shows that a key historical contextual element may be missing in understanding customer trends of adoption and usage which will have to be addressed. Chapter 5 will aim to address this to a narrow extent by looking at the formative years of Barclaycard, mapping the decision-making processes leading to its introduction in 1966, the processes of innovation, its rise to systemic status, and its fight with fraud.

This institutional co-operative approach is further emphasised in an article by Oliver in 1995.[68] He highlights the successes in tackling plastic crimes and the downward spiral of economic losses due to the investment and money spent on updating and making credit card more secure. However, he does single out a significant point, that "there is a long way to go in educating both the government and the legal profession in the fact that plastics fraud really is big business, represents financial fraud of a most serious nature and really does pose a threat to the stability of British financial institutions."[69]

As opposed to banknotes where government recognised early on the financial vitality of paper money in maintaining trust in the economy, with forgery representing the erosion of that trust, it seems that in the case of credit card, the onus was on the banking and retail industry to tackle the rise of fraud rather than government. Although, parallels can be drawn with the Bank of England monopolisation of policing and action in combating forgery, government did play a more constitutive role in tackling forgery than it did with credit card fraud. Indeed, the literature in the early 1990s seem to entrust the banks, retail, and the networks created between them and the police, rather than actions taken by government. This approach is grounded in an

[68] Derek J Oliver, 'Plastic Card Fraud: A Matter of Intelligence' (1995) 2 Journal of Financial Crime 300.
[69] ibid. 305.

optimistic belief that technology's advancement will secure this new electronic mode of payment. Ironically, it is this similar 'technological' thinking that also underpins Bitcoin's departure from the very centralised system that this philosophy in the 1990s was aiming to promote. Leaving the industry to deal with this rise in crime is further supported by Watts, a Detective Inspector in charge of the Thames Valley Police Fraud Squad, who argues that retail should deal with this issue and the role of the police should be limited.[70] This begins to highlights a common theme permeating through this project which is the gradual decentralisation of decision-making and actors involved in the functioning, maintaining, and protecting of each monetary instrument, and the benefits or limitations associated with such an approach. Chapters 4, 5, & 6, dealing with each case study, will engage with this *evolution* in detail.

Furthermore, Watts' article was the first to reflect on the types of individuals conducting these criminal activities and to criticize the industry's drive on prevention. Watts argues that "plastic cards provide lucrative and attractive facilities for the casual, opportunist and career criminal alike."[71] He then points out that the prevention of credit card fraud is undertaken based on a business case model, where fraud reduction investment will always be confined to a level which is judged to be economic.[72] Initiatives that could be too costly to implement or that would inhibit customer usage are also rejected.[73] Watts further argues that "these business decisions are being made from an artificially beneficial standpoint on the part

[70] WA Watts, 'Policing Plastic' (1999) 7 Journal of Financial Crime 67. 69.
[71] ibid. 67.
[72] ibid. 67.
[73] ibid. 67.

of the industry."[74] The costs incurred by the public purse for the enforcement of criminal legislation are not considered.[75]

Watts then argues that the regulation of this industry should be considered, although he does not mention legislative steps directly, he does draw comparisons with regulatory bodies of other industrial sectors which police themselves by other means than publicly funded police force.[76] Watts drastic proposition is for the police to withdraw from the bulk level of credit card fraud, while still playing a role in major crime, organised crime and conspiracy offences, in order for the industry to bear the full brunt of the costs in dealing with this hidden expense from the public purse. This would then motivate market forces to develop new and responsible preventative measures, while the banking and finance sector would also enjoy greater control and influence over its own affairs.[77] This would be akin to the monopoly enjoyed by the Bank of England in tackling banknote forgery.

Drawing these viewpoints together is Levi et al's reflection on the journey of card fraud since their first article in 1991.[78] Levi reflects that the steps taken in 1995 did manage to dull the losses incurred from credit card fraud, but that a steady rise since then has occurred.[79] What is interesting, is that Levi notices a significant change in the pattern of fraud, where different categories of fraud are becoming more prominent as criminal activities adapt to preventive

[74] ibid. 68.
[75] ibid. 68.
[76] ibid. 68.
[77] ibid. 69.
[78] Michael Levi and Jim Handley, *Criminal Justice and the Future of Payment Card Fraud* (IPPR 2002).
[79] ibid. 5.

measures. Levi achieves this consensus by analysing quantitative data gathered from police records and the British Crime survey.[80]

Levi then goes into detail in how credit card is actually performed, and notes that it would be a mistake to analyse payment card fraud as a unitary phenomenon, and it should rather be seen as "a number of related activities with different modus operandi, knowledge and skill requirements."[81] Furthermore, greater use will provide more opportunity for fraud, and that until a completely secure payment system is devised then they will always be a risk of fraud.[82] Indeed, as Levi remarks: "to rely on a single system or measure of prevention, no matter how sophisticated, is courting disaster and a mixed package of prevention measures will remain necessary."[83] This notion is key. Chapter 5 will clearly show that Barclaycard acknowledged and was keenly aware of the different types of fraudulent activities related to their operation, not only on the card itself, but on the various elements underpinning the bank's credit operations.

As a result, the most suitable approach is, according to Levi, to target the weakest links in the process of credit card fraud, which can change over time.[84] These weak links correspond to card authentication, cardholder verification, application frauds and the identification of points of compromise (locations and merchants where card fraud is more likely to happen). Indeed, it is important to "refocus prevention measures adaptively as well as being proactive in anticipating new threats and developing new security measures before the old ones are

[80] ibid. 7.
[81] ibid. 16.
[82] ibid. 17.
[83] ibid. 18.
[84] ibid. 16.

compromised."[85] Unfortunately, although the collaboration and communication between stakeholders are rising, the way of making resources available still remain unexplored.[86] This ties into a wider narrative where specific crimes associated with monetary instruments is not conducive to analysis and dealing with the complex challenges associated with dealing with crimes *directly* associated with money. Similarly to the various offences of forgery: possession of a forged note, uttering a forged note, creating bank paper, creating an engraving plate to create a forged note, and going so far as taking into account similar offences associated with bullion, a conceptual meaning of monetary crime should be developed and reposited in order to encapsulate these types of harmful activities under a clearly defined term. This will be the underlying purpose of Chapter 3.

2.4. Fraud on a wider Scale

The interest in card fraud seems to falter after the early 2000s. The Fraud Advice Panel's 2004 report being the last substantive study on the topic.[87] This is partly due to a slow shift of criminal offences, including card fraud, being encapsulated in the government's study of fraud, which debuted in 1986 with the Roskill Report on Fraud Trials.[88] Likewise, the process of consultation leading to the Fraud Act 2006 also engulfs card frauds.[89] This shows government taking a holistic approach to fraud, a step away, it seems, from the recommendations previously mentioned, though supported by historical antecedent. Indeed, this is akin to the 1729 statute of forgery which introduced the first all-encompassing statute in dealing with forgery.

[85] ibid. 23.
[86] ibid. 27.
[87] Steven Philippsohn, *Credit Card Fraud* (The Fraud Advisory Panel Working Party Papers 2004).
[88] Lord Roskill, 'Fraud Trials Committee Report' (HMSO 1986).
[89] Fraud Review Team, 'Fraud Review Final Report' (Attorney's General Office 2006).

There is a body of literature looking at the legislative reforms of fraud. For example, Levi's extensive coverage of this issue[90], Raphael[91], and FAP[92] all evaluate the effects of the Roskill report and its recommendations in the first major overhaul of fraud in England and Wales within this case study. Likewise, works by Withey[93] and FAP[94] reflect on the introduction and aftermath of the Fraud Act in 2006. Withey's article is a welcomed departure from preventive measures recommendations as it provides a legal analysis between the former law and how the current statute functions. Withey assures that the Fraud Act would be able to encompass card fraud in general, even in relation to the internet,[95] however, since the article was written in 2007, there is little case law available to substantiate this claim. An issue that a more recent analysis on the subject would be able to reveal. Although it would be tempting to start analysing these reforms in more depth, since they concern fraud generally I am keen to keep this review confined to plastic card fraud. The transition of card fraud to a digital or online sphere therefore warrants more attention.

2.5. Card Fraud and the rise of Cybercrime

Recently, the rise in card use and online activity, and the expansion of technology associated with cards have meant that a slight renewal of interest on credit card fraud has happened, albeit with the lens of cyberfraud. Levi once again revisits this area in recent articles and reflects on the trends of online crime.[96] Levi analyses National statistics on cybercrime for

[90] Michael Levi, 'Fraud in the Courts - Roskill in Context' (1986) 26 British Journal of Criminology 394; Michael Levi, 'Reforming the Criminal Fraud Trial: An Overview of the Roskill Proposals' (1986) 13 Journal of Law and Society 117; Michael Levi, 'The Roskill Fraud Commission Revisited: An Assessment' (2003) 11 Journal of Financial Crime 38.
[91] Monty Raphael, 'Fraud on Trial - Reviewing The Roskill Legacy' (2003) 11 Journal of Financial Crime 8.
[92] Monty Raphael, *Roskill Revisited: Is There a Case for a Unified Fraud Prosecution Office?* (The Fraud Advisory Panel 2010).
[93] Carol Withey, 'The Fraud Act 2006—Some Early Observations and Comparisons with the Former Law' [2007] The Journal of Criminal Law 220.
[94] The Fraud Advisory Panel, *Fraud Review 10 Years On* (The Fraud Advisory Panel 2016).
[95] Withey (n 93). 236.
[96] Michael Levi, 'Assessing the Trends, Scale and Nature of Economic Cybercrimes: Overview and Issues' (2017) 67 Crime, Law and Social Change 3; Michael Levi and others, 'Cyberfraud and the Implications for Effective Risk-Based Responses: Themes from UK Research' (2017) 67 Crime, Law and Social Change 77.

financial gain (cyberfraud) against individuals.[97] He highlights the difficulties in getting accurate measures between offline and online fraud and attempting to differentiate online cybercrimes is more difficult.[98] Levi distinguishes between traditional crimes which are conducted online, transitional crimes, such as credit card fraud, "whose modus operandi has changed substantially as a result of the move online"[99], new crimes that are a result from the internet, and platform crimes, which facilitate other crimes. This framework is a great starting point in understanding the transition from 'physical' types of money, to digital iterations, and are useful when reflecting on the overall evolution of card fraud. It is worth acknowledging this wider body of scholarship, yet the scope of analysis for this project in relation to card fraud will be confined to the formative years of Barclaycard and as such, its cyber transition will not be explored in depth.

Even so, the conclusion drawn from Levi's data suggests that reactive law enforcement approaches to crime does not lend itself well to the rise of cybercrimes.[100] There needs to be a clear clarification of the agreements and resources attributed to the cooperative network that constitute this modern 'plural' policing incentive.[101] This reiterates the need to explore this transitional crime in the context of previous iterations of money, as previous steps and responses are often ignored when establishing current preventive measures, whilst also focusing on better communication between the plural actors involved in maintaining trust in the monetary system.

[97] Levi, 'Assessing the Trends, Scale and Nature of Economic Cybercrimes: Overview and Issues' (n 96). 5.
[98] ibid. 5.
[99] ibid. 14.
[100] Levi and others (n 96). 92.
[101] ibid. 93.

2.6. Identifying Gaps

The bulk of research done on card fraud seems to either focus on its economic impact (or ways of measuring it) and tend to rely on quantitative data, and on providing preventive advice. This reiterates another surprising gap in the literature which is the lack of analysis of legal material, such as cases, legislation and other forms of regulation when looking at the interactions between plastic cards and fraud. Shockingly, the only substantive legal analysis on this topic was in 1992 with Laidlaw's article,[102] and in 2007 with Withey's comment on the Fraud Act.[103] A further lacuna in the literature, which concerns the vertical lack of dialogue between historical periods, is also apparent since previous preventive actions being seemingly ignored when establishing current measures. Chapter 5 will focus on Barclaycard's introduction in order to highlight similarities and differences arising between the approaches taken by the BoE and Barclaycard in dealing with the rise and adoption of their instrument to systemic status, and the challenges posed by monetary crime.

3. Bitcoin

3.1. Wider Scholarship

Bitcoin, and the rise of cryptocurrencies, has been heralded as 'the future of money' and is currently perceived as the latest technological innovation in money. Cryptocurrencies in general have attracted a number of studies dealing with its many elements. Key themes arising out of this new scholarship have multiplied and it is therefore worth acknowledging the increasingly large scope of this bustling body of work.[104] Those themes are: the technological and computer science aspects of cryptocurrencies which falls outside the scope of this

[102] Laidlaw (n 63).
[103] Withey (n 93).
[104] Mark Holub and Jackie Johnson, 'Bitcoin Research Across Disciplines' (2018) 34 The Information Society 114.

project[105]; regulatory concerns and challenges due to legal uncertainty[106], which is further fragmented in relation to cryptocurrencies' core elements[107]; financial crime[108] with a current focus on money laundering and the finance of terrorism[109]; a focus on cryptocurrencies' elements such as: its association with existing monetary[110], commodity,[111] and property[112] discourse and use for transactions[113], decentralisation[114] and cross-border application[115], mining, blockchain and Distributed Ledger Technology (DLT)[116], and its anonymous or pseudo-anonymous features[117]; a wider literature on cryptocurrency derivatives: smart-contracts[118], stablecoins[119], CBDCs, and supply chain use; literature on its social life[120] or its impact on society, such as exploring the community of actors that adopt crypto[121] or the

[105] Marcel Morisse, 'Cryptocurrencies and Bitcoin: Charting the Research Landscape' (2015).
[106] William Magnuson, 'Financial Regulation in the Bitcoin Era' (2018) 23 Stanford Journal of Law, Business & Finance 159.
[107] Max I Raskin, 'Realm of the Coin: Bitcoin and Civil Procedure' (2015) 20 Fordham Journal of Corporate & Financial Law 969.
[108] Robby Houben and Alexander Snyers, 'Cryptocurrencies and Blockchain- Legal Context and Implications for Financial Crime, Money Laundering and Tax Evasion' (European Parliament 2018) PE 619.024. 54.
[109] Angela SM Irwin and others, 'Money Laundering and Terrorism Financing in Virtual Environments: A Feasibility Study' (2014) 17 Journal of Money Laundering Control 50.
[110] Ole Bjerg, 'How Is Bitcoin Money?' (2016) 33 Theory, Culture & Society 53.
[111] Mitchell Prentis, 'Regulating Bitcoin as a Commodity' (2015) 66 Case Western Reserve Law Review 609.
[112] David Fox, *Cryptocurrencies in the Common Law of Property* (1st edn, 2018).
[113] Trevor I Kiviat, 'Beyond Bitcoin: Issues in Regulating Blockchain Transactions' (2015) 65 Duke Law Journal 569.
[114] Mark Walport, 'Distributed Ledger Technology: Beyond Block Chain' (Government Office for Science 2016) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/492972/gs-16-1-distributed-ledger-technology.pdf> accessed 25 November 2018.
[115] US Library of Congress, 'Regulation of Cryptocurrency Around the World' (Global Legal Research Center 2018).
[116] Peter Yeoh, 'Regulatory Issues in Blockchain Technology' (2017) 25 Journal of Financial Regulation & Compliance 196.
[117] Perri Reynolds and Angela SM Irwin, 'Tracking Digital Footprints: Anonymity within the Bitcoin System' (2017) 20 Journal of Money Laundering Control 172.
[118] Nigel Gopie, 'What Are Smart Contracts on Blockchain?' (*IBM*, 2 July 2018) <https://www.ibm.com/blogs/blockchain/2018/07/what-are-smart-contracts-on-blockchain/> accessed 25 November 2018.
[119] Harry Eddis and others, 'UK Reveals Plans to Regulate Stablecoins' (*Linklaters Blogs*, 12 January 2021) <https://www.linklaters.com/en/insights/blogs/fintechlinks/2021/january/uk-government-reveals-plans-to-regulate-stablecoins>.
[120] Nigel Dodd, 'The Social Life of Bitcoin' [2017] Theory, Culture & Society 1.
[121] Nigel Dodd, 'Utopian Monies: Complementary Currencies, Bitcoin, and the Social Life of Money' in Nina Bandelj, Frederick F Wherry and Viviana A Zelizer (eds), *Money Talks: Explaining how money really works* (1st edn, Princeton University Press 2017).

environmental and energy impact caused by the mining of cryptocurrencies.[122] The themes that this literature review will address are focused on the interests of this project: crypto's association with existing monetary scholarship, its relationship and susceptibility to financial crime, and regulatory literature.

Importantly, the rise of cryptocurrencies must be situated alongside a gradual trajectory of loss of governmental and central bank control of money which is clearly articulated by Desan.[123] Money now appears as a medium that flows from independent producers rather than emanating from a monopolistic issuer. This is exemplified today by the decentralised system in place for Bitcoin and other emerging forms of money. Understanding this historical trajectory of loss of control from a central and sovereign mode of monetary architecture is crucial, especially when the social importance of money is showing no sign of receding. This notion will be further highlighted in Chapter 3. Moreover, access to money and using it in transactions is still hugely relevant today, with HM Treasury recently undertaking a recent study on the future of cash and digital payments in the economy.[124] Even though the technology and innovation of money continues to proliferate, the high dependency and the importance of its social functions within society ensures that money must remain able to carry out its functions.

Another factor of importance is that Bitcoin does not fall within one jurisdiction and there is no central intermediary, such as an issuer, that would normally be the focal point of

[122] Sandali Handagama, 'EU's Sweeping Crypto Regulations Package One Step Closer to Ratification' (*Coindesk Insights*, 14 March 2022) <https://www.coindesk.com/policy/2022/03/14/eus-sweeping-crypto-regulations-package-one-step-closer-to-ratification/>.
[123] Desan (n 9).
[124] HM Treasury, 'Cash and Digital Payments in the New Economy: Call for Evidence' (HM Treasury 2018).

regulation. This creates legal uncertainty that can make it difficult to properly control forms of criminal activities arising from this technological innovation. The problem is significant: even though the full scale of misuse of virtual currencies is unknown,[125] the market value of all cryptocurrencies circulating exceeded $250 billion worldwide in 2020[126] and is in 2022 at around $1.94 Trillion.[127] Unfortunately, scholarship analysing the relationships between Bitcoin and financial crime is sparse, though newspapers and news websites are quick to draw attention to criminal activities associated or facilitated by Bitcoin.[128] There are currently no leading authors on Bitcoin and crime. Indeed, the crimes identified in the literature either associated with Bitcoin or facilitated by the way it works, are money laundering and the finance of terrorism. There is also a lack of understanding on Bitcoin's rise and acceptance. A gap that this thesis will aim to address. Indeed, most literature has focused on the event that created Bitcoin, with its creator publishing a pamphlet advocating this new iteration of money and explaining the technology behind Bitcoin.[129]

3.2. Bitcoin and Regulation

Within regulatory literature, articles have focused either on regulating Bitcoin itself as a form of money, or on the blockchain itself, the technology that records every Bitcoin transaction through an open ledger system, or the modes of exchange between Bitcoin and national currencies. Most of this literature is drawn from the US as they have already undertaken a few steps in trying to regulate virtual currencies.

[125] Houben and Snyers (n 108).
[126] CoinMarketCap, 'CoinMarketCap' (2019) <https://coinmarketcap.com> accessed 13 February 2020.
[127] ibid.
[128] Marie-Helen Maras, 'Inside Darknet: The Takedown of Silk Road' (2014) 98 Criminal Justice Matters 22.
[129] Satoshi Nakamoto, 'Bitcoin Open Source Implementation of P2P Currency' (*P2P Foundation*, 2009) <http://p2pfoundation.ning.com/forum/topics/bitcoin-open-source> accessed 10 September 2018.

US literature focuses on the steps taken by several agencies, predominantly the Financial Crimes Enforcement Network (FinCEN), in trying to classify Bitcoin and its relationship with existing legislation in the US.[130] Further discussion on FinCEN's guidance on digital currencies can be found in Middlebrook et al's article, where they look at the steps taken by the Department of Justice (DOJ) and the Department of Homeland Security (DHS) and the many ambiguities remaining following this original clarification in 2013.[131] This highlights the central idea behind the regulation of bitcoin in that it should be the currency itself that should be regulated. Prentis argues that a first step in regulating Bitcoin would be to clearly classify and define it, while pushing for the cryptocurrency to be treated as a commodity in order to enable regulatory agencies, such as the Securities and Exchange Commission's (SEC) and the Commodity Futures Trading Commission (CFTC) to incorporate this new 'commodity' within their existing frameworks.[132]

Raskin offers a different perspective by applying existing rules of civil and criminal procedures to Bitcoin in the US.[133] By doing so Raskin argues that the most efficient way for judicial courts to deal with cryptocurrencies is to treat them like tangible property.[134] As Raskin concludes: "innovative technology does not have to mean innovative jurisprudence."[135] Although it could be said that these articles also examine the inherent nature of Bitcoin, it also shows the current challenges and debates in classifying and regulating it. Drawing parallels on the ways that banknotes became classified as legal tender could shed a revealing light on these

[130] Prentis (n 111). 616.
[131] Stephen T Middlebrook and Sarah Jane Hughes, 'Virtual Uncertainty: Developments in the Law of Electronic Payments and Financial Services' (2013) 69 The Business Lawyer 263.
[132] Prentis (n 111). 637.
[133] Raskin (n 107). 969.
[134] ibid. 1011.
[135] ibid. 1011.

current challenges. Moreover, Raskin's study highlights the need for a similar analysis of case law in England and Wales regarding Bitcoin and the judiciary.

The shortcomings of regulating Bitcoin as a commodity, tangible property, or as a form of money on its own, are that they would leave the other crucial elements underpinning Bitcoin outside the scope of regulation. This is the viewpoint taken by both Kiviat and Yeoh, where they argue that the crux in successfully regulating any form of cryptocurrency lies in its underlying technology: the blockchain. Kiviat is keen to expand on contemporary literature by highlighting the differences between the virtual currency and its key technological innovation.[136] He argues that the current American system of regulation is a patchwork of Bitcoin-specific guidance and rulings that present uncertainties and requires further clarification.[137]

Kiviat then goes beyond Bitcoin in order to highlight the opportunities blockchain technology may have on society, concluding that "regulation designed to mitigate the risks of such a powerful technology should be encouraged."[138] However, Kiviat warns that regulation aimed at addressing the monetary functions of Bitcoin should not harm the subsequent categories of innovations that advances in blockchain technology may create.[139] This seems to correspond to the EU's approach. Yeoh looked at the regulatory issues in blockchain technology in the US and EU and pointed out that the EU's approach to regulating innovative distributive technologies was to adopt a hands-off approach, preferring precautionary

[136] Kiviat (n 113). 573.
[137] ibid. 575.
[138] ibid. 607.
[139] ibid. 607.

monitoring rather than pre-emptive regulation in order to allow the technology to flourish while being able to offer specific regulation when the needs arise.[140]

Finally, Naheem reflects on the introduction of Bitlicensing rules in New York, a first form or regulation on virtual currencies, whereas any company that is involved in the receiving, storing or converting of virtual currencies should get a licence to do so.[141] Naheem argues that this has stifled opportunities as the entry costs in New York for digital companies is now too high.[142] The focus on companies dealing with Bitcoin, or in the exchange element of Bitcoin, is further undertaken by Simser. He compares Bitcoin to online exchange services such a PayPal, and advocates for similar regulations to be introduced.[143]

This plural approach in regulating Bitcoin emphasises the various elements that constitute this new type of money, from the currency itself, the technology underpinning it, and the market agents enabling it to be exchanged. It is clear that so far, no consensus has been reached within regulatory and legal scholarship, and that a proposal encompassing all these elements, and potentially others, has not yet been undertaken. There is therefore a growing need to identify each component of Bitcoin that can be regulated and that is susceptible to crime, in order to adapt responses to each element. Such a study would be similar to what Levi undertook for card fraud. Moreover, literature in the UK is worryingly absent from this debate. To date, government response has been on the rise. David Walls' contribution to the N8 is also worth mentioning reiterating the fact that enforcement agencies are underequipped and

[140] Yeoh (n 116). 204.
[141] Mohammed Ahmad Naheem, 'Regulating Virtual Currencies - the Challenges of Applying Fiat Currency Laws to Digital Technology Services' (2018) 25 Journal of Financial Crime 562. 567.
[142] ibid. 567.
[143] Jeffrey Simser, 'Bitcoin and Modern Alchemy: In Code We Trust' (2015) 22 Journal of Financial Crime 156. 167.

underprepared for dealing with such a new type of money and the crimes arising as a result.[144] Moreover, Fox has written on the applicability of property law doctrines on Bitcoin transactions.[145] This was further affirmed by a Legal Statement on cryptoassets,[146] and by recent case law.[147] Thus a disciplinary gap and lack of discussion between common issues can be seen to emerge.

The UK has also started directing its attention to cryptocurrencies by focusing on cryptoassets themselves,[148] as they have been recently categorised, blockchain technology,[149] and the fintech sector itself.[150] Although governmental organisations, such as HMRC, FCA[151], HMT, and the Law Society and the Bank of England, have started making consultations, the current responses and proposals in dealing with Bitcoin and emerging forms of money remain ineffective and disorganised. Indeed, the UK does not have, of yet, any laws that specifically regulate cryptocurrencies. It seems the FCA is gradually stepping up its consultations on cryptoassets, and the UK Jurisdiction taskforce has asked the Law Commission to give further legislative thought on the relationship between cryptoassets and the Law.[152] There is a sense that this is becoming increasingly necessary with Mark Carney reportedly stating that: "A better path would be to regulate elements of the crypto-asset ecosystem to combat illicit activities, promote market integrity, and protect the safety and soundness of the financial

[144] Philip Larrat and others, 'Policing Bitcoin: Investigating, Evidencing and Prosecuting Crimes Involving Cryptocurrency' (N8 Policing Research Partnership 2017) <http://n8prp.org.uk/wp-content/uploads/2017/08/N8-Cryptocurrency-Report.pdf>.
[145] Fox (n 112).
[146] UK Jurisdiction Taskforce, 'Legal Statement on Cryptoassets and Smart Contracts' (2019).
[147] *AA v Persons Unknowns* (2019) EWHC 3556.
[148] HM Treasury, FCA, and Bank of England, 'Cryptoassets Taskforce: Final Report' (HM Treasury 2018).
[149] Doug J Galen and others, 'Blockchain for Social Impact: Moving Beyond the Hype' (Stanford Business Center for Social Innovation 2018).
[150] Irina Mnohoghitnei and others, 'Embracing the Promise of Fintech' (Bank of England Fintech Hub 2019).
[151] FCA, 'Guidance on Cryptoassets - Consultation Paper' (FCA 2019) CP19/3.
[152] UK Jurisdiction Taskforce (n 146).

system."[153] More recently, both the EU, the Bank of England, and HMT have become increasingly interested in stablecoins[154], CBDCs and cryptocurrencies more generally. This has culminated in the first comprehensive regulatory proposal introduced by the EU in the form of MiCA[155], and HMT has followed suit by initiating a call for evidence for the regulation of stablecoins.[156] This will be explored in more detail in Chapter 6.

3.3. Bitcoin and Money Laundering

The relationship between Bitcoin and crime is complex, with many newspapers regularly engaging with stories of various ransomware, purchase of drugs, frauds, and theft from Bitcoin exchange networks. In the literature Maras' article offers a glimpse on the taking down of the Silk Road, a website on the dark net where you could buy illicit products in Bitcoin.[157] Maras revealed how the investigation over the Silk Road revealed the inner workings of these websites and that the anonymity afforded by Bitcoin, and its transactions through the blockchain, was a key component in websites like Silk Road spreading.[158] The article also highlighted the little amount of research undertaken on the dark net and the spread or influence of Bitcoin in this hidden sphere.[159] The anonymity of cryptocurrencies and methods to track these digital footprints have started being explored in academia by authors such as Irwin et al[160], Reynolds et al[161], and Turner et al[162]. However, the focus must remain

[153] US Library of Congress (n 115). 58.
[154] HM Treasury, 'UK Regulatory Approach to Cryptoassets and Stablecoins: Consultation and Call for Evidence' (HM Treasury 2021).
[155] EU Commission, 'REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Markets in Crypto-Assets, and Amending Directive (EU) 2019/1937' (European Commission) 2020/0265.
[156] HM Treasury (n 154).
[157] Maras (n 128). 23.
[158] ibid. 23.
[159] ibid. 23.
[160] Angela SM Irwin and others, 'Are the Financial Transactions Conducted inside Virtual Environments Truly Anonymous?' (2013) 16 Journal of Money Laundering Control 6.
[161] Reynolds and Irwin (n 117).
[162] Adam Turner and Angela SM Irwin, 'Bitcoin Transactions: A Digital Discovery of Illicit Activity on the Blockchain' (2018) 25 Journal of Financial Crime 109.

on Bitcoin and crime and it is therefore two criminal activities, money laundering and the finance of terrorism, that seem to garner the majority of academic attention.

Cryptocurrencies therefore creates new opportunities for the criminal that renders its control more difficult. Bitcoin's anonymity is increasingly being used for invisible illicit transactions, such as its use on the Silk Road dark web page[163], and for money laundering and the finance of terrorism. These criminal activities are importantly being moved online and tie in with the difficulties identified by Wall and Levi concerning this digital shift. Wall develops the trend of crimes being used with computers, where he identifies three generic types of cybercrime: Crimes against the machine (Integrity related cybercrime), Crimes using the machine (Computer assisted cybercrime), and Crimes in the machine (Content related cybercrime).[164] In regard to Bitcoin, most crimes are transitional crimes, using the elements of Bitcoin to conduct illicit dealings to perpetrate their activities. Some examples less studied in the literature are hacks on crypto wallets, fraudulently obtaining access to another's account, to the liabilities of exchange centres holding most of the Bitcoins being circulated today.[165]

Brown offers a welcomed analysis of Bitcoin and criminal activity with a UK perspective.[166] He also provides a useful overview of the rise, nature, and technology behind Bitcoin and aims to demystify the concept "that cryptocurrencies are still viewed as unfamiliar, marginal phenomenon restricted to the purview of specialists."[167] Indeed, Brown indicates that Bitcoin is not low-risk, especially for money laundering, and corresponds to substantial

[163] Maras (n 128).
[164] David Wall, *Cybercrimes: The Transformation of Crime in the Information Age* (1st edn, Polity 2007).
[165] BBC News, 'Bitcoin Wallet Bitfi Withdraws "unhackable" Claim' *BBC News* (London, 31 August 2018) <https://www.bbc.co.uk/news/technology-45368044> accessed 25 November 2018.
[166] Steven David Brown, 'Cryptocurrency and Criminality: The Bitcoin Opportunity' (2016) 89 Police Journal: Theory, Practice and Principles 327.
[167] ibid. 327.

opportunities for criminal activity.[168] Brown states that there is a need for a greater awareness from criminal justice professionals and law enforcement, echoing the conclusion reached by the N8 report.[169]

Irwin et al undertook an extensive study on money laundering by analysing the facility in laundering funds through virtual and online environments.[170] The article explores the level of risk that money laundering and terrorism financing pose and clarifies how suited virtual spheres are in facilitating such activities.[171] Interestingly, the team behind the study undertook a feasibility study and identified money laundering scenarios and the processes in which this can be achieved in a virtual environment.[172] Irwin et al conclude that using cryptocurrencies to launder money offers high levels of anonymity and potential low levels of detection. However, the larger the sum the more effort the launderer must take in creating layers and steps in protecting their autonomy.[173] However even though Irwin et al established that it is possible to launder money in virtual environments, Bitcoin is not the medium used in the study, and would actually facilitate such activities. Irwin later published another study looking specifically at the financing of violent Jihad with cryptocurrencies.[174] Although the authors acknowledge that it is difficult to find concrete evidence of Bitcoin or other cryptocurrencies by extremist groups, there is strong evidence suggesting their use.[175] The paper also highlights the need for reliable

[168] ibid. 327.
[169] ibid. 327.
[170] Irwin and others (n 109).
[171] ibid. 50.
[172] ibid. 72.
[173] ibid. 72.
[174] Angela SM Irwin and George Milad, 'The Use of Crypto-Currencies in Funding Violent Jihad' (2016) 19 Journal of Money Laundering Control 407.
[175] ibid. 407.

ways of circumventing the crucial anonymity element underpinning Bitcoin in order to be able to differentiate legitimate transactions from illicit ones.[176]

Money laundering through the use of cryptocurrencies is further analysed by Stokes who explored the feasibility of virtual money laundering in 2012 in the UK. Stokes clearly argues that Bitcoin poses a threat to money laundering but that this threat was minimal.[177] The article also points out the recurrent theme in regulating emerging technologies, that regulation should not stifle innovation.[178] Stokes argues that pre-emptive measures should be taken before the use of Bitcoin becomes widespread, with hindsight it is evident from recent literature, and the lack of steps taken in the UK, that this has not happened.[179] The most recent study on money laundering was undertaken by Wegberg et al where they tried cash-out strategies by using dark net money laundry services. They conclude that using Bitcoin to launder money is becoming increasingly easy, thanks to the cryptocurrency's anonymity, and that services and exchange networks are starting to emerge.[180] One of the central questions raised by the article, and that requires further research, and echoes Levi's work on identifying the various steps of card fraud, is the identification of the weakest links in a money laundering process in order to effectively inform law enforcement and regulators.[181] The article is also a good starting point in providing data for evidence-based interventions.[182]

[176] ibid. 407.
[177] Robert Stokes, 'Virtual Money Laundering: The Case of Bitcoin and the Linden Dollar' (2012) 21 Information & Communications Technology Law 221. 232.
[178] ibid. 232.
[179] ibid. 232.
[180] Rolf van Wegberg, Jan-Jaap Oerlemans and Oskar van Deventer, 'Bitcoin Money Laundering: Mixed Results? An Explorative Study on Money Laundering of Cybercrime Proceeds Using Bitcoin' 25 Journal of Financial Crime 419. 432.
[181] ibid. 433.
[182] ibid. 433.

Scholarship echoing the difficulties in integrating Bitcoin within current anti-money laundering frameworks can be found in the works of Stokes[183], Dostov et al[184], Vandezande[185], and Campbell-Verduyn[186]. The literature seems to assess current anti-money laundering regime, such as responses from the Financial Action Task Force (FATF), and the overall consensus is that there needs to be a balance between existent threats and opportunities enabled by cryptocurrencies, echoed in the wider literature of regulating of Bitcoin. Likewise, Campbell-Verduyn, acknowledges that anti-money laundering steps should start to shift towards the technology underpinning cryptocurrencies, the blockchain, rather than using the digital currency for illicit use.[187] A noticeable yet insightful evolution from the first article tackling the subject such as Stokes and Irwin's work, yet verified by more recent literature such as Wegberg's.

Despite these difficulties, the potential of innovation brought about by this new technology must not be ignored and has been recognised by the EU.[188] This is accentuated by a growing interest in its technological components by businesses, banks and researchers, with former head of the International Monetary Fund (IMF) Christine Lagarde stating for example, that central banks should consider issuing digital currency amidst a worry from regulators urging for more oversight onto this area.[189] This is reiterated by the Bank of England who have

[183] Robert Stokes, 'Anti-Money Laundering Regulation and Emerging Payment Technologies' (2013) 32 Banking & Financial Services Policy Report 1.
[184] Victor Dostov and Pavel Shust, 'Cryptocurrencies: An Unconventional Challenge to the AML/CFT Regulators?' (2014) 21 Journal of Financial Crime 249.
[185] Niels Vandezande, 'Virtual Currencies under EU Anti-Money Laundering Law' (2017) 33 Computer Law & Security Review 341.
[186] Malcolm Campbell-Verduyn, 'Bitcoin, Crypto-Coins, and Global Anti-Money Laundering Governance' (2018) 69 Crime, Law and Social Change 283.
[187] ibid. 283.
[188] Vandezande (n 185).
[189] BBC News, 'IMF's Lagarde Says Central Banks Could Issue Digital Money' *BBC News* (London, 14 November 2018) <https://www.bbc.co.uk/news/business-46203869> accessed 25 November 2018.

stated that they are looking into blockchain technology to facilitate securities transactions.[190] Furthermore, the idea of 'smart contracts' has gathered the most interest from blockchain technology developers, with IBM,[191] Freshfields,[192] and even a report from the UK Office of Science proclaiming the benefits of using blockchain technology beyond Bitcoin and money.[193]

3.4. Identifying Gaps

Similarly to previous case studies and the literature surrounding them, it is apparent that historical perspectives and insights are missing from these discourses. The state of both the literature and regulation concerning the ways to deal with the challenges facing Bitcoin and other emerging forms of money are in their early stages. However, in the last few years, the interest from the Bank of England, the FCA and other institutions has shown that there is a growing need to deal with these challenges. Moving beyond the economic impact of Bitcoin and new forms of money, a worrying theme that is starting to emerge is the interaction between cryptocurrencies and crime, and it is becoming increasingly clear that states and police forces are still unsure and unprepared to deal with the transition of criminal activities to this landscape once/ or if a cryptocurrency becomes systemic. Recent literature and institutional reports on the subject seem to be preparing for such an event, and conflicting solutions have been suggested. This uncertainty will be the core of Chapter 6, where it will aim to address taxonomic differences that have arisen from the myriad of actors trying to analyse and place cryptocurrencies and its derivatives within existing frameworks. Moreover, the historical perspectives drawn from the previous case studies will help determine the similarities or

[190] Ana Alexandre, 'Bank of England to Test Blockchain Features for New Payment System' *Cointelegraph* (London, 29 March 2018) <https://cointelegraph.com/news/bank-of-england-to-test-blockchain-features-for-new-payment-system> accessed 25 November 2018.
[191] Gopie (n 118).
[192] Tom Hingley, 'Blockchain and Contracts- a Smart New World' (*Freshfields*) <https://www.freshfields.com/en-gb/our-thinking/campaigns/digital/fintech/blockchain-and-smart-contracts/> accessed 25 November 2018.
[193] Walport (n 114).

differences that can be identified between case studies in dealing with formative challenges in relation to money, crime and regulation and help inform the *direction* in which the regulation of cryptoassets should take. The process, justification and methodology underpinning this comparative-historical approach to these case studies in relation to my objects of enquiry will be explored next.

CHAPTER 2: METHODS CHAPTER

The previous chapter has highlighted the overarching silence in the literature concerning the analysis and comparisons of different forms of money and corresponding criminal activity. This is primarily due to two key shortcomings, the first revolves around the absence of a methodological framework enabling an empirical comparison of these different case studies. As such, this chapter will focus on articulating the comparative-historical methodology used to examine and analyse the formative challenges of each case study across time. It is argued that looking at the past will provide new and distinctive perspectives on the various factors underlying a monetary instrument's rise to systemic status; strategies adopted against monetary crime; approaches to regulation to maintain trust and financial stability; being taken in the present to deal with the emergence of new forms of money. The second is caused by a lack of coherent conceptualisation of the objects of enquiry that functions across time. This will be the focus of the following chapter which will interrogate Bitcoin and its contemporary challenges through conceptual understandings of money to determine that misconducts associated with cryptocurrencies should fall under the remit of a reconceptualisation of the meaning of monetary crime and tackled with corresponding ideas of regulation.

This thesis will essentially use a case study approach to comparative-historical research in order to analyse three case studies to answer my research questions. From the onset, it must be stated that the comparative scope of this thesis is temporal rather than spatial. The within-case analyses, drawing from primary sources and mixed methods, will enable me to create a

narrative revealing the underlying elements driving the interactions between my objects of enquiry within each case study and their outcomes. The comparative element of the analysis will aim to highlight any inter-case similarities or differences between my case studies. This methodology is empirical and qualitative in nature, yet it will also incorporate some quantitative elements in order to complement the overall analysis. As the following sections will show, this interdisciplinary approach is the one best suited for this project and will draw from the methodologies and sources of various disciplines: from law, history, criminology, and the social sciences. This methodological approach is original in the breadth and scope of its analysis. Indeed, there has been little effort in corresponding literature to establish a framework and undertake a comparison of these key objects of enquiry with historical antecedents, especially with emerging forms of money such as Bitcoin.

This chapter will begin by analysing the interdisciplinary perspectives and justifications underpinning this project. I will then focus on legal methodologies and assess their scope and appropriateness for analysis, focusing in particular on legal history. Next, I will cement the need for historical approaches by drawing on key authors on how these principles can benefit legal and social research. I will then explore case study literature in order to clearly articulate the benefits and notions that can be learnt from such methods. The analysis of comparative methods and setting out the comparative-historical framework driving this thesis will be elaborated next. This chapter will close with a justification of the case studies chosen, a framework of analysis for the chapters to follow, a practical outline of the primary sources used for each case, and the limitations that this thesis may face.

1. Research Questions

The overarching question this thesis addresses is:

- What can the historical relationships between money, crime and regulation, tell us about emerging forms of money and how the challenges they pose in the present might be managed.

The Research Questions guiding the answer to this question are:

1- What are money and monetary crimes, and what value do these conceptualisations hold for this study?
2- What is the relationship between changing technologies of money and monetary crimes?
3- What is the relationship between changing technologies of money and new forms of regulation?
4- What is the relationship between monetary crimes and new forms of regulation?
5- What can they inform us about current challenges; and how might this understanding translate into recommendations for policy and practice?

2. The Limitations of Doctrinal Analysis for historical perspectives

2.1. The case for interdisciplinary methodologies

From the onset, this project is a piece of legal scholarship that will aim to draw from a multitude of disciplines. It is argued, however, that although it will engage with classical/ doctrinal legal analysis, this project cannot be confined to it. The scope of my research questions requires a focus on historical developments beyond purely legal ones; this is echoed by my objects of enquiry where an interest in technological change, monetary crimes and in how regulation is affected by them requires the adoption of a socio-legal approach, mixing doctrinal and legal analysis with social science and historical methods. These disciplines use

historical approaches to compare and analyse cases and events in the past since the social sciences and law are traditionally focused on the exploration of the present. Therefore, this thesis will take an interdisciplinary approach drawing from history, criminology, and law, in order to take advantage of their resources and methodologies. Indeed, the advantages of looking at the past to gain a purchase in the present has been widely used in Legal History, Criminology and History scholarship.

From this standpoint, I will first assess the strengths and merits of legal methodologies and their applicability to this thesis by looking at doctrinal, empirical, and legal history approaches, then I will widen the analysis to methods from other disciplines such as history, sociology, and criminology to ultimately cement the interdisciplinary, socio-legal, and historical approach taken.

2.2. Legal Methodologies

Doctrinal research can be defined as research which describes a body of law and how it is applied, in doing so, an analysis of the law on how it developed in terms of judicial reasoning and legislative enactment can be made.[1] Halliday suggests that it is easy to criticise this method and "to overlook the potential richness and diversity that may be involved."[2] Indeed, it has been said that 'pure' doctrinal analysis is inflexible and inward looking when used for the purpose of understanding the law and the operation of the legal system.[3] Texts written in cases or statutes would not "offer the guidance on the true shape and scale of the law in operation."[4]

[1] Ian Dobinson and Francis Johns, 'Qualitative Legal Research' in Mike McConville and Wing Hong Chui (eds), *Research Methods for Law* (1st edn, Edinburgh University Press 2007). 18.
[2] Simon Halliday and others, *An Introduction to the Study of Law* (1st edn, W, Green 2012). 6.
[3] Mike McConville and Wing Hong Chui (eds), *Research Methods for Law* (1st edn, Edinburgh University Press 2007). 4.
[4] Halliday and others (n 2). 12.

This project will adopt a doctrinal element to its analysis since I will be undoubtedly drawing from legal sources, from cases to statutes, to secondary literature engaging with those sources, and as such the ability to engage with them at a 'doctrinal' level is a crucial element in analysing, interpreting, and understanding provisions of the law relevant to my case studies and research questions.[5] Doctrinal and legal scholarship within my chosen case studies has been explored in the literature review and can be seen, for example, in the work of Fox who looked at the property rights in money[6], or in Rogers' chapter on the Early English Law of Bank Notes,[7] and more recently Raskin has published on the relationship between Bitcoin and Civil Procedures.[8] As these pieces of scholarship clearly show there is tremendous value, knowledge, and understanding to be gained in legal and doctrinal analysis. Yet for the purpose of this project, these approaches will be used in conjunction with other methods in order to complement and benefit from the merits of other approaches.

By inviting non-doctrinal approaches to legal scholarship it is argued that a new way of studying law in a broader social and political context can be achieved with the use of other methods taken from disciplines in the social sciences and humanities.[9] The merits of using non-doctrinal approaches includes the ability to broaden legal discourse by drawing from empirical evidence to answer the research questions.[10] Since doctrinal approaches tend to offer critique on the structure and coherence of the legal system, different approaches such as history can

[5] ibid. 8.
[6] David Fox, *Property Rights in Money* (1st edn, Oxford University Press 2008).
[7] James Steven Rogers, 'Early English Law of Bank Notes' in David Fox and Wolfgang Ernst (eds), *Money in the Western Legal Tradition: Middle Ages to Bretton Woods* (1st edn, Oxford Scholarship Online 2016).
[8] Max I Raskin, 'Realm of the Coin: Bitcoin and Civil Procedure' (2015) 20 Fordham Journal of Corporate & Financial Law 969.
[9] McConville and Chui (n 3). 5.
[10] ibid. 5.

offer different perspectives than those taken by legal scholars. This can be seen in recent White-Collar Crime scholarship, which will be reflected on later. Moreover, this interdisciplinary scholarship employs both qualitative and quantitative methods to obtain data about law and the legal system.[11] By analysing different types of data about the law, empirical research within legal scholarship aims to examine "the significance of the relationships between different constitutional bodies and the extent to which such relationships have influenced law making."[12]

By using qualitative and quantitative processes to gather information about the contextual components associated with the law[13], the potential for empirical, comparative and historical perspectives can be used to "render doctrinal analysis one element in a broader understanding of the law."[14] For example, when looking at the relationships influencing the regulation of monetary crimes; unravelling the social, political and economic influences underpinning such implementations will support the concept that law is bound by these forces rather than merely being a neutral actor.[15] Moreover, I will also be including quantitative data to complement my analysis, using data regarding forgeries drawn from governmental and Bank of England reports. As suggested above, it is important to note that empirical legal scholarship is complementary to doctrinal research and both methodologies can be used simultaneously to examine legal issues.[16] As such, incorporating empirical approaches to legal doctrinal scholarship is argued to produce more contextualised analysis of the law, institutions, and decision-making. Yet, the incorporation of an *historical* dimension to legal scholarship is often associated with legal history, which I will consider next.

[11] ibid. 6.
[12] Halliday and others (n 2). 35.
[13] ibid. 35.
[14] ibid. 13.
[15] ibid. 36.
[16] McConville and Chui (n 3). 6.

2.3. Legal History

Legal history has traditionally tracked the historical origins of legal rules and concepts, and the processes by which they came to have meaning today.[17] Arvind argues that the overall aim of legal history is "to study the nature and effect of the legal doctrine of ages past, this aim, coupled with an understanding of the context of legal change, gives legal history its distinctiveness."[18] Appropriately, most of the material in legal history is based on archival sources. Originality and new perspectives can be gleaned by supplementing traditional methods with these types of sources.[19] Baker's article[20] on the history of English law is a great way of contextualising legal history and highlighting the opportunities available for those undertaking such research, and the importance of studying the law through history to better understand the present. Indeed, Baker argues that the history of English Law is an "essential dimension in the social and intellectual history of this country."[21] Stebbings on the other hand, contrasts traditional doctrinal legal analysis against legal history, whereas doctrinal legal history "is valuable in that it promotes a more profound understanding of legal institutions and concepts and permits the informed adaption and reform of the modern law."[22]

However, legal history is divided into two aspects, internal and external.[23] Internal legal history is centred around the law itself and is concerned with the manner in which lawyers or jurists thought about the law at a specific time.[24] External legal history on the other hand is

[17] Halliday and others (n 2). 63.
[18] ibid. 67.
[19] ibid. 67.
[20] JH Baker, 'Why the History of English Law Has Not Been Finished' (2000) 59 Cambridge Law Journal 62.
[21] ibid. 63.
[22] Chantal Stebbings, 'Benefits and Barriers: The Making of Victorian Legal History' in Anthony Musson and Chantal Stebbings (eds), *Making Legal History: Approaches and Methodologies* (1st edn, Cambridge University Press 2012). 86.
[23] Halliday and others (n 2). 65.
[24] ibid. 65.

more interested in the social life of the law in a given period.[25] This aspect is premised on understanding the key contextual elements underpinning these legal developments.[26]

In this sense external legal history has much in common with empirical and sociological approaches.[27] In this instance, "legal history seeks to explain why legal rules are the way they are, or how they were, by studying the process of change."[28] Furthermore, as Wilson suggests, changes in law can be subject matter for linking past with present and that historical approaches and enquiry can be used as a mechanism for understanding societal status and societal evolution.[29] These also mirror the rationale for the study of legal history within legal scholarship and education.[30] Sewell stressed the importance of developing dialogue between the social sciences and history, in particular historians' understanding of the temporalities of social life within social theoretical debate.[31] Indeed, Sewell reflects on the relationships that makes sociological history.[32] He argues that many social processes require significant periods of time to work themselves out, and that investigating such processes can reveal a series of sequences found in different cases.[33] This is caused by varying conceptions of temporality, whereas Sewell argues that historical sociology should adopt an *eventful* notion of temporality, which sees "the course of history as determined by a succession of largely contingent events."[34]

[25] ibid. 65.
[26] Sarah Wilson, *The Origins of Modern Financial Crime: Historical Foundations and Current Problems in Britain* (1st edn, Routledge SOLON 2014). 10.
[27] Halliday and others (n 2). 65.
[28] ibid. 66.
[29] Wilson (n 26). 10.
[30] ibid. 10.
[31] ibid. 20.
[32] William H Sewell Jr, *Logics of History* (1st edn, University of Chicago Press 2005). 83.
[33] ibid. 83.
[34] ibid. 83.

In this context, events in their particular historical settings have causal consequences for the shaping and occurrence of later events.[35] Therefore, the study of legal history, and its underlying historical approaches, and "how these challenges are currently manifested in legal definition and wider criminal justice processes culture and operating practices"[36] is at the core of this project. This will now be elaborated in more detail. White-collar literature offers a clear prism showcasing the way recent authors such as Wilson and Taylor have used legal and historical methods in order to offset the strengths and weaknesses of both approaches.

2.4. Analysis between past and present: The example of White-Collar Crime Literature

Indeed, recent white-collar literature has shown the importance of dealing with the interplay between past and present. Wilson's study on the origin of modern financial crime shows that the way financial crime impacted upon Victorian society is essential in gaining a true appreciation of the fight against fraud in the 21st Century.[37] Taylor further cements the need for a historical perspective to draw attention to current responses in his most recent article.[38] He laments studies that assume white-collar crime is an innovation of the 20th Century as they provide a very limited view of how modern societies have tackled the problem of company fraud.[39] Thus, both Wilson and Taylor show that taking into account the ways in which Victorians dealt with Company scandals can help enlighten the ways the repercussions of the 2008 crisis were handled.[40]

[35] ibid. 100.
[36] Wilson (n 26). 20.
[37] ibid. 1.
[38] *See* James Taylor, 'White-Collar Crime and the Law in Nineteenth-Century Britain' (2018) 60 Business History 343.
[39] ibid. 343.
[40] ibid. 344.

Taylor's approach in exploring company scandals in the 19th Century is comprehensive and is premised on situating criminal trials within a wider context of external commentary generated by them.[41] Importantly Taylor frames these cases within trails of economic, cultural and political contexts, achieved through the referencing of newspaper coverage. Taylor thus fills a gap in what has been missing from older accounts of 19th century financial crime through an engagement with the criminal proceedings themselves, interwoven with the use of external sources.[42] Moreover, in analysing new forms of regulation, Wilson's categorisation of 'responses' including actual legal responses, such as statutes, trials, and steps taken by public and private institutions, while also analysing the societal reactions generated by the discovery of these crimes, provides a clear framework in which the trajectory of the shifting perceptions of financial crime can be highlighted between the past and the present.[43]

Indeed, distinguishing her framework from Taylor's, Wilson pays greater attention to the criminal attributes and consequences of these crimes, and the processes in which they arose within Britain's legal culture as criminal activity, and the nature of the experiences by which this was achieved.[44] Wilson aims to give "much emphasis to the idea of a societal journey towards legal and wider societal recognition of financial crime, and it focuses extensively on the processes entailed in this recognition."[45] It is acknowledged that there is considerable difference in time between the 18th and 19th Century and the 21st Century. However, Wilson convincingly marries historical and legal justifications of looking at the past by stating that analysing laws from the 19th Century can help construct a commentary on society and social change which helps to 'know ourselves' as well as we can, and to have as clear a view as

[41] Wilson (n 26). 68.
[42] ibid. 68.
[43] ibid. 72.
[44] ibid. 72.
[45] ibid. 70.

permittable of societal change as society faces an uncharted future.[46] This provides a clear echo further justifying the approaches taken in this project, as it offers a clear outline and example of the perspectives that can be gained when taking into account the benefits and principles of historical research. As Wilson states: "in marrying the interest of historians in utilising history for providing a commentary on the present and future, with legal historians' insistence on the importance of understanding law's own history, a convincing case can be made for looking at the past to provide a more comprehensive setting for formulating new 'rules for the future'."[47]

The historical approaches and modes of enquiry used for this project, and echoing the important historical perspectives adopted by the legal historians cited above, are grounded from historical tradition and are reflected in Tosh's work and his principles of historical awareness.[48] I will now delve into more detail on the use of historical perspectives in research and show that this is both supported by various interdisciplinary literatures and necessary for answering the research questions.

2.5. Historical Awareness

The historical perspective taken by Wilson and Taylor is heavily inspired by Tosh's work on the study of modern history, where he asserts that the study of history and historical awareness is anchored by three principles. These principles of historical enquiry suggest that much can be learned from the present from looking at the past.[49] This is premised on "understanding the present as a point on a trajectory still unfolding."[50] The first principle is

[46] ibid. 11.
[47] ibid. 11.
[48] John Tosh, *The Pursuit of History: Aims, Methods and New Directions in the Study of Modern History* (5th edn, Pearson Education Limited 2010).
[49] Wilson (n 26). 10.
[50] ibid. 10.

difference, acknowledging the gulf of time separating this age from the previous.[51] This difference is manifested physically through buildings left from previous eras, but more importantly there must be an acknowledgement of a difference of mentality between the past and the present.[52] This principle is important as it would be wrong to impose elements from this period on to earlier ones.[53] Thus, the historian aims to uncover the past in order to explain it and *context* is thus the second fundamental principle in gaining a historical awareness of the past.[54] Doing so enables an understanding of the social, economic, and legal setting of which the events being studied took place.[55] Tosh then draws on to the third fundamental principle of historical awareness which is the recognition of historical *process*. Tosh describes this as "the relationship between events over time which endows them with more significance than if they were viewed in isolation."[56]

All three principles are useful, but *process* and *difference* warrants closer attention, as identifying a process enables to explain the world by situating events onto a trajectory that is still unfolding which then gives a "purchase on the future and allows a measure of forward planning."[57] Tosh is also keen to distance himself from the study of history as an end to itself, stating that historians should aim to identify trends, analyse causes and their consequences.[58] This aim is further echoed in other disciplines, namely criminology and law, which recognises that understanding historical antecedences can provide new perspectives on the present. Indeed, looking at the past can bring awareness to "possible pitfalls that we might not otherwise know about, from helping us to know ourselves, where we have come from and how we have

[51] Tosh (n 48). 9.
[52] ibid. 9.
[53] ibid. 9.
[54] ibid. 10.
[55] ibid. 11.
[56] ibid. 11.
[57] ibid. 40.
[58] ibid. 47.

arrived at this point in time."[59] By doing so it shows how a society has responded and prepared to acknowledge the hazards presented by certain crimes and prepared to configure bold and determined responses, regardless of other social and economic factors.[60] It helps show *where* contemporary issues or problems have come from historically, and gaining this understanding and analysing its process can provide new perspectives on the present and/or the future. This is the gap that Wilson identifies in her book where even if scholarship has failed to engage with how financial crimes threatened economic and wider societal interests in the past, then it can also be said that historians making representations of the past have shown little interest in explaining how financial crimes continues to trouble society today, a dichotomy markedly present in the literature review of my case studies and in the scholarship dealing with the relationships between my objects of enquiry.[61]

Tosh argues that Historical *difference* "lies at the heart of the discipline's claim to be socially relevant."[62] Importantly, as Tosh is keen to remind us, the purpose of history is not to predict the future, or even to find a precedent for what is happening now, but to be instead alert to possibilities that we might not have known about.[63] The pursuit of History is an inventory of alternatives, which is richer if conducted without an eye to the immediate situation in the present.[64] Tosh points out that the first step in understanding the present through historical comparison *across* time, "which throws into relief what is transient and what is enduring about our present circumstances."[65] Indeed, the ability to distinguish between any patterns of similarity that have endured to the present, and what is transient, or different from what is

[59] Wilson (n 26). 231.
[60] ibid. 232.
[61] ibid. 54.
[62] Tosh (n 48). 33.
[63] ibid. 34.
[64] ibid. 34.
[65] ibid. 34.

happening, coupled with an understanding of the *process* and *context* in which these similarities and differences have arisen, is "vital to any realistic programme of social action in the present."[66] Therefore looking at past experiences is not meant to identify lessons to use in the present, its purpose is to attach significance to any perspectives gained from it since the study of the past can provide indispensable perspectives on the present, whether as an inventory of experience, as evidence of the transience of our time, or even as a reminder of the differences from our past.[67] So far, this chapter has looked at how legal scholarship can benefit from historical approaches by using white-collar crime and legal history as a lens for providing new perspectives on major outcomes of interest, it has also established the importance of rooting such interdisciplinary approaches to principles of historical awareness. The next paragraphs will begin to unravel the importance of different case studies, and in particular comparison that occurs across time.

2.6. The Merits of Historical Socio-Legal Research

Yeomans advocates the multiple functions historical research can fulfil within criminology in order to develop a framework for historical contextualization by looking at comparative approaches.[68] Comparative-historical research, understood as temporal comparisons rather than spatial, geographical comparisons, entails researchers to look at phenomena at different periods of time.[69] This echoes the approaches explored previously dealing with continuity and change and the interplay between past and present, mirroring Sewell's view on temporality and Tosh's notion of trajectory and societal evolution. More importantly, Yeomans remarks however that these periods of time do not need to precede or

[66] ibid. 35.
[67] ibid. 36.
[68] Henry Yeomans, 'Historical Context and the Criminological Imagination: Towards a Three Dimensional Criminology' [2018] Criminology and Criminal Justice 1. 17.
[69] ibid. 19.

succeed each other, with case studies being employed that are decades of centuries apart.[70] The use of different case studies and the advantages of doing so will be elaborated in the next section as they form the basis of my approach.

Yeomans states that comparing past and present can serve to deepen understandings of the periods analysed and they do not have to be causally related since it is inferred that similarities or differences observed in unrelated periods of time may indicate the presence of general conditions conductive to a social change.[71] Thus, the analysis of these case studies enables features of contemporary society to be characterised as general or particular.[72] In particular, comparing my objects of enquiry (money, monetary crime, and forms of regulation) through the lens of my case studies and across time can highlight the necessity of certain conditions in order to highlight the ways in which my objects of enquiry have changed in relation to each other. This further substantiates the interdisciplinary perspective required for the scope of this project and the use of a case study approach to comparative-historical research to answer my research questions. Further reflection and justification on case studies and comparative-historical research will be explored next.

3. Comparative-Historical Analysis: The importance of Case Studies

The previous section has reflected on the limitations of doctrinal analysis for this project, put forward the advantages of an interdisciplinary approach to answering the research questions, and emphasised the importance of the principles of historical awareness when

[70] ibid. 19.
[71] ibid. 20.
[72] ibid. 20.

engaging with historical perspectives and comparison. The use of case studies can offer unique perspectives into the processes, social change, and continuity, of particular phenomena, such as the factors behind monetary innovation, the regulation of a monetary system, and dealing with associated criminal activities.[73] This is further enriched by embedding other methodologies within a case study research framework as it leads to enhanced application and analysis.[74] This interdisciplinarity is particularly useful to understand complex series of cases such as the three used for this project.[75] As this section will clearly set out, the use of a case study approach within comparative-historical methods will form the basis of this project and will aim to compensate the limitations of some of the approaches explored in the section above. I will first look into detail at case study research, drawing from microhistory to further showcase the benefits of using historical case studies. Then I will delve into the theoretical underpinnings of comparative-historical analysis, before setting out the sampling criteria used for the case studies chosen for this project.

3.1. Case Study Research

Broadly defined a case study is the "empirical investigation of a specified or bounded phenomenon."[76] The aim of qualitative case studies (Small-N) is to produce a deep understanding of particular instances of phenomena[77] as oppose to large scale quantitative studies (Large-N), where datasets are used in order to generate grand generalisations.[78] A qualitative case study "may be useful for identifying and documenting patterns of ordinary

[73] Jane Elliott, Janet Holland and Rachel Thomson, 'Longitudinal and Panel Studies' in Pertti Alasuutari, Leonard Bickman and Julia Brannen (eds), *The SAGE Handbook of Social Research Methods* (1st edn, SAGE Publications Ltd 2008). 228.
[74] Vicki Clark and Nataliya Ivankova, 'How to Expand the Use of Mixed Methods Research?: Intersecting Mixed Methods with Other Approaches' in Vicki Clark and Nataliya Ivankova (eds), *Mixed Methods Research: A Guide to the Field* (1st edn, SAGE Publications Ltd 2016). 147.
[75] ibid. 147.
[76] Linda Mabry, 'Case Study in Social Research' in Pertti Alasuutari, Leonard Bickman and Julia Brannen (eds), *The SAGE Handbook of Social Research Methods* (1st edn, SAGE Publications Ltd 2008). 214.
[77] ibid. 214.
[78] ibid. 216.

events, the social and political structures that sustain them, and the underlying perceptions and values of participants."[79] When more than one instance is to be studied, which is the case in this project, the scope of enquiry and the effects of each case may provide a fuller picture of the larger phenomenon as different cases feature different aspects of interest.[80] Echoing the importance of principles of historical awareness mentioned previously, *context* and *process* are understood to be interdependent and reciprocal in case studies.[81]

Indeed, the temporal breadth of engagement with historical research, echoed in the choice of case studies, warrants further attention. There is a tendency to think that historic data becomes increasingly useful the closer it approaches the present,[82] which would correspond in this project with my case studies on Barclaycard and Bitcoin, however, such presumptions disregard the relevance of earlier periods in time.[83] As Yeomans has previously noted, a preoccupation with the immediate past may limit our capacity to recognise any causal or explanatory significance from earlier periods.[84] On this basis, it is argued that there is a lot to learn from a non-chronological engagement with historical research than is usually imagined.[85] This is one of the reasoning behind the choice of my first case study being in the 18th and 19th Century. The use of non-chronological case studies for this project, and the 'distant' past for Bank of England notes, is therefore aligned with this approach as it widens the scope of similarities and differences being analysed and enriches the findings from the in-depth analysis of each case, followed by cross-comparison with the others. This engagement with the non-immediate past, and of the systematic analysis of specific cases can be seen in the pursuit of

[79] ibid. 216.
[80] ibid. 217.
[81] ibid. 217.
[82] Henry Yeomans, David Churchill and Iain Channing, 'Rethinking the Dialogue of the Deaf: Assessing the Contribution of Historical Research to Criminology' [forthcoming] Howard Journal.
[83] ibid.
[84] ibid.
[85] ibid.

microhistory. As Magnússon exemplifies: "microhistorians hold a microscope and not a telescope in their hands."[86]

3.2. Lessons from microhistory

The themes and theories behind microhistory, which is generally defined as an intensive study of a case[87], adequately frames the approach taken by history in relation to case studies. There are a variety of theoretical views and different 'schools' of microhistory, however I am drawn to the one advanced by Szijdrtó. For him, microhistory can be defined as the intensive study of a relatively smaller object or event.[88] The second characteristic of microhistory is the objective to answer great historical questions by studying smaller objects.[89] Finally, the third main feature of microhistory is its stress on agency, where people who lived in the past are not puppets of forces of history, they are active individuals shaping history.[90] Thus, microhistory frames the exploration of the agency of individuals, institutions, and other actors, within larger political, social and economic structures.[91]

This historical perspective of studying a case follows the principles elaborated by Tosh and Sewell. A few parallels can be drawn with this thesis. I am looking at very particular events and periods with the aim of answering my research questions and establishing the relationships between my objects of enquiry. Differentiating myself from microhistory, however, is the extent and amount of 'micro' I am undertaking, traditionally, micro-historians would look at very specific and historical events and persons, and the pursuit of this form of analysis is

[86] Sigurður Gylfi Magnússon and István M Szijártó, *What Is Microhistory: Theory and Practice* (1st edn, Routledge 2013). 4.
[87] Thomas Robisheaux, 'Mircohistory Today: A Roundatable Discussion' (2017) 47 Journal of Medieval and Early Modern Studies 7. 10.
[88] ibid. 9.
[89] ibid. 9.
[90] ibid. 9.
[91] ibid. 13.

extremely rigorous and time consuming. I am taking a wider perspective in dealing with my cases and am analysing more than one series of events at different points in time. However, in a similar way to micro-historians, the overall aim is to identify the similarities and differences between each case study to link back to an overarching thesis. The next subsection will continue to justify the merits of using historical case studies by aligning this project to the principles of Qualitative Comparative Analysis, and its historical application through comparative-historical analysis.

3.3. Comparative-Historical Analysis: Theoretical Underpinnings

According to Calhoun, the most compelling reason to engage with historical sociology is the importance of revealing the patterns, processes, and trajectories that inform social change.[92] The theoretical underpinning of comparative-historical analysis has its roots in Qualitative Comparative Analysis (QCA) which is concerned with the matching and contrasting of cases to establish common causal relationships.[93] QCA aligns itself with Small-N and macro-comparative approaches by undertaking a systematic comparison of cases with the help of formal methodological tools.[94] Indeed, the number of cases is low, usually between 2 and 10, and the empirical comparison is undertaken at a macro level including complex social and cultural formations.[95] Similarly to empirical approaches in legal scholarship, QCA techniques take into account both qualitative and quantitative approaches, taking advantage of the strengths of each method.[96] The choice of cases to cross-compare is therefore crucial and the next section will go into greater depth about the sampling criteria used to choose the case

[92] Craig Calhoun, 'Afterword- Why Historical Sociology?' in Gerard Delanty and Engin F Isin (eds), *Handbook of Historical Sociology* (1st edn, SAGE Publications Ltd 2003). 383.
[93] Dirk Berg-Schlosser and others, 'Chapter 1 | Qualitative Comparative Analysis (QCA) as an Approach', *Configurational Comparative Methods: Qualitative Comparative Analysis (QCA) and Related Techniques* (1st edn, SAGE Publications Ltd 2009). 2.
[94] ibid. 6.
[95] ibid. 3-4.
[96] ibid. 13.

studies for this project. *Yet, it is worth noting that in this methodology, the cases chosen can represent both the important or typical cases but also the more paradoxical or contrary ones.*[97]

From this position it will be shown that Bank of England notes, Barclaycard, and Bitcoin fulfil these characteristics, and this is possible because the cases selected correspond to both a *common subject matter*, and *problem formulation*.[98] Indeed, in terms of subject matter, each of my case studies deal with a *formative moment* in that money's history in relation to its rise in adoption and acceptance leading to systemic status, the different strategies dealing with criminal activities, and exploring the ways in which to regulate its monetary system. The challenges, or *problem formulation*, faced by each of the case studies are also aligned across time since they correspond to the steps taken by key actors within that monetary system to improve trust and the acceptance of the form of money; the forms of regulation introduced to create legal certainty around its use; the steps taken to limit illicit activities arising from these technological changes; and creating an environment that encourages competition and monetary innovation. These past subsections have been advancing the merits and justification of using historical case studies. The next section will further articulate the criteria used for the choice of case studies, then the following section will deal with the comparative elements of the project.

[97] James Mahoney and Dietrich Rueschemeyer, '1. Comparative Historical Analysis' in James Mahoney and Dietrich Rueschemeyer (eds), *Comparative Historical Analysis in the Social Sciences* (1st edn, Cambridge University Press 2003). 13.
[98] ibid. 14.

4. Justification for Choice of Case Studies

4.1. Sampling Criteria

The approach taken is case orientated in the sense that they deal with a limited number of complex cases in a 'configurational' way. According to Berg-Schlosser et al.: "this means that each individual case is considered as a complex combination of properties, a specific whole that should not be lost or obscured in the course of the analysis."[99] As such, each case study explored in this thesis can be analysed independently and is underpinned by combinations of factors influencing specific outcomes that are observable and thus comparable across time. For this reason, the cases dealt with should be well known as it allows the research to be grounded in empirical data and a vast array of scholarship.[100] This was explored in the literature review, which showed the existing, yet fragmented, degree of knowledge present within my case studies and demonstrated that each case studies already had extensive literature on *different* aspects of the form of money being analysed.[101] It is also important to note that the amount of scholarship on these different periods exemplifies 'our fascination for the new' as Edgerton would label it.[102] As a preamble to the purposive sampling criteria below, it is important to highlight that the timeframes and case studies chosen also correspond to a peak of social anxiety in relation to the technological innovation of money and the monetary crimes arising as a result.

To choose the most appropriate case studies for this thesis, it is worth drawing attention to the plurality of forms of money, aka monetary instruments, that have historically circulated.

[99] Berg-Schlosser and others (n 93). 6.
[100] ibid. 6.
[101] Matthew Lange, *Comparative-Historical Methods* (1st edn, SAGE Publications Ltd 2013). 152.
[102] David Edgerton, *The Shock of the Old: Technology and Global History since 1900* (1st edn, Profile Books 2006).

When considering technological changes of money, a few candidates present themselves. These include coins, banknotes, cheques, plastic cards, and cryptocurrencies. This 'chronology' echoes how historical textbooks on the history of money layout their chapters.[103] For both intellectual and practical reasons, it is necessary to limit the number of case studies used in this project. I will be using purposive sampling to whittle down these possible cases so that those sampled are relevant to the research questions and can maximise the perspectives gained from the changes occurring within my three objects of enquiry.[104] The cases selected therefore need to reflect a variety of criteria which places the research questions at the forefront of sampling considerations.[105] Thus, each case is selected because of the relevancy to those criteria, which I will set out next.[106]

The *first* criterion is the need for the case study to be appropriate for historical comparison, in other words, the type of money being explored must not be too remote to current iterations to make its study inapplicable. The *second* criterion concerns accessibility to data, indeed, if a case lacks sufficient primary and secondary data, then the resulting analysis will be weak.[107] This links in to our *third* criterion which is the need for each type of money chosen to have corresponding criminal activity directly applicable to that form of money. Finally, the *fourth* criterion relies on how the characteristics of each case match with each other in order to pair cases appropriately and correspond to the same subject matter and problem formulation.

[103] Glyn Davies, *A History of Money: From Ancient Times to the Present Day* (3rd edn, University of Wales Press 2002).
[104] Alan Bryman, *Social Research Methods* (5th edn, Oxford University Press 2016). 408.
[105] ibid. 420.
[106] ibid. 408.
[107] Lange (n 101). 151.

A further dimension to the choice of case studies is the geographical scope of the thesis being confined to England and Wales. This is done for a multitude of reasons. First, geographical parameters track distinctive legal cultures, between England and Wales, Scotland and Northern Ireland. It is worth mentioning that much legal research does confine itself to a legal system in the UK due to the differences which can arise. Second, accessibility to primary sources and data is more readily accessible in England, and thirdly, even though generously funded by the ESRC, the time and financial constraints for this project also limits the geographical dimension of the study. In the following sections, I will elaborate the choice of these case studies in relation to these criteria, then I will look at any shortcomings and limitations that may arise.

4.2. Case Study 1: Bank of England Notes

A first and logical step in exploring money would be to look at the original mode of payment in England: the various types of coins that circulated with the corresponding methods of tracking credit such as tally sticks. The history of coin and the monarchy's prerogative over its issue and punishment has been covered in academic literature well and there is a wide historiography dealing with understanding these types of money as an end in itself.[108] Correspondingly, the shortage of bullion and precious metal posed an increasing problem on the British economy in the fading years of the 17th Century; the criminal offence of clipping coins, and therefore lowering its intrinsic value, continuously eroded the trust placed in the use of precious metals as a valid monetary form.[109] Government took action, and it is said that Sir Isaac Newton's campaign against the clipping of coins in the beginning of the 18th Century,

[108] See Christine Desan, *Making Money: Coin, Currency, and the Coming of Capitalism* (1st edn, Oxford Scholarship Online 2015) <http://www.oxfordscholarship.com.libproxy.york.ac.uk/view/10.1093/acprof:oso/9780198709572.001.0001/acprof-9780198709572> accessed 30 October 2017.
[109] ibid.

coupled with his administrative skills as Master of the Royal Mint, led to his knighthood.[110] His unrelenting and unforgiving approach towards those who committed this particular monetary crime was aimed at cementing the importance of money and coins for the country's economy.[111]

Although the study of coins meets the criteria of my case studies, especially in regards to availability of primary and secondary data, and regarding criminal activity arising as a result, a key consideration for not selecting coins as a case study is that there is already a substantial literature dealing precisely with coins and their offences historically which has been alluded to in more detail in the literature review.[112] Moreover, the history of coins spans over far too long a timeframe to make its study feasible. Similarly, the coining, clipping and forging offences of coins occurred over a great breadth of time, making selecting this type of money as case study problematic and difficult.

Thankfully, this was not an isolated incident. Money creation gradually shifted from the state to the banks when they obtained the prerogative to issue money, with the Bank of England obtaining its charter in 1694. The resulting issue and use of paper as a mean of payment constituted a drastic change in the technology of money and served as the cornerstone of modern banking and the issue of paper money to the present. Indeed, as opposed to coins, the movement to paper made money more symbolic, less tangible, and more reliant on trust than its previous iteration. Mockford in his thesis on the perceptions of banknotes and forgery during the Restriction Period, clearly suggests that in the later stages of the 19th Century the

[110] ibid.
[111] ibid.
[112] See Christine Desan, 'Coin Reconsidered: The Political Alchemy of Commodity Money' (2010) 11 Theoretical Inquiries in Law 361.

notion of a banknote being considered as an instrument of personal credit gave way to an understanding of paper money as an object of institutional credit, "whereby an acceptance of the instrument centred to a greater degree around an extension of trust to the issuing authority."[113]

This shift of the issue of money from the monarchy to the financial sector, penned as going 'from blood to water' by Desan,[114] is well documented and serves as the starting point in the trajectory in which governments and the financial sector have dealt with criminal activities arising because of the introduction of a new form of money. The introduction of banknotes in England and Wales is the logical choice for the first case study but further operationalisation is needed to meet the set of criteria set out above. As such, I have chosen to focus most of my analysis on the paper notes issued by the Bank of England, or Bank of England Notes, since this gives me access to a wealth of data, both primary and secondary, and the interaction between the Bank of England and forgery is also well established, as the literature review has showed. I will delve more into the type of data drawn from the Bank of England later, but it is worth noting that I have also drawn on material held at Lloyds' archives to deal with the matter of 'country' banknotes and to compare and correlate any perspectives gained from the Bank of England.

Therefore, my first case study will focus on the forgeries of Bank of England Notes from the inception of the Bank in 1694 to 1844 when it received its monopolising charter by Parliament, paving the step for Bank of England notes to move away from *private* money to

[113] Jack Mockford, '"They Are Exactly as Banknotes Are": Perceptions and Technologies of Bank Note Forgery During the Bank Restriction Period, 1797-1821' (PhD Thesis, Hertfordshire 2014). 46.
[114] Desan (n 108).

legal tender and considered *sovereign* money. Although I acknowledge the continuing significance, importance and use of banknotes into the present, especially with the recent introductions by the Bank of England of new 'inimitable' polymer notes, I will not extend my analysis of banknotes and forgery into the 20th Century. Indeed, it is argued that extending the analysis of banknote forgeries beyond the timeframe proposed would have a detrimental impact on the historical factors dealing with my objects of enquiry as forgeries had moved on to cheques and other emerging forms of money. Importantly, a major part of my analysis will concern the Restriction Period, between 1797 and 1821, as there is a wealth of data available for this historical event and is directly related to my research questions.

4.3. Case Study 2: Credit Cards and the Rise of Barclaycard

Following from banknotes, the next chronological step would have been to look at the proliferation of cheques, since they became increasingly popular towards the late 19th Century in relation to both an increase in use and in term of forgeries. This was mainly due to a dip in prosecutions of Bank of England notes forgeries after the 1850s. I have chosen to bypass this development for various reasons. Literature on the criminal activities associated with both banknotes and credit cards have successfully covered the forgeries of cheques.[115] Furthermore, my exploration of the Barclays' archives, which we will deal in more detail later, has shown a strong correlation between cheques and plastic cards in incidences of fraud, circumventing the need for a separate case study for cheques.

Recent reports on the digitisation of money[116] have argued that electronic modes of payments through plastic cards have had more of an impact in furthering the evolution and

[115] Michael Levi, Paul Bissel and Tony Richardson, *The Prevention of Cheque and Credit Card Fraud* (Home Office Crime Prevention Unit Paper 26 1991).
[116] HM Treasury, 'Cash and Digital Payments in the New Economy: Call for Evidence' (HM Treasury 2018).

innovation of money. Credit cards, in conjunction with the rapid development of the technology of banking and credit, contributed to qualitatively change money's modes of action while paving the way for it becoming immaterial.[117] Indeed, in a call for papers in March 2018 by HM Treasury on cash and digital payments in the new economy, show that plastic card usage has overwhelmingly replaced banknotes and coins, with a rise of 85% since 2006 in the number of transactions being made digitally, with credit and debit cards being the main vehicle in which these exchanges are made.[118]

The migration of money to digital spheres was sparked by the proliferation of electronic modes of payment, mainly through plastic cards and the role of the banks in rendering money accessible online. It is worth clarifying the terminology regarding the use of 'plastic' cards as it is acknowledged that there is a difference between different types of cards. As Watts has highlighted 'plastic' is used to label the variety of forms of cards available, in the guise of 'credit', 'debit' and 'charge' cards, which dominate the current domestic financial world.[119] It is worth noting that 'credit' and 'debit' cards, albeit encompassed in a piece of plastic, are significantly different from one another. Therefore, in this thesis 'plastic cards' is used as an umbrella term and will be understood to encompass the variety of types of cards available, while still acknowledging the variations and differences that still abide.

Moreover, the spread and use of 'plastic' cards is underpinned by a trust in the finance and banking sector to ensure that the use, and all the other elements surrounding the use of various cards, are as safe as possible. The underlying trust behind a plastic card, similarly to

[117] Catherine Eagleton and Jonathan Williams, *Money A History* (2nd edn, The British Museum Press 2007). 257.
[118] HM Treasury (n 116). 2.2.
[119] WA Watts, 'Policing Plastic' (1999) 7 Journal of Financial Crime 67. 67.

the trust placed in banknotes, enables individuals to purchase products. Indeed, when dealing with credit cards in particular, the intangible credit and money used to purchase the goods is nothing more than the bank and retailer's trust on the purchaser that they will honour the agreement to repay.[120] Card fraud can be seen to undermine the many trust elements that underpin the finance industry, which would then considerably reduce the 'purchasing power' of individuals and have potentially disastrous effects on the economy.

The second case study is therefore focused on electronic modes of payment, with a particular focus on credit cards. This is because the introduction of credit instruments was a monetary innovation introduced in the UK in the 1960s that revolutionised the way that customers could pay for goods and services. It clearly represents the next formative moment in England's monetary history with the introduction of the first credit card in the UK: Barclaycard, in 1966. It is for this reason that Barclaycard and material held at Barclays' archives was chosen. This case study meets the four criteria mentioned above as it shows a good evolution of monetary technology and pairs well with banknotes and cryptocurrencies. Furthermore, innovation on cards is still visible today, with different schemes being trialled across the globe, from fingerprint scanners within cards, to cards made of metal.

The focus on Barclays as a primary repository of data for initial analysis is due to both accessibility and relevancy issues as they were the first to introduce credit cards in England and continue to be at the forefront of plastic card innovation. Likewise, the majority of their actions regarding the introduction of new cards has been 'in house' allowing me to get a good

[120] Ann Pettifor, 'Money as a Social Construct and Public Good' (*LSE Blogs*, 21 January 2014) <http://blogs.lse.ac.uk/politicsandpolicy/money-as-a-social-construct-and-public-good/> accessed 12 November 2018.

understanding of the processes involved in the innovation of Barclaycard and to track how the Bank responded to fraud arising as a result. It is crucial to point out as well, that for this case study, primary material from their archives after 1989 is sealed for confidentiality purposes. I am confident that the second criterion is still met, as shown by the plethora of secondary studies analysed in the literature review dealing with this topic. Additionally, I will be using other forms of data to triangulate and synergise my findings, this will be elaborated later.

4.4. Case Study 3: The Phenomenology of Bitcoin

Although the use of Bitcoin can be seen as an atypical case when it concerns the exploration of money and criminal activities arising as a result, it is argued that nonconforming cases within a comparative-historical methodology can "shed a special light on the understanding of specific processes."[121] Understanding these processes and gaining a historical perspective on that trajectory of change, is a key step in dealing with the challenges faced by emerging forms of money today. As such, cryptocurrencies, or crypto-assets,[122] are the subject of my third and final case study. I want to focus on Bitcoin precisely because it is the only cryptocurrency that currently meets all four of my criteria and will enable me to glean a more general understanding of this new form of money. Bitcoin also clearly encompasses the challenges currently being faced by government and other actors in dealing with emerging forms of money and thus is appropriate for historical comparison with the formative challenges of the other two case studies.

Therefore, even if in the future Bitcoin itself is no longer the dominant form of cryptocurrency, or a stablecoin has reached systemic status, the importance of studying the forms of crimes arising from it, and new forms of regulation introduced as a result, compared,

[121] Berg-Schlosser and others (n 93). 7.
[122] House of Commons Treasury Committee, 'Crypto-Assets' (House of Commons 2018) HC 910.

and contextualised within a historical perspective, can only contribute positively to our knowledge of innovations in money and trajectory of monetary evolution. Indeed, the narratives highlighting Bitcoin's development are likely to have a lasting effect, and there is the possibility that important information can be gleaned from the narratives of its demise if this happens. The likelihood that the next 'iteration' of money will be inspired and based on elements of Bitcoin and current cryptocurrencies further accentuates the need to study it. Furthermore, there is also a historical justification for using Bitcoin as a case study, since the same properties, characterisations, and common law questions that occurred throughout previous iterations of money still arise and need to be addressed in relation to Bitcoin and its myriad of adaptations. With this in mind, I would argue that the study of Bitcoin and its underlying components satisfy the first criterion.

Moreover, accessibility to resources, both primary and secondary, when it concerns Bitcoin is a key consideration for meeting the second criterion, and the technological composition of Bitcoin grants me access to the information required for comparative-historical analysis, as primary material is publicly available through the blockchain. Furthering this point, the choice of Bitcoin as a subject of analysis is key in understanding the components behind cryptocurrencies in general as it is widely recognised to be the blueprint of how they operate and is thus currently *representative* of the cryptocurrency landscape at time of writing. As the literature review has established, there has been a rising academic interest in Bitcoin and cryptocurrencies. Within the scope of this project, it is worth noting that the literature has been focusing on four main elements of Bitcoin: the first consists of looking at cryptocurrencies as money or a type of digital 'currency'. The second deals with the technology underpinning it and that records each transaction: the blockchain. The third element studied in the literature deals with the exchange centres that can both store these currencies but also exchange them for

legal tender. More recently, the fourth theme has focused on branching out from Bitcoin and looking at alternatives such as CBDC's and stablecoins.

To fulfil my third criterion, it is argued that many harmful and illicit activities can be seen to originate from the interplay between these elements, precisely because Bitcoin's technological features can facilitate crime. The previous two case studies focused on distinct technological innovations in money and specific crimes arising as a result which were maintained by the rule of law, principles of accountancy, the criminal justice system, and central banks. It is these institutions that foster trust in the economy, protect individual interests while also facilitating tax collection and law enforcement.[123] Looking at banknotes and credit cards therefore offers the opportunity to analyse the effects of technological changes in money that are imposed upon the population by virtue of being enshrined and protected by a sovereign state. This is usually described as monetary sovereignty whereas the state has a role in securing money within its borders. Bitcoin is the opposite. Today they may well serve the same functions as money, and facilitate transactions, but they do so by virtue of being a voluntary social construct with their value based and agreed upon by the community of users who willingly exchange them for other goods or services. Interestingly, Bitcoin is a social construct based on the mistrust of monetary sovereignty, central banks, and government, and trusting instead on the technology that underpins the digital currency. The slow erosion of control over the issuance of money from the state highlights the contemporary challenges and limitations faced by policymakers to deal with the categorisation and classification of activities that can be

[123] Jonathan Levin, 'Governments Will Struggle to Put Bitcoin under Lock and Key' *TheConversation* (London, 27 November 2013) <https://theconversation.com/governments-will-struggle-to-put-bitcoin-under-lock-and-key-20731> accessed 11 November 2018.

harmful to those new types of money, potentially snowballing into money that is legal tender, and ultimately to the wider financial system.

I would argue that Bitcoin appropriately pairs and conforms with the other case studies, and that the evolution of technological changes in money can provide unique perspectives in the present for analysis. To meet the fourth criterion, it is important to establish Bitcoin's relevancy to today. Indeed, understanding Bitcoin in relation to previous iterations of money is sorely needed. This is accentuated by a growing interest in its technological components with former head of the International Monetary Fund (IMF) Christine Lagarde stating for example, that central banks should consider issuing digital currency amidst a worry from regulators urging for more oversight onto this area.[124] This is reiterated by the Bank of England who have stated that they are looking into blockchain technology to facilitate securities transactions.[125] Even Venezuela tried to introduce a government backed cryptocurrency called *petro*, secured by the country's large oil reserves.[126] Furthermore, the idea of 'smart contracts' has gathered the most interest from blockchain technology developers, with IBM,[127] Freshfields,[128] and even a report from the UK Office of Science proclaiming the benefits of

[124] BBC News, 'IMF's Lagarde Says Central Banks Could Issue Digital Money' *BBC News* (London, 14 November 2018) <https://www.bbc.co.uk/news/business-46203869> accessed 25 November 2018.
[125] Ana Alexandre, 'Bank of England to Test Blockchain Features for New Payment System' *Cointelegraph* (London, 29 March 2018) <https://cointelegraph.com/news/bank-of-england-to-test-blockchain-features-for-new-payment-system> accessed 25 November 2018.
[126] Brian Ellsworth, 'Special Report: In Venezuela, New Cryptocurrency Is Nowhere to Be Found' *Reuters* (New York, 30 August 2018) <https://www.reuters.com/article/us-cryptocurrency-venezuela-specialrepor/special-report-in-venezuela-new-cryptocurrency-is-nowhere-to-be-found-idUSKCN1LF15U> accessed 25 November 2018.
[127] Nigel Gopie, 'What Are Smart Contracts on Blockchain?' (*IBM*, 2 July 2018) <https://www.ibm.com/blogs/blockchain/2018/07/what-are-smart-contracts-on-blockchain/> accessed 25 November 2018.
[128] Tom Hingley, 'Blockchain and Contracts- a Smart New World' (*Freshfields*) <https://www.freshfields.com/en-gb/our-thinking/campaigns/digital/fintech/blockchain-and-smart-contracts/> accessed 25 November 2018.

using blockchain technology beyond Bitcoin and money.[129] Bitcoin itself has also seen a wave of different iterations and adaptations inspired from it, producing a wave of new forms of cryptocurrencies building or copying the technological elements of Bitcoin, with the most in use being Ethereum, Bitcoin Cash, Litecoin, Dodgecoin, or Ripple.

By meeting the four criteria set out above the rise and phenomenology of Bitcoin makes it the ideal candidate for the third case study. Because of the future opportunities that it offers and how current it is, I feel justified in departing from the previous format of the case studies, whereas they focus on a particular technological change in money and its impact on a specific monetary crime, in order to look at Bitcoin and its underlying elements more broadly. This will enable a better comparison between previous monetary crimes and those arising out of Bitcoin and will add flexibility in analysing data and cases arising from the illicit activities of cryptocurrencies. Therefore, the comparative-historical approach taken to analyse and draw similarities and differences from these three case studies will help bridge the gap between previous literature and disciplines and incorporate them into current monetary, regulatory, criminological, and historical scholarship.

4.5. Sampling Limitations

I briefly want to tackle any issues and limitations arising from the sampled cases. Indeed, case selection has the potential to introduce bias into the analysis in different ways, including sampling error and selection bias.[130] Due to the selective nature of my cases, I believe I have made a strong case for the case studies chosen, and thus avoid any sampling error at this stage. Selection bias can pose problems for comparative-historical researchers if they wish to

[129] Mark Walport, 'Distributed Ledger Technology: Beyond Block Chain' (Government Office for Science 2016) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/492972/gs-16-1-distributed-ledger-technology.pdf> accessed 25 November 2018.
[130] Lange (n 101). 172.

pursue generalisations, indeed, choosing the subjects of analysis in this way would be an issue if my aim was to seek explanations that were universally applicable.[131] This is not the case here as the findings and conclusions of my research are strictly applicable to my case studies, yet, it is likely that my conclusions will have a wider relevance.[132]

Secondly, my analysis is heavily reliant on the using a variety of data sources but am particularly dependent on historical and secondary literature. I will dedicate a section later in this chapter looking at the various sources of my primary data in more detail and how I've dealt with some of the limitations they entail. I acknowledge that scrutiny can be aimed against the data used: from limitations due to archival material, to the use of larger quantitative datasets, or the geographical scope of the sources used, and the difficulties of accessing resources. However, different strategies can and will be used to help reduce such problems. The first involves the use of primary sources, which is the cornerstone of this project, and the second will the varying degree of analysis amongst cases.[133] For this thesis, the careful choice and number of my sample cases allows me to undertake in-depth analyses of each of my three cases studies; further justifying the use of specific timeframes to make the project manageable within the given time constraints.

5. Comparative-Historical Analysis: Identifying Comparative Elements

Now that we have established the choice of the case studies used for this thesis and justified the historical perspective taken, the comparative approach needs to be expanded. From

[131] ibid. 160.
[132] ibid. 160.
[133] ibid. 150.

the onset, the comparative element of this project must be differentiated once again from 'traditional' comparative studies which relate to more spatial comparative aims where disciplines such as law, legal history and history compare national approaches to events or issues.[134] As mentioned previously, the geographical scope of this project is limited to England. Similarly, this approach, although historical, is not a longitudinal comparative study of one case over time.[135] Indeed, a variety of case studies are more useful than one for scrutinising the relationships subsisting between monetary innovation and crime. The focus of this thesis is on technological changes of money, and this is to be understood on a wider scale of monetary innovation, rather than focusing on changes and events surrounding one type of money. An example of such an approach would be to look at forgery concerning banknotes from the 18th Century to the present. This would deal with the Restriction Period, but also Operation Bernhard during the Second World War and explore current anti-forgery attempts regarding the new polymer notes being introduced recently. However, this approach would offer less purchase on current trends such as the decline of cash, the rise of plastic and the emergence of cryptocurrencies and would instead be of more interest to historians and technological papers. It is for this reason that this project aligns itself with the methodological framework used in comparative-historical analysis since it is able to systematically compare historical case studies in order to identify their similarities and differences, whilst acknowledging the context, processes, and combination of elements present in each individual case study. This approach will be elaborated next.

[134] Kjell Å Modéer, 'Abandoning the Nationalist Framework: Comparative Legal History' in Heikki Pihlajamäki, Markus D Dubber and Mark Godfrey (eds), *The Oxford Handbook of European Legal History* (1st edn, Oxford University Press 2018).
[135] Elliott, Holland and Thomson (n 73).

Comparative-historical analysis is determined by three key features: firstly, it is concerned with the explanation and the identification of the key elements that produce major outcomes of interest.[136] Secondly, it looks at temporal processes, and the analysis of historical sequences and the unfolding of these processes over time.[137] Thirdly, it uses systematic and contextualised comparison to a small number of cases.[138] *As such, the crux of this methodology is to engage in the comparison of similar and contrasting cases which enables to see how factors have different or similar outcomes across heterogenous contexts.*[139] Furthermore, this is made possible because the comparative elements (factors and outcomes) for the analysis must be informed by *common conceptual understandings* that are present in each of the case studies.[140]

It is worth noting that the comparative elements correspond to my objects of enquiry: money, monetary crime, and forms of regulation, and in particular the various factors underlying their interactions. The focus of Chapter 3 will be to establish the *common conceptual understandings* between the objects of enquiry and my case studies, by engaging with theories of money, crime, and regulation, in order to reposition a definition of monetary crime that includes the harmful activities that are directly related to a form of money. Crucially for this thesis, by drawing on both the theories underpinning each object of enquiry and how they function within each of the case studies chosen, the factors underlying them can be analysed inductively to determine the key elements and outcomes to be considered for cross-comparison.[141] Likewise, similar factors situated in different contexts can lead to different

[136] Mahoney and Rueschemeyer (n 97). 11.
[137] ibid. 12.
[138] ibid. 13.
[139] ibid. 13.
[140] Berg-Schlosser and others (n 93). 6.
[141] ibid. 6.

outcomes.[142] As such, by looking at the various factors underpinning the complex processes and narratives that constitute each case, we can establish which factors are framed in terms of necessity and sufficiency in relation to a desired or observable outcome.[143]

In endeavouring to bridge the gap between current and past challenges, the desired or observable outcomes stemming from the interactions between the factors underlying each object of enquiry can be measured by adopting Felix Irresberger's trade-off of attributes.[144] Irresberger used these attributes to describe the characteristics of the various cryptocurrencies circulating at the time and how the prioritisation of one of these attributes over the others by the issuer renders the current government classifications problematic. As such, the various observable outcomes from a case study's formative challenge can be *characterised and represented* by the following four attributes: acceptance and adoption, scalability and accessibility, security, and decentralisation.[145] *Acceptance and adoption* corresponds to the factors leading to a new monetary technology becoming socially accepted by a wider community of users, market agents, and for payment transactions. *Scalability and accessibility* relate to the number of transactions, and/or users operating the type of money within a monetary space. Both of these attributes are crucial in determining whether an instrument has reached systemic status. *Security* corresponds to the trust placed on the system to deal with any harmful activities, or on the resistance to crime from the form of money itself. Finally, *decentralisation* relates to the number of actors guarding, maintaining, and validating the system in place, the possible barriers to entry, and the level of control in decision-making held

[142] ibid. 7.
[143] ibid. 10.
[144] Felix Irresberger and Konstantinos Stylianou, '"Research With Impact" Seminar- Mapping the Cryptoasset Universe' (2019).
[145] ibid. Forthcoming publications on cryptocurrencies from both authors will incorporate this framework. This conference highlighted initial observations on the various cryptocurrencies available and where they sat within these attributes.

by the issuer(s) on every aspect of the monetary system. The classification of these attributes also echoes recent government publications aiming to classify the rising number of cryptoassets circulating within the financial system.[146] More importantly, this framework is applicable more generally, as it is argued that when applied to other forms of money, past and present, it can provide a good overview of the state of the iteration of money at any point in time.

Yet scepticism surrounding comparative-historical analysis still focuses on the small number of comparable cases in relation to the multiple factors that are assumed to be relevant.[147] But Mahoney has extensively argued that looking at the various processes and factors underpinning each case study can greatly strengthen whether an observed association reflects causation across time and case studies.[148] Indeed, this approach can single out which elements exert an effect on an observable outcome.[149] Ultimately this allows me to identify the similarities and difference arising across time, and the different combination of factors leading to the outcomes measured and represented by my attributes. Moving beyond the theoretical merits of this comparative-historical approach, Lange provides concrete methodological rules and a rigorous framework maximising the use and strengths of both comparative and historical methods when applied to case studies. I will now describe and apply this method of analysis to my project.

[146] See HM Treasury, FCA, and Bank of England, 'Cryptoassets Taskforce: Final Report' (HM Treasury 2018); UK Jurisdiction Taskforce, 'Legal Statement on Cryptoassets and Smart Contracts' (2019).
[147] Dietrich Rueschemeyer, '9. Can One or a Few Cases Yield Theoritical Gains?' in James Mahoney and Dietrich Rueschemeyer (eds), *Comparative Historical Analysis in the Social Sciences* (1st edn, Cambridge University Press 2003). 305.
[148] James Mahoney, 'Comparative-Historical Methodology' (2004) 30 Annual Review of Sociology 81. 90.
[149] ibid. 89.

6. Comparative-Historical Analysis: Practical Methodological Framework

6.1. Within-Case Methods

Lange states that comparative-historical methods combine multiple methods in order to attempt to offer a combination of idiographic and nomothetic insight.[150] This is achieved by separating the analysis into two distinct elements, as works within this tradition employ both 'within-case' methods and 'comparative' methods.[151] This enables research of within-case methods to offer a better understanding into the particular elements of individual case studies, whereas the comparative methods offer more generalisable perspectives by drawing on the conclusions and findings from each.[152] Thus, it is argued that the particular methodological combination of comparative-historical analysis makes possible both types of understanding.[153]

The first element is further divided into two types: 'primary' within-case methods and 'secondary' within-case methods. Primary within-case methods correspond to the approach taken to gather the evidence that will be used to explore the research questions.[154] This initial element focuses on the methodologies that gather data and is a crucial steppingstone for the rest of analysis. Since the first step of within-case methods focuses on gathering data necessary for the analysis by using historical methodologies, this will generally involve qualitative and/or mixed methods at first.[155] Thus, the historical methods my thesis will be drawing from, correspond primarily to qualitative work on existing material relating to my case studies and

[150] Lange (n 101). 176.
[151] ibid. 3.
[152] ibid. 176.
[153] ibid. 176.
[154] ibid. 176.
[155] Mabry (n 76). 218.

original archival data gathered from primary sources. In this thesis mixed-methods is understood both as way to collect data[156] but also as being embedded within an existing methodology.[157] Indeed, by incorporating the use of concurrent qualitative and quantitative mixed methods design, a more complete dataset can be created and therefore produce more complete and validated conclusions.[158] All these methodological approaches enable me to gather the widest array of data and evidence in order to enrich my findings and feed my inter-case comparisons. Once this has been achieved, the second element of within-case methods is used.

Secondary within-case methods are different from primary within-case methods because they assess and combine the evidence provided by the primary methods.[159] The three secondary within-case methods commonly used for comparative-historical analysis are 'causal narrative', 'process tracing', and 'pattern matching'.[160] *Causal narrative* aims to establish the different elements present in a particular case study, namely to explain the context and processes leading to the combination of these factors. *Process tracing* explores the processes leading to the observable outcome and identifies which factors can be understood as necessary or sufficient in that process.[161] Finally, *pattern-matching*, is useful in testing theories,[162] empirically identifying similarities within each of my case studies in relation to the elements

[156] Mario Luis Small, 'How to Conduct a Mixed Methods Study: Recent Trends in a Rapidly Growing Literature' (2011) 37 Annual Review of Sociology 57. 60.
[157] Clark and Ivankova (n 74). 143.
[158] Vicki Clark and Nataliya Ivankova, 'How to Use Mixed Methods Research?: Understanding the Basic Mixed Methods Designs' in Vicki Clark and Nataliya Ivankova (eds), *Mixed Methods Research: A Guide to the Field* (1st edn, SAGE Publications Ltd 2016). 120.
[159] Lange (n 101). 177.
[160] ibid. 177.
[161] ibid. 177.
[162] ibid. 15.

present in each case, the makeup of factors, and on reflecting more generally on the desired or observable outcome.[163]

6.2. Comparative Methods

Moving forward to the comparative element of this approach, the comparative methods used can also be distinguished into different elements. The first general type of comparison is 'large-N' comparison, mainly used in statistical comparison, and is not used in this project.[164] The other, and relevant to this thesis, is 'small-N' comparison, encompassing the three case studies sampled at the beginning of this chapter. It is worth noting that the comparative element will focus on the various factors and processes that underpin them. Indeed, the within-case analysis would have inductively highlighted all the factors contributing to the outcomes measured in this project and the comparative aspect of the analysis will therefore serve to highlight and give new and distinct perspectives on *how* the outcomes observed can help us better understanding current challenges.

Small-N comparison methods are further divided into 'narrative' comparison which compares the complex interactions between the factors underpinning the case studies in order to highlight the key elements present across these relationships.[165] This approach is further divided into two sub types: 'process orientated' and 'mechanistic' comparison.[166] This thesis will draw on both of these approaches as they deal with different aspects of my research questions as I will elaborate in the next paragraphs.

[163] ibid. 177.
[164] See Mahoney (n 148). For a detailed outline and explanation of the methods and principles underpinning this approach within Large-N comparisons.
[165] Lange (n 101). 120.
[166] ibid. 99.

Firstly, process-oriented comparison contrasts the processes and combination of factors between each case study and compares them to explore similarities and differences between outcomes.[167] This enables the comparison to highlight whether the factors diverge or not between case studies.[168] Secondly, mechanistic comparison explicitly focuses on the mechanisms linking specific factors to outcomes.[169] Most commonly, mechanistic comparison explores whether the absence or presence of a factor can explain similar or different outcomes.[170] This works well with the process tracing and pattern-matching from within-case analysis. In the context of this thesis, it will prove useful in identifying whether *similar factors* across heterodox contexts can cause the presence or absence of key elements in one case but not another.[171] This last point highlights one of the major strengths of this methodology: the ability to gain in-depth understanding from the study of a specific case, and to compare them to others within a rigorous analytical framework.

Pulling the threads together, this methodology will allow me to map out the contextual factors, both historical and contemporary, influencing the relationships and processes underpinning technological changes in money, monetary crime, and forms of regulation. The perspectives gained both from each case study individually and their comparison with each other will aim to offer a 'purchase on the future'. By adopting this methodology, I also aim to achieve the 'double engagement' of comparative-historical analysis. By doing so, this thesis aims to invite a thorough discussion on methods and terminology in legal research drawing on the strengths and resources of other disciplines, whilst hopefully providing new and distinctive perspectives on monetary innovation and the challenges we face with cryptocurrencies. I will

[167] ibid. 99.
[168] ibid. 99.
[169] ibid. 101.
[170] ibid. 101.
[171] ibid. 101.

now delve into more detail on the type, choice, and reasoning behind the primary sources used for this thesis which will form the benchmark for the data and information used in this project's comparative-historical analysis.

7. Archival Research

7.1. Sampling and Framework for Archival Data

As I have established previously, a critical step in answering the research questions is gathering the data relevant to each of my case studies. Albeit time consuming, a meticulous exploration of archives and primary sources serves as the first pillar of this thesis. The importance of such an approach is echoed in most historical disciplines, but Knepper and Scicluna, reflecting on the importance of primary research and resources originating from the period of interest in historical criminology, is worth highlighting.[172] By using archival methods, the article addresses the issues related to the use of history in criminology which correspond to "gaining perspective from unfamiliar places, finding the beginning of historical processes, making discoveries from details and recovering the significance of forgotten practices."[173]

Indeed, by looking at decisions, or responses, to specific issues, and by examining these choices in the context in which they were made, it is possible to gain a better understanding into the practice and process being analysed.[174] Knepper et al also states that using historical evidence, and an inductive approach in researching and engaging with these sources, can lead to better criminological understanding and theorizing as "good historical research improved

[172] Paul Knepper and Sandra Scicluna, 'Historical Criminology and the Imprisonment of Women in 19th-Century Malta' (2010) 14 Theoritical Criminology 407. 407.
[173] ibid. 408.
[174] ibid. 409-410.

the angle of vision, provides insight into the processes, recovers forgotten practices and yields significant discoveries."[175]

The process of choosing what materials and archives to access is also demarcated by accessibility and practical limitations. I will first outline a framework that will guide my archival enquiry and the sampling of those sources, followed by a structure in which to analyse these materials within my chapters. These frameworks will be crucial in gathering the necessary data needed for the analysis of the relationships in which monetary crimes, technological changes in money and regulation took place, while helping highlight the ways England shifted from drastically different types of money.

Guiding the exploration and sampling of the sources across my case studies are a set of criteria that are inspired by my research questions and will help me efficiently explore any archives or datasets. I will first aim to determine the reasons why the institutions I am researching took steps to change money. Then I will identify when they became aware of crimes arising as a result. Next, I will establish whether they anticipated such criminal activities. Moreover, I will determine what their original perceptions of the crime was. Finally, I will focus on the steps taken to tackle these monetary crimes and analyse the consequences of these steps. These criteria will enable me to narrow down the wide range of material available in archives while attending to issues of reliability and validity of the documents being explored.[176] I have produced a table below linking my research questions to the criteria mentioned above.

[175] ibid. 419.
[176] Lindsay Prior, *Using Documents in Social Research* (1st edn, SAGE Publications Ltd 2003). 163.

Research Questions	Archival Sampling Criteria
1- What are money and monetary crimes, and how can they be conceptualized for the purposes of this study?	
2- What is the relationship between changing technologies of money and monetary crimes?	* Identify when institutions became aware of crimes arising as a result.
3- What is the relationship between changing technologies of money and new forms of regulation?	* Determine the reasons why the institutions I am researching took steps to change money
4- What is the relationship between monetary crimes and new forms of regulation?	* Determine what their original perceptions of the crime was?
5- What can be learned from case studies about the relationship and interplay between changing technologies of money, monetary crimes and regulation; what can they inform us about current challenges; and how might this understanding translate into recommendations for policy and practice?	* Establish whether they anticipated such criminal activities. * What steps were taken to tackle these monetary crimes and analyse the consequences of these steps?

Table 1: Linking Research Questions to Sampling Criteria

When dealing with documents in particular, Lindsay Prior offers insightful parameters to limit the possible shortcomings of using archival data. He places an emphasis on understanding the context and the purpose of how a document is used rather than treating it as an inert repository of facts.[177] Indeed, a key concern is that archived data has lost its context, and it is therefore recommended to both 'read against and along the grain' of what the creators of the documents intended, both as an approach to explore the archives and gain a better understanding into the nature and value of the evidence gathered.[178] This also allows the researcher to cast a wider net in finding evidence that might be useful for future analysis. I will now break down the range of primary sources used in this project.

[177] Lindsay Prior, 'Documents and Action' in Pertti Alasuutari, Leonard Bickman and Julia Brannen (eds), *The SAGE Handbook of Social Research Methods* (1st edn, SAGE Publications Ltd 2008). 481.
[178] Till Geiger, Niamh Moore and Mike Savage, 'The Archive in Question' (2010) NCRM/016 ESRC NAtional Centre for Research Methods Review Paper 1. 27.

7.2. Overview of Primary Sources

For my first case study, I aim to draw primarily from both physical and digital archival repositories. The main source of data will be from the archives held at the Bank of England. From the onset it must be stated that their online catalogue is extremely hard to navigate and does not provide adequate information on the files they hold. This issue meant that I had to spend longer cross-referencing or 'going against the grain' of certain documents in order to gather sufficient data. My research focused on two references: the M5 files, and the F files. M5 holds the secretary's department papers, incorporating most of the minutes books of the committees at the Bank of England. Of particular interest are the minutes books for the improvement of banknotes (M5/245 to M5/261), books relating to legal cases dealing with some of the forgeries (M5/551 to M5/556), and the memoranda books setting out some reports and offering quantitative information on the costs and numbers of forgery prosecutions. (M5/591 to M5/601). Likewise, the Freshfields files (F) deal with most of the forgery correspondence and internal and external forgeries of the bank. They offer both accounts of particular individuals but also legal advice regarding the relationship between various statutes and the issuance of notes.

This is complemented by the analysis of cases of forgery across this period, focusing on the Old Bailey Online, which will enable to offer both qualitative and quantitative information regarding the prosecution of forgery during this time. Accessibility to online material is not an issue per say, however, researching vast amounts of data through keyword searching can be problematic. For example, the use of 21st Century terminology, makes key-word searching complex.[179] This is illustrated in Mockford's thesis where he dedicates a

[179] Stebbings (n 22). 79.

section of his methodology chapter on tackling key-word searching within the Old Bailey Online Database.[180] Original offences for forgery were often categorised as coining, and finding cases directly relating to banknotes could also prove difficult as their terminology evolved, and different types of 'imitations' were produced, from 'flash' notes to 'imitations' notes. Similarly, forgery was often associated with the offence of uttering forged banknotes, and thus this can widen the scope of the material found by the online search tool. This also serves as way to showcase that archivists are not impartial, and that some documents are catalogued and stored according to a form of bias and the archive's procedures. Furthermore, data gathered in relation to new forms of regulation will be informed by the study of legislation, Committee reports, and Hansard debates, which are available digitally.

A few difficulties may arise when looking at regulatory sources. Indeed, another aspect of Victorian legislation that may create barriers for modern legal historians is the legislator's imaginative responses to the Industrial Revolution, overhauling old and technical medieval legislation.[181] This creativity can be seen in Frame's work on the legal responses to country banks notes, where government took a constitutive and imaginative approach to them.[182] This renders the understanding and wording of certain statutes hard to decipher. Furthermore, because Victorian legislation was also driven by a rise in individualism, as advocated by Atiyah in his exploration of freedom of contract,[183] a very large proportion of Victorian legislation is interventionist which gives rise to quasi-laws which are difficult to access and creates a further barrier in the study of Victorian Law.[184]

[180] Mockford (n 113).
[181] Stebbings (n 22). 81.
[182] Ian Frame, '"Country Rag Merchants" and "Octopus Tentacles": An Analysis of Law's Contribution to the Creation of Money in England and Wales, 1790-1844' (PhD Thesis, Kent 2012).
[183] PS Atiyah, *The Rise and Fall of Freedom of Contract* (1st edn, Oxford University Press 1985).
[184] Stebbings (n 22). 84.

Likewise, many of the material cited previously is collected from and concerns London. As Ireland points out,[185] much of crime history literature is already skewed towards London, hence I have chosen to also look, to a limited extent, to archives of banks and forged notes situated outside the capital. Taking this approach enables a good overall representation and add weight to my findings being made applicable for the whole country. This is achieved by looking at the archival collections from Lloyds Bank since they hold the most amount of material from previous banks, who were then taken over by Lloyds, during that period, compared to other banks. Obviously because they contain the archives of selective banks that existed for a limited amount of time, the integrity of their archives can be put in question, but they do provide important perspectives on country banknotes and the ways that other private institutions dealt with the issue of forgery, thus allowing internal comparisons with the Bank of England within the case study.

7.3. Practical Considerations

A final practical note on engaging with sources from this timeframe, is the readability of certain sources, which is often impossible due to damage to paper, the fading of the ink, or illegible handwriting. An example is shown below. (From Lloyds- A/53/66/b/23- Letters)

[185] Richards W Ireland, 'Why Everything We Know about Criminal Justice History Is Wrong' (2015) 1 Law, Crime and History 131.

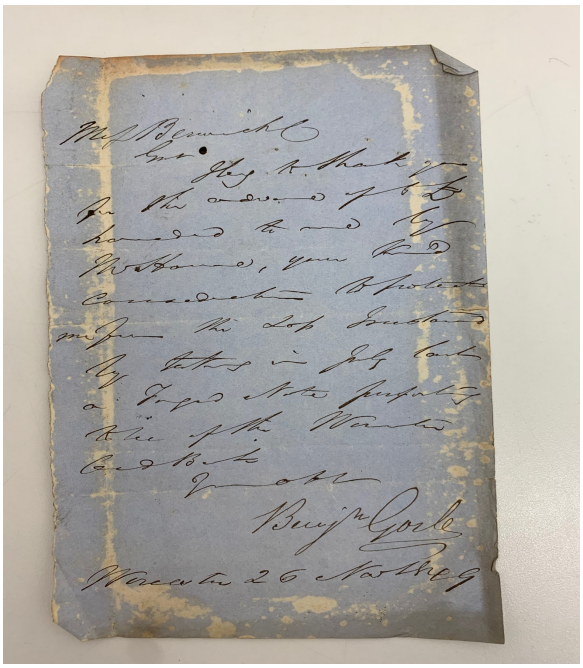

Figure 1: Practical Example of Archival Limitation

For my second case study, Barclays' archives will provide the range of primary material necessary to construct an image of the evolution of plastic cards in England and Wales. Furthermore, Barclays also has a digital repository of advertisements and material dealing with their engagement with the public in regard to the adoption of credit cards and how to deal with card fraud, which has not been engaged with extensively. Of note are the Barclaycard circulars (Ref: 29/1579) that were given to every branch updating them on the operation of the different plastic cards updated and introduced, warning them against fraudulent activity, and setting floor limits for the encashment and withdrawal of money by customers. These circulars in particular offer a real insight into the relationships between plastic card, cheques and fraud – a relationship I initially thought did not exist to the extent revealed by looking at the archives. As a result, this collection is a wealth of both qualitative and quantitative data as it ranges from 1966 to 1988. Future years are closed for researchers for business confidentiality reasons.

Other documents are also worth mentioning, I have looked at files covering the early years of Project Decimal, aiming at introducing the first debit card in the UK (Ref: 0416-0038 & 0036-0106). Moreover, the archivists have provided me with a sample of their Oral History project, dealing in particular with an individual named Alan Duncan, who was instrumental in bringing Barclaycard from America to the UK in 1966. This source has been vetted and approved for my use by the Barclays archivists. Furthermore, press cuttings on card fraud, staff training manuals are also analysed.

Finally, for my third case study, a wider net of sources will be used in order to answer the research questions. There is a temporal and cultural challenge in gathering data for this case study due to its contemporary nature. Some community driven websites provide a wide range of data mined directly from the blockchain such as *Coinbase*, *Coindesk, Blockchain,* and *Coindance*, providing unbiased data and reports that can be analysed. Likewise, the newly established *CryptoUK* is an organisation that has created a variety of partnerships advocating the possibility of self-regulation in order to combat the rise of criminal activities associated with cryptocurrencies. Furthermore, I will engage with recent forthcoming governmental reports and police consultations dealing with Bitcoin.[186] Moreover, I will engage with case law directly relating to Bitcoin both in civil and criminal proceedings (if any). Furthermore, I will internally compare each element underpinning Bitcoin within UK's regulatory framework, focusing on Bitcoin as whole, exchange centres, blockchain, transactions and wallets, to gain appropriate understandings.

[186] See for example HM Treasury, FCA, and Bank of England (n 146); House of Commons Treasury Committee (n 122); HMRC, *Revenue and Customs Brief 9 (2014): Bitcoin and Other Cryptocurrencies* (Policy Paper 2014) <https://www.gov.uk/government/publications/revenue-and-customs-brief-9-2014-bitcoin-and-other-cryptocurrencies> accessed 15 August 2018.

8. Ethical Considerations

As per the University guidelines, there were no ethical issues arising from this thesis. Both the archives and the archivists have already taken great steps in restricting access to personal or sensitive information. Furthermore, there has been no human participants in my research. Data and material that I have used is in the public domain or gathered with authorisation from archives.

CHAPTER 3: NEW PERSPECTIVES OF MONEY, MONETARY CRIME, AND REGULATION

The methodology has clearly articulated that the comparison of cases must correspond to a common subject matter and problem formulation. Moreover, the crux of this methodology is to engage in the comparison of similar and contrasting cases which enables to see how factors have different or similar observable or desired outcomes across heterogenous contexts. The previous chapter has extensively justified the choice of case studies and found that they represent the key formative challenges within the UK's monetary history from the 19th Century to the present. *Yet the robustness of this approach relies on the analysis being informed by theories based on conceptual understandings that are present in each of the case studies.* As such, this conceptual chapter will aim to bridge the theoretical analytical tools of comparative-historical analysis explored in the previous chapter, to this project's case studies and timeframes. Indeed, by defining the objects of enquiry: 'money', 'monetary crime' and 'regulation' in relation to current understandings, it is argued that there is sufficient consistency in how each are understood across time to facilitate comparison. Sharing the same conceptual understanding across time therefore anchors and makes possible the comparative-historical analysis. This is important because the various factors underpinning the objects of enquiry are systematically explored within my case studies to identify the key elements, or the similarities and differences empirically observable, offering new perspectives in how the law should respond to challenges faced by monetary instruments.

To achieve this, the overarching objective of this chapter will be to search for a common conceptual meaning of monetary crime which is underpinned by conceptual and theoretical understandings of money and regulation. Indeed, an extensive exploration of money and moneyness is very closely connected with the search for the proposed definition of monetary crime. Likewise, regulation and crime are closely interconnected as criminal law responses can be seen as a form of regulation. Analysing the meaning of money will be focused on identifying its core characteristics present in Bitcoin, and how this is essential to bring monetary crime within the sphere of harmful and injurious activities arising out of emerging technologies of money. Similarly, gaining a purchase on a definition of monetary crime can help identify the similarities and difference in how regulation responds to technological change alongside this project's understandings of money and monetary crime.

Taking this approach is important because it is becoming necessary to bring Bitcoin and other types of cryptocurrencies within the realms of criminal behaviours and the State's regulatory frameworks. It is suggested that bringing cryptocurrencies onto a level regulatory playing field with other established forms of money would not only provide legal clarity but also catalyse private innovation and competition to create a more resilient, effective payments system that could exist beyond a crypto ecosystem.[1] This holistic approach to the regulation of money therefore opens up an avenue through which the responses to the social problems of my case studies and the agents involved in these responses are explored in a more systematic way. This follows the trend of authors such as Wilson and Taylor to not focus solely on legal response in their analysis. *Adopting a clear taxonomy on the meaning of monetary crime will*

[1] Mark Carney, 'The Future of Money' (Bank of England Speeches 2018). 14.

create a level of certainty of the scope of behaviours and activities that might undermine financial stability and the different regulatory approaches required to tackle these, that is currently not present.

The majority of the chapter is dedicated to the first section regarding a conceptual understanding of money and deals with two key themes surrounding theoretical understandings of money in relation to this thesis. The first theme covers the relationship between money's economic functions ('medium of exchange', 'store of value' and 'unit of account') and the legal regimes enabling a money asset to function and circulate. It will be argued that current characterisations of monetary instruments based on a functionalist understanding of money is too narrow in scope to encompass new iterations of money and fails to take into account the key social relations that underpin money. Following from this, the second theme draws on sociological definitions of money and aims to bridge the gap between money's functions, which determines whether a monetary instrument is protected in law, and the generally accepted view that money is a social construct underpinned by trust. In particular, this second theme draws primarily on the leading theory of money today: Ingham's interpretation of the credit theory of money and engages with the role of trust to reframe the need for an authority in maintaining money.

The second section will draw on understandings of 'crime' to develop a wider meaning of monetary crime that is not confined to breaches of criminal law. I will build upon the previous section's analysis of the role of trust in order to show that monetary crime is able to encompass the various activities that undermine and abuse trust in the monetary systems being analysed.

The third section will look to widen the scope of regulation to encapsulate other actors and forms of legal intervention that are not confined to public law obligations. Taking this broad conception of regulation allows me to look beyond traditional regulatory agencies and take into account the strategies from banks, financial institutions, and wider regulatory bodies. This section will argue that a conceptual understanding of regulation should look at actions and actors outside of state intervention in order to gain a better understanding of the regulatory strategies concerning each monetary instrument and the varied forms of social control enacted on both money and monetary crime. A clear understanding of monetary crime will be seen as a further 'tool' available for state responses to identify different types of misconducts involving money.

1. Different interpretations of money

Although this section engages broadly on the debate of what constitutes money, its goal is not to offer a resolution but to explore the core characteristics of money present across the different forms of monetary instruments being explored in my case studies. The history of money and its analysis is lengthy and complex and attests to the importance of unravelling understandings of money from different disciplines. Yet, there remains a deep and stark divide between scholarly thought on the subject of money and it is believed that the question of what constitutes money will never be fully settled.[2] Bjerg argues that the rapid emergence of cryptocurrencies has begun to challenge traditional understandings of money across disciplines.[3] The law ultimately plays an essential role in supporting specific monetary instruments as money by affording differing levels of attention and priority to the various forms

[2] Niels Vandezande, *Virtual Currencies: A Legal Framework* (1st edn, Intersentia 2018). 162.
[3] Ole Bjerg, 'How Is Bitcoin Money?' (2016) 33 Theory, Culture & Society 53.

of money circulating within the financial system. This results in conflicting policy approaches based on the understanding of money being used. For example, legal definitions of money draw primarily from chartalist and economic theories of money with rare engagement with more sociological perspectives.[4] This is particularly true when looking at cryptocurrencies and the ongoing debate about whether it is money or not. As such exploring the various meanings of money from legal, economic, and sociological perspectives will help us identify the core characteristics of money in relation to Bitcoin in order to begin to identify with sufficient clarity any socially injurious activity that will inform an emerging definition of monetary crime. This also addresses a gap in the literature corresponding to a lack of interdisciplinary engagement between various theories of money as discussions *between* these theories and disciplines rarely overlap.

The aim of this section is the first step in providing a definitional framework for an understanding of monetary crime based upon the elements of money applicable to my case studies, which will then delimit the sphere of influence required by regulation to address any activities undermining monetary systems. A first step in doing this is to elaborate on the importance of adopting an interdisciplinary understanding of money based on legal and sociological perspectives of money. The next three subsections will focus on addressing the first theme in defining an understanding of money. The first subsection explores legal understandings of money in relation to money's functions and will argue that current legal characterisations of money are too narrow in scope to engage with: the variety of monetary instruments being analysed in this project; the rapidly emerging forms of money; and the social interactions and importance of trust which are critical to the acceptance and functioning of

[4] L Randall Wray, 'From the State Theory of Money to Modern Money' in David Fox and Wolfgang Ernst (eds), *Money in the Western Legal Tradition: Middle Ages to Bretton Woods* (1st edn, Oxford Scholarship Online 2016). 1.

money. The second subsection will explore how different assets, both corporeal and non-corporeal, become recognised as money based on the fulfilment of economic functions. It will first draw out the importance of these functions in determining whether certain assets are protected in law, and how in turn, the law facilitates the operation of these functions. The final subsection will clearly define and apply these functions towards my case studies, beginning to illustrate how a functionalist perspective of money might prove problematic in categorising Bitcoin as such and thus limit its comparability to my other objects of enquiry.

1.1. The limitation of functionalist understandings of money

1.1.1. The relationships between assets, monetary functions, and law

David Fox highlights how the law is primarily concerned with money in relation to its economic functions: a 'medium of exchange', a 'unit of account', and a 'store of economic value'. The relationship between these economic functions and the various assets that are treated as money is important in understanding the different legal aspects of how money functions.[5] Indeed, there is a direct relationship between the legal classification of a monetary instrument and the scope of legal regimes applicable to it. This ties in towards the legal uncertainty and lack of a clear definition currently surrounding cryptocurrencies. This can be seen in the UK's government ongoing pursuit to clarify their position towards categorising cryptocurrencies. They labelled Bitcoin and other cryptocurrencies as 'cryptoassets'. There is a need to briefly elaborate on the use of these two terminologies.

This taxonomy is a development from an earlier report in which the term 'cryptocurrencies' was recontextualised into 'cryptoassets' by the Bank of England, FCA, and

[5] David Fox, *Property Rights in Money* (1st edn, Oxford University Press 2008). 1.19.

HM Treasury.[6] This moved Bitcoin and other cryptocurrencies away from connotations of money and 'currency' and instead into 'assets', aligning it *in name* to proprietary regimes.[7] For example, banknotes serve as both money and as chose in possession. In relation to cryptocurrencies, the reasoning behind this lexical decision may be that they do not adequately fulfil money's functions.[8] The same taskforce, and subsequent FCA publications,[9] further categorised Bitcoin as 'exchange tokens', one of three types of 'cryptoassets' described by the report alongside 'security tokens', and 'utility tokens'.[10] Later clarification from the FCA arrived at the conclusion that cryptocurrencies should ultimately fall within the 'unregulated token' category of cryptoassets.[11] Clearly placing cryptocurrencies outside of the scope of current regulatory frameworks, and conventional understandings of money. This is obviously problematic and as I will explore later in this section, whether Bitcoin and other cryptocurrencies fulfil these functions is still subject to debate. Furthermore, Irresberger has argued that newer iterations of cryptocurrencies are blurring the lines from the taskforce's categories, leading to more taxonomic confusion and legal uncertainty.[12] As such, this thesis will continue to adopt the term 'cryptocurrencies' interchangeably as it better aligns with its intended representation as money. The next paragraphs will highlight the importance behind an asset, both corporeal and non-corporeal, fulfilling money's functions and the impact this has on its relationship with *existing* legal regimes.

[6] HM Treasury, FCA, and Bank of England, 'Cryptoassets Taskforce: Final Report' (HM Treasury 2018).
[7] ibid. 2.13.
[8] ibid. 2.13.
[9] FCA, 'Guidance on Cryptoassets - Consultation Paper' (FCA 2019) CP19/3.
[10] HM Treasury, FCA, and Bank of England (n 6). 2.11.
[11] FCA, 'Guidance on Cryptoassets - Feedback and Final Guidance to CP 19/3' (FCA 2019) PS19/22. Para 2.25.
[12] Felix Irresberger and Konstantinos Stylianou, '"Research With Impact" Seminar- Mapping the Cryptoasset Universe' (2019).

This analysis is necessary as the legal regimes which the state applies to assets which are adopted as money plays a part in promoting the efficiency of their economic functions.[13] Fox's analysis of property rights in money is an ideal starting point to untangle the fragmented conceptual framework of the various forms of monetary instruments currently being circulated and accepted as payment in England and Wales. Indeed, his work explores how proprietary regimes in particular makes money more efficient in performing their distinctive functions as a 'medium of exchange' and 'unit of account'.[14] Early academic work on the relationship between money and law by Olivecrona[15] and Eder argued that the law has mainly been concerned with money's functions.[16] This has important consequences for the legal nature of money since the boundaries in which both corporeal and incorporeal assets can be defined as money is heavily reliant on these functions.[17] This makes it difficult to define by purely legal criteria the differences between the kinds of assets which are money and those who are not.[18] As Minsky noted: Anyone can create money; the problem is in getting accepted.[19] This also goes to the heart of the challenges posed by cryptocurrencies since they are currently unregulated but are facing a rising call from policymakers and other institutional actors for them to be included under the same regulatory framework as traditional money.[20] Although regulation would be contrary to the fundamental belief of many who adopted Bitcoin's early ethos, it is argued that as interest and acceptability of cryptocurrencies have skyrocketed in recent years, and in particular during 2021. Legal certainty and clearly defining the boundaries in which Bitcoin and other cryptocurrencies belong to is needed now more than ever in order to protect consumers, build trust onto the monetary system, and minimise any impact

[13] Fox (n 5). 2.05.
[14] ibid. 2.03.
[15] Karl Olivecrona, *The Problem of the Monetary Unit* (1953).
[16] Phanor J Eder, 'Legal Theories of Money' (1934) 20 Cornell Law Review 52. 55.
[17] Fox (n 5). 1.23.
[18] ibid. 1.23.
[19] Stephanie Bell, 'The Role of the State and the Hierarchy of Money' (2001) 25 Cambridge Journal of Economics 149. 150.
[20] Vandezande (n 2).

fluctuations of Bitcoin might have on the financial system. In the following paragraphs, definitions of these three functions will be examined. Then, a preliminary functionalist definition of money will be proposed.

First, the 'medium of exchange' is the asset which is defined in law as being able to be paid for the purchase of commodities or the discharge of obligations.[21] Secondly, money serves as a 'unit of account', expressing the value of all obligations or commodities which may be the subject of economic exchange.[22] The common practice is for the 'medium of exchange' to be denominated in the same monetary 'unit of account', or currency unit, commonly used in the system in which the asset circulates.[23] Finally, money is a 'store of value' whereas the asset which stores the value is generally the same as that which serves as a 'medium of exchange'[24] and this is normally represented as the monetary instrument embodying the 'unit of account' for the purposes of exchange and storage.[25]

Economic theories have considered that the 'unit of account' is the most important characteristic of money, since monetary policy lies in the Central Banks' control of the 'unit of account'.[26] This is further accentuated by the distinction of whether money is a 'medium of exchange' OR/AND a means of payment. I am inclined to follow Fox's conception that this attribute is really an aspect of its function as a 'medium of exchange' in transactions or in discharging obligations.[27] I would argue that means of payment and 'medium of exchange' can be understood to fulfil the same function, the transfer of the monetary instrument and as such

[21] Fox (n 5). 1.20.
[22] ibid. 1.25.
[23] ibid. 1.26.
[24] ibid. 1.28.
[25] Serge Lanskoy, 'The Legal Nature of Electronic Money' (2000) 3 Revista de Análisis del BCB 97. 100.
[26] Carney (n 1). 2.
[27] Fox (n 5). 1.24.

can be used interchangeably. This is also reflected in my case studies where the 'medium of exchange' is not always the same as the 'store of value', and even the 'unit of account'. Indeed, for Fox, 'payment' better captures the legal characteristics of these exchange transactions and represents the capacity of money as a 'medium of exchange' to discharge a debt obligation expressed in a monetary 'unit of account'.[28] Fox therefore believes that any corporeal or incorporeal asset which function as generally accepted 'media of exchange', means of payment, stores of economic purchasing power, and units of account should be treated as money.[29]As a result, money can, in the first instance, be understood as a 'unit of account', embodied in a monetary instrument, circulating via means of payment.[30] The next subsection will look at the different types of corporeal and non-corporeal assets that currently fit within legal classifications of money. It will then compare them to my case studies, focusing first on *fiduciary money*, then *bank money*. Due to the ambiguity faced by Bitcoin, the following subsection will also set up the discussion to analyse money's functions in relation to it.

1.1.2. Current scope of corporeal and non-corporeal assets recognised as money

As we have explored previously, the state can facilitate certain corporeal and non-corporeal assets to function as money. In a legal sense money is separated into two categories: *cash* and *non-cash*. *Cash,* with its corresponding corporeal assets such as banknotes and coins, is further categorised as *fiduciary money*, whose value is expressed by the law and is maintained through the trust in the financial institutions underpinning the assets since the intrinsic value of the material on which the value is described is negligible. For *non-cash*, this usually corresponds to non-corporeal assets such as incorporeal balances held in bank accounts

[28] ibid. 1.24.
[29] ibid. 1.111.
[30] Lanskoy (n 25). 102.

at financial institutions, but also central banks reserves, all falling under the label of *bank money*.[31] A further 'category' of *non-cash* money that is recognised by the law and arising from technical advancements enabling users to "load" monetary value on devices, is known as *e-money*.[32]

Similarly to *bank money*, *e-money* is incorporeal and is often grouped together with *bank money* under the umbrella term of *scriptural money*. *E-money* is broadly defined as an electronic store of monetary value on a technical device that may be widely used for making payments to entities other than the e-money *issuer*.[33] *E-money* for example, includes the stored units of monetary value on electronic payment cards[34] but *e-money* schemes also involve "balance-based" products. In such products, devices store and manipulate a numeric ledger, with transactions performed as debits or credits to a balance stored on chips card, a hard drive in a personal computer, or even a server.[35] Yet, this chapter will not discuss cryptocurrencies' suitability to *e-money* frameworks and regulation, this will be delt with in Chapter 6, instead, this section focuses on cryptocurrencies' applicability *towards* monetary functions by drawing comparisons from the instances of money assets that are already recognised as such.[36] Therefore, in the following paragraphs, I will look at banknotes and *bank money* in relation to money's functions more generally while drawing parallels with the specific instruments of my first two case studies: Bank of England notes and Barclays' credit cards.

[31] Benjamin Geva, 'Cryptocurrencies and the Evolution of Banking, Money, and Payments.' in Chris Brummer (ed), *Cryptoassets: Legal, Regulatory, and Monetary Perspectives* (1st edn, Oxford University Press 2019). 23.
[32] ibid. 25.
[33] FCA, 'PERG 3A : Guidance on the Scope of the Electronic Money Regulations 2011'.
[34] Fox (n 5). 1.53.
[35] Geva (n 31). 25.
[36] FCA, 'Guidance on Cryptoassets - Consultation Paper' (n 9).

Banknotes and coins (*fiduciary money*), like bank accounts (*bank money*) still correspond to the core categories of money widely circulating and being accepted as such today.[37] In terms of their functions, they all represent three different monetary instruments that embody the same currency unit (the pound sterling) in England and Wales. For *fiduciary money*, the means of payment and the monetary instrument are one and the same[38] and it is worth noting that only *fiduciary money* causes the 'unit of account' itself to circulate since it is also a means of payment.[39] Therefore, from a functionalist perspective a banknote can be understood as a corporeal money asset in the form of a monetary instrument made out of tangible material, usually paper or polymer, denominated in a 'unit of account'. This asset serves as both a 'medium of exchange' and a 'store of value' for that 'unit of account' and is widely accepted as payment in the space it circulates for discharging current of future obligations for debt, goods, and services also expressed in the same 'unit of account'.

Moreover, banknotes, and coins, have also been conferred the status of legal tender, which is a value that distinct from the intrinsic value of the corporeal asset.[40] This corresponds to the state officially accepting specific assets as payment for debts of any amount;[41] any other liability which involves an obligation to provide goods or services; or to pay money.[42] Importantly the relationship between an asset as legal tender and it being money is only contingent.[43] The role of the state in making an asset legal tender is not sufficient to make an asset into money, because it may not be sufficient to make it generally acceptable as a 'medium of exchange'.[44] The first theme of my literature review focused on the growing acceptance of

[37] Fox (n 5). 1.52.
[38] Lanskoy (n 25). 102.
[39] ibid. 103.
[40] Fox (n 5). 1.33.
[41] ibid. 1.90.
[42] ibid. 1.88.
[43] ibid. 1.90.
[44] ibid. 1.91.

banknotes in England and showed the rise in acceptability for paper money issued by a variety of Banks. Historically, banknotes were the instrument which evidenced a claim to be paid in the primary form of exchange of the time, namely coins.[45] Through use and acceptability, banknotes came to be treated as a 'medium of exchange' in itself, with Bank of England notes being conferred the status of legal tender in 1833.[46] My first case study therefore covers the emergence and processes in which Bank of England notes became accepted as money, with it being undeniably treated as such during the Restriction Period through legal and social circumstance. This historical analysis is an integral part of how the project explores the legal standpoint of the different monetary instruments. Yet it can still be said that the first case study concerns a corporeal asset of *fiduciary money* and as such aligns itself with a functionalist conceptual understanding of money.

In contrasts to legal coins and banknotes; *bank money* is not legal tender.[47] The bank account assumes the role of monetary instrument, whereas the means of payment, also called the cashless payment medium, like cheques, credit transfers and bank cards, will trigger the payment by giving an order to the bank that holds the account to transfer funds to the creditor's account, through a dual transaction, a debit entry on the payer's account and a credit entry on the payee's account.[48] The term *bank money* therefore refers to bank account balances and not to the various instruments which enable *bank money* to circulate.[49] As Vandezande points out, the instruments derived from such balances – such as credit cards and cheques – can readily be accepted to fulfil an obligation for payment, while not being legal tender themselves.[50]

[45] ibid. 1.36.
[46] ibid. 1.36.
[47] Lanskoy (n 25). 103.
[48] ibid. 102.
[49] ibid. 103.
[50] Vandezande (n 2). 154.

From a legal perspective, Fox states that *bank money* is a 'store of value' that can be circulated from one account to another.[51] This is made possible because *bank money* is a legal incorporeal claim to the payment of a debt by tender of notes or coins.[52] Fox elaborates that it is the reducibility of *bank money* into corporeal form on demand that distinguishes *bank money* from other forms of incorporeal assets such as bonds which are not treated as money.[53] This legal claim is maintained even though the holder of the claim would never exercise that right.[54] Indeed, since it would be impractical today to accept payment obligations in legal tender, it is implicitly agreed to accept payment in a 'medium of exchange' other than legal tender, such as by cheque or credit card, or by fund transfer from bank accounts.[55] For *bank money*, both the incorporeal claim and its proceeds are treated as 'media of exchange' in their own right.[56]

My second case study concerns the rise of Barclaycard as the first and most successful means of payment for *bank money* in England and Wales during the timeframe identified. The exploration of credit cards therefore represents the most widely accepted, used and circulated payment system for *bank money* used during the timeframe analysed and therefore also aligns itself within a conceptual understanding of money based on its functions. With Barclaycard, the Bank and the customer entered into a debt/credit relationship every time a transaction was made which resulted in the *creation* of money based on both interest charges for the consumer and merchant fees for using Barclays' credit service. As the Literature Review has highlighted, this is different from debit card and charge cards which are linked to a deposit account and fall

[51] Fox (n 5). 1.54.
[52] ibid. 1.54.
[53] ibid. 1.54.
[54] ibid. 1.54.
[55] ibid. 1.92.
[56] ibid. 1.54.

under a different regulatory remit than credit cards. In the next subsection I will tackle the applicability of these economic functions to my third case study.

1.1.3. Bitcoin, money's functions, and future conceptualisations

The lack of intermediary, and the uncertainty concerning Bitcoin's status within existing monetary frameworks, means that payment by such digital coins has the potential of bypassing both the bank account and the Banking system which is a monetary architecture that is heavily regulated in order to maintain financial stability and confidence.[57] But this is one of Bitcoin's appeals as a monetary instrument. Whether removing third party intermediation is a strong enough advantage to justify the increased inefficiency of distributed ledgers is a question that can only be answered over the coming years in the test of market acceptance of digital currencies.[58] The question remains whether Bitcoin, a non-corporeal asset, fulfils the functions expected from a money asset, and whether as such, in comparing my third case study with the other two, Bitcoin could be aligned to a functionalist theory of money.

According to the Bank of England, at present there appears to be some consensus that Bitcoin serves as a convincing 'medium of exchange'.[59] Although the lack of accessibility and limited acceptability of cryptocurrencies by market agents and users may limit both their scalability and their use as a 'medium of exchange'. It is also disputed whether cryptocurrencies fulfil the 'unit of account' function of money well. I would argue that it is accepted that 'Bitcoin' is considered as a 'unit of account' because it expresses the denomination in which the transactions for this asset are undertaken. Conversely, it could then be argued that the volatility of Bitcoin's value, or the fact that it is usually assessed in

[57] Geva (n 31). 31.
[58] ibid. 34.
[59] Vandezande (n 2). 160.

comparison to a more broadly accepted 'unit of account', can cast doubt on whether users truly understand the underlying value of the 'unit of account' itself.[60] Indeed, market agents accepting Bitcoin for payment update their prices in relation to currency values frequently. Moreover, it is even rarer for them to accept payment in Bitcoin for goods or services, while also maintaining their accounts solely in Bitcoin.[61] On the other hand, Vandezande submits that "legal tender is never perfectly stable, as it is subject to inflation and deflation."[62] As such, the volatility of cryptocurrencies means that they are not a *stable 'unit of account'*; this alone is not sufficient to completely disregard their functionality as one.[63] Likewise, it can be argued that my third case study: Bitcoin, is becoming the standard 'unit of account' for cryptocurrencies, as the values of other cryptocurrencies are often measured to it, further cementing its status as an accepted 'unit of account' for the subject of economic exchange within the space it is accepted and circulated.

Finally, due to their unstable nature and substantial value fluctuation, cryptocurrencies' functionality as a 'store of value' may be impeded.[64] At the same time, the finite number of Bitcoins in existence may prove to adversely affect both prices and liquidity.[65] More concerning however, Bitcoin's supposed limit, would have a deflationary bias on the economy by recreating a virtual gold standard if widely adopted.[66] This would also echo similar fluctuations and instabilities and debasement of older forms of money.[67] Yet it must be pointed out that the weakness in Bitcoin's functionality as a 'store of value', or any other function for that matter, can be addressed by its users, the current 21 millions cap is not engraved in stone

[60] ibid. 161.
[61] Carney (n 1). 9.
[62] Vandezande (n 2). 161.
[63] ibid. 161.
[64] ibid. 161.
[65] Geva (n 31). 33.
[66] Carney (n 1). 7.
[67] ibid. 7.

and is thus subject to change.[68] Changing or upgrading the asset has already occurred with Bitcoin forking on separate occasions due to its previous limitation as a 'medium of exchange'. Moreover, it must be reminded that Bitcoin, although the most prominent of cryptocurrencies, is only one of many circulating today, each building on previous iterations at a rapid pace, tackling the limitations of the previous version at a far faster pace than previous money assets.

Although Bitcoin does not appear to *satisfactorily* fulfil the functions of money, when judged against the functioning of the entire *cryptocurrency ecosystem*, extending beyond the currencies themselves, to the exchanges centres, the miners creating new coins and verifying transactions and updating the blockchain, and finally the wallet providers storing Bitcoins.[69] It is possible to ascertain that Bitcoin acts as money, but only for *some people*, used to a *limited extent*, and in *parallel* with traditional currencies already accepted by users.[70] I will now consider whether cryptocurrencies other than Bitcoin could better fulfil these functions. This will also open the way to questioning where the boundary should be drawn between money and non-money assets for the purpose of the law.[71]

Evolution is possible, and just like other forms of money in the past which are now accepted as such, the narrow status of Bitcoin today, and future iterations of cryptocurrencies, must not be categorically ruled out, as the scalability and accessibility to these new assets increases.[72] Once issues of volatility, scalability, and deflation are resolved, cryptocurrencies have indeed the potential to generate means of payment "offering much of the anonymity of

[68] Geva (n 31). 33.
[69] Carney (n 1). 7.
[70] ibid. 7.
[71] Fox (n 5). 1.52.
[72] Vandezande (n 2). 162.

cash while also allowing transactions at long distances"[73] and yet allowing people to "clear and settle quickly without an intermediary."[74] Aiming to stabilise these key monetary attributes are stablecoins, a different class of cryptocurrency that attempts to offer price stability by being backed by a reserve asset. The latest consultation from HMT focuses on proposed regulation of these particular assets.[75] Stablecoins attempt to be the best of both traditional forms of money and cryptocurrencies: the peer-to-peer transactions, security and privacy of cryptocurrencies, and the stability of fiat currencies. This is the approach taken by Facebook's proposed cryptocurrency: Libra, whose accessibility and scalability would be far greater than that of Bitcoin and even of *fiduciary money* itself. Yet *conceptually* if a cryptocurrency was to gain broader acceptance and reach systemic status, it is possible that it would end up properly fulfilling the *functions* of money.[76] As such, it is possible that a widely accepted cryptocurrency can enjoy at least some level of 'moneyness' even if they are not legal tender, and without state support.[77] Having legal uncertainty over the status of this media when it is being circulated and used as means of payment once this threshold is reached would pose financial and economic risks.

Working from the limitations of Bitcoin drawn out in the analysis above, it is nevertheless argued that cryptocurrencies *theoretically* fulfilling the functions of money would be described as an incorporeal money asset denominated and storing its *own* 'unit of account'. Similarly, to *fiduciary money*, cryptocurrencies would act as the monetary instrument storing the value of the 'unit of account' but also serving as the 'medium of exchange'. Indeed, the

[73] Geva (n 31). 37.
[74] ibid. 37.
[75] HM Treasury, 'UK Regulatory Approach to Cryptoassets and Stablecoins: Consultation and Call for Evidence' (HM Treasury 2021).
[76] Vandezande (n 2). 162.
[77] ibid. 150.

'unit of account' itself is created by validating previous transactions by solving increasingly difficult cryptographic problems. It is circulated by exchanging cryptocurrencies for goods and services expressed in the same 'unit of account'. Similarly, to *bank money* however, the balance of the 'unit of account' of the incorporeal asset is held on wallets and the incorporeal claim for any amount accepted for payment held in a wallet is the basis for the transactions between and through wallets and for the 'unit of account' to circulate as a means of payment. Moreover, just like *bank money*'s balances, each transaction and cryptocurrencies created, are recorded on the blockchain and thus the sum of every cryptocurrencies in existence can be traced on this ledger. Therefore, contrary to non-cash monetary instruments (*bank money*) which are held at external financial institutions and needing an intermediary to facilitate its function of exchange, cryptocurrencies are an incorporeal monetary instrument represented on the blockchain, circulating through individual's wallets, serving as a 'medium of exchange' through the same mechanisms in which it is able to store value. Yet the lack of a central identifiable intermediary, and the absence of a statutory incorporeal claim to reducibility into legal tender still casts a shadow over whether cryptocurrencies should be offered the same legal protection as traditional money.

The first theme of this section has therefore aimed to clarify the relationship between the law, corporeal and non-corporeal assets that are accepted as money, and how money's functions are still used in determining the legal regimes facilitating a money asset's functioning. Applying this approach in relation to Bitcoin has also highlighted the limitations of adopting such a functionalist framework in determining a conceptual understanding of money that can be analysed across time. Moreover, previous discussions regarding *fiduciary money* and *bank money* have shown that legal perspectives of money assume a level of state intervention and the need of an authority in designating what constitutes money that is not

mirrored in cryptocurrencies.[78] As Vandezande summarises: "Money, therefore, still remains firmly rooted in the belief that the emitting state authority – either itself or by regulating other entities – will respond to the obligations it created by that emission."[79]

1.1.4. Moving away from authority

Functionalist perspectives of money's origins, exchange, and creation are often at odds with an understanding centred around the state in monetary theory. This particular perspective has its roots in traditional orthodox economic theories of money. According to Ingham, this view has largely been influenced by commodity theory of money and focused on an ahistorical functionalism understanding of money.[80] To this point, Palley adds that modern economic theory explains the existence of money by reference to the three functions of money.[81] Money further comes into being because it helps deliver on these three useful functions.[82] In the orthodox story, money emerged to lubricate markets as a common medium of exchange was adopted in order to dramatically reduce transaction costs and move away from the inefficiencies of barter.[83] As such, the emergence of money reflects the process in which a society gradually converges onto a commodity.[84] Although orthodox economic theories of money have formed the basis of understanding of money in legal and economic contexts, this position has been challenged by sociologists and historians, highlighting new perspectives on money's origins, creation, and nature. Money should not be understood as a commodity that functions as a neutral medium of exchange representing values established by the economy.[85]

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[78] ibid. 159.
[79] ibid. 159.
[80] Geoffrey Ingham, 'Capitalism, Money and Banking: A Critique of Recent Historical Sociology' (1999) 50 British Journal of Sociology 76. 77.
[81] Thomas Palley, 'THE EVOLUTION OF MONEY DEBATE: FUNCTIONALISM VERSUS CHARTALISM, SCHUMPETERIAN DYNAMICS, GRESHAM'S FALLACY, AND HOW HISTORY CONSTRAINS PUBLIC FINANCE' (2018) 34 FMM Working Paper 1. 2.
[82] ibid. 2.
[83] Pavlina R Tcherneva, 'Money: A Comparison of the Post Keynesian and Orthodox Approaches' (2001) 4 Oeconomics 109. 109.
[84] Palley (n 81). 3.
[85] Ingham, 'Capitalism, Money and Banking: A Critique of Recent Historical Sociology' (n 80). 78.

Rather all types of monetary systems are elaborate social structures comprising of those who 'make' or 'supply' money and those who use or demand it.[86] Indeed, these dichotomous relations emphasise that money's origin is social, and that it is market interactions that establish specific assets as money, provided everyone believes others will accept it as such.[87]

This is further accentuated by the rise of capitalism significantly influencing the evolution of the mode of producing money.[88] Indeed, current forms of money should be understood as a mode of production in their own right and consisting of their own 'social relations'.[89] Indeed, different types of monetary media "have their own distinct social conditions of existence that cannot be reduced to the functional role of money in either the 'economy' or for individual 'utility maximization'."[90] As such, the way money is able to perform its functions is explained as a result of social and political processes.[91] In particular, the general acceptance of money depends on some form of authority and legal infrastructure.[92] This is the basis of the chartalist's understanding of money. Chartalists and state money theorists argue that certain monetary instruments came to dominate markets because it was required by governments in payment of taxes.[93]

Innes also bridged the gap between traditional chartalist understandings and advanced that the credit approach provides a more useful vision of monetary operations in a capitalist economy.[94] Expanding on the idea that money is a creature of the state, chartalist theories states

[86] ibid. 80.
[87] Michael Beggs, 'The State as a Creature of Money' (2017) 22 New Political Economy 463. 465.
[88] Ingham, 'Capitalism, Money and Banking: A Critique of Recent Historical Sociology' (n 80). 80.
[89] ibid. 80.
[90] ibid. 80.
[91] Geoffrey Ingham, *The Nature of Money* (1st edn, Polity 2004). 70.
[92] Beggs (n 87). 470.
[93] Tcherneva (n 83). 111.
[94] Wray, 'From the State Theory of Money to Modern Money' (n 4). 639.

that the state chooses the unit of account, defines what serves as money and what will be accepted for the payment of tax liabilities.[95] Crucially, money becomes widely accepted not because of sovereignty alone, nor legal tender laws, but because the state has the power to impose and enforce tax liabilities and choose the monetary systems which are able to pay tax liabilities.[96] As Wray notes, in most cases it is state money which is used, and state money that which the states accepts in payment of taxes.[97] Ingham provides a more detailed look at the hierarchy of social relations underpinning the debt/credit relations that constitutes money, this will form much of the analysis of the second theme.

Building on these assumptions, a modern version of chartalism has been further developed by authors such as Knapp, Innes and Ingham, and has been called Modern Money theory (MMT).[98] The appeal of MMT is that it emphasises state theory of money and combines it with credit theories.[99] This theory is opposed to traditional orthodox economic theory in the way it emphasises the social relationships, particularly the credit relationships, and how these are now accepted as money.[100] Yet despite providing a strong foundation for explaining the origins, and production of money, chartalism has serious limitations in its narrow treatment of the state, seeing it as a unitary agent rather than a strategic agent within money's production and exchange.[101] Although Fox draws on functionalist perspectives to explain the interactions between the exchange and protection of money assets, and the legal regimes supporting the functioning of these assets as money, he also aligns his work with credit theory of money.[102]

[95] Tcherneva (n 83). 111.
[96] Wray, 'From the State Theory of Money to Modern Money' (n 4). 647.
[97] ibid. 647.
[98] ibid. 632.
[99] Reynold Nesiba, 'Do Institutionalists and Post-Keynesians Share a Common Approach to Modern Monetary Theory (MMT)?' (2013) 10 European Journal of Economics and Economic Policies 44. 48.
[100] ibid. 46.
[101] Beggs (n 87). 474.
[102] Fox (n 5). 2.45.

Fox explicitly points out that money is not primarily a creature of the state, and it does not derive its existence and functions from the legal regime which the state decrees for it.[103] Indeed, the state itself cannot make any particular commodity a medium of exchange, and in that way confer on it the status of money.[104] The most it can do is to prefer certain kinds of commodity and support its use as a medium of exchange by the public.[105]

Yet, as the rise of Bitcoin has proven, certain key elements of this understanding, in particular the role of a centralised authority operating through the state and the central banks, are still subject to contention. The second theme will be exploring core tenets of this theory by looking at credit theory of money in more detail, focusing on the debt/credit relationships and the social relations that underpin money, characteristics which Beggs acknowledges are uncontroversial amongst monetary theories.[106] As such there is an underlying question about MMT's degree of applicability to contemporary financial system.[107] Authors have challenged MMT reliance on state authority, with Febrero[108] and Rochon[109] for example, highlighting that other institutions can also issue instruments that circulate as money.[110] As such, the history and analysis of money should be understood as the evolution of a system of social relations, of which states are only a part.[111] Although it is necessary to move away from a functionalist understanding of money itself, and its argument for money's origins. That is not to say that money's functions are to be dismissed, they are still a benchmark in determining an asset's

[103] ibid. 2.45.
[104] ibid. 2.04.
[105] ibid. 2.04.
[106] Beggs (n 87). 470.
[107] Nesiba (n 99). 56.
[108] Eladio Febrero, 'Three Difficulties with Neo-Chartalism' (523) 31 Journal of Post Keynesian Economics 2009.
[109] Louis-Philippe Rochon and Matias Vernengo, 'State Money and the Real World: Or Chartalism and Its Discontents' (2003) 26 Journal of Post Keynesian Economics 57.
[110] Nesiba (n 99). 52.
[111] Beggs (n 87). 466.

effectiveness in fulfilling the key economic functions necessary for the economy and that heavily influence policymakers in regulating assets as money.

1.2. Articulating an extended credit theory of money

1.2.1. Money as social relations underpinned by trust

Fox argues that recent economic and sociological literature has started to show that "the essence of money lies not in corporeal objects but in corporeal debtor/ creditor relationships."[112] Other legal theorists have also expressed concerns with a tangible monetary unit and have looked at the relations between money and law *beyond* its functions. Ingham's work in developing a sociological definition of money is of manifest importance for this project in terms of the breadth and conceptual understanding that it gives to money. His formulation of the credit theory of money provides the most established theory of money to date. A conceptual understanding of money for the purpose of comparative-historical analysis should be broadened to take into account the key social aspects of money and the elements of trust maintaining any monetary system. This subsection will therefore analyse Ingham's theory and test its applicability in relation to my three case studies. During that narrative, this second theme will argue for a wider understanding of authority based on the importance and role of trust in the social relations underpinning money. This understanding will then serve as a strong foundation for the historical comparison of banknotes, credit cards and Bitcoin across time, but also serve as a building block in defining the other two objects of enquiry. Indeed, it is argued that current understandings of money and its interrelationships with my other objects of enquiry will add newer perspectives and understandings in ways that existing approaches are unlikely to achieve.

[112] Fox (n 5). 1.121.

Sociology has a long relationship with the meaning of money, and it would take too long to cover each theory and their evolution in this project. However, a brief overview is put forward in order to contextualise the choice, applicability and the need for an extended understanding of Ingham's theory of money for the purpose of this project. Contemporary understandings of money in sociology have been heavily influenced by Smith, Keynes, Marx, but in particular Simmel[113] and there have been various works aiming to incorporate his concepts into modern society.[114] Authors explaining the evolving nature of money and its effect on society can broadly be categorised into three themes, with scholars frequently overlapping between concepts. At its core, authors such as Ingham[115], Dodd,[116] and Carruthers[117] have tended to focus on uncovering the meaning of money, trying to answer the question: What is money? Similarly, authors such as Wray[118], but Desan[119] in particular, have focused on how money came to be, or how money functions. Finally, the literature on money has been focused towards analysing the *consequences* of money on modern society. For example, Dodd has also

[113] Georg Simmel, *The Philosophy of Money* (1st edn, Routledge Classics 2011).
[114] Nigel Dodd, 'On Simmel's Pure Concept of Money: A Response to Ingham' (2007) 48 Archives Europeennes de Sociologie 273; Nigel Dodd, 'Simmel's Perfect Money: Fiction, Socialism and Utopia in The Philosophy of Money' (2012) 29 Theory, Culture & Society 146.
[115] Ingham, *The Nature of Money* (n 91); Geoffrey Ingham, 'The Specificity of Money' (2007) 48 Archives Europeennes de Sociologie 265; Geoffrey Ingham, 'Money Is a Social Relation' (1996) 54 Review of Social Economy 507; Geoffrey Ingham, 'Revisiting the Credit Theory of Money and Trust' in Jocelyn Pixley (ed), *New Perspectives on Emotions in Finance: The sociology of confidence, fear and betrayal* (1st edn, Routledge 2013).
[116] Nigel Dodd, *The Social Life of Money* (1st edn, Princeton University Press 2016); Nigel Dodd, 'Utopian Monies: Complementary Currencies, Bitcoin, and the Social Life of Money' in Nina Bandelj, Frederick F Wherry and Viviana A Zelizer (eds), *Money Talks: Explaining how money really works* (1st edn, Princeton University Press 2017); Nigel Dodd, 'Reinventing Monies in Europe' (2005) 34 Economy and Society 558.
[117] Bruce G Carruthers, 'The Meanings of Money: A Sociological Perspective' (2010) 11 Theoretical Inquiries in Law 51.
[118] L Randall Wray, 'An Irreverent Overview of the History of Money from the Beginning of the Beginning through to the Present' (1999) 21 Journal of Post Keynesian Economics 679; L Randall Wray, 'Alternative Approaches to Money' (2010) 11 Theoretical Inquiries in Law 29; Wray, 'From the State Theory of Money to Modern Money' (n 4).
[119] Christine Desan, *Making Money: Coin, Currency, and the Coming of Capitalism* (1st edn, Oxford Scholarship Online 2015) <http://www.oxfordscholarship.com.libproxy.york.ac.uk/view/10.1093/acprof:oso/9780198709572.001.0001/acprof-9780198709572> accessed 30 October 2017; Christine Desan, 'Money as a Legal Institution' in David Fox and Wolfgang Ernst (eds), *Money in the Western Legal Tradition: Middle Ages to Bretton Woods* (1st edn, Routledge 2016); Christine Desan, 'The Constitutional Approach to Money: Monetary Design and the Production of the Modern World' in Nina Bandelj, Frederick F Wherry and Viviana A Zelizer (eds), *Money Talks: Explaining how money really works* (1st edn, Princeton University Press 2017).

looked at how money expresses the essence of modern life, exploring the social life of money; whereas the approach taken by much of Zelizer's work focused on the social meanings attached to money, where she mapped out how money has different social meanings depending on the group of individuals using it.[120]

However, Ingham's credit theory of money, developing from Innes' work[121], has emerged as the clear frontrunner of contemporary theories of money. This came after a lengthy debate between Fine,[122] Lapavitsas,[123] Zelizer,[124] Dodd[125] and Ingham[126] about the meaning of money that centred around understandings of Simmel's work, the need for an authority, and the role and *type* of trust and social relations underpinning money. Ingham's credit theory of money has largely been adopted by authors across disciplines, such as Fox[127] and Maurer[128], amongst a few, in their analysis of money, further justifying its interdisciplinary appeal for this project. The next few paragraphs will clearly set out Ingham's theory of money.

Ingham's overarching understanding of money moves beyond the 'evident' assertion that it is produced socially and is underpinned by trust.[129] Rather money is itself a social relation

[120] See Viviana A Zelizer, *The Social Meaning of Money* (2nd edn, Princeton University Press 2017); Nina Bandelj, Frederick F Wherry and Viviana A Zelizer (eds), *Money Talks: Explaining How Money Really Works* (1st edn, Princeton University Press 2017).
[121] Alfred M Innes, 'What Is Money?' (1913) 30 Banking Law Journal 399.
[122] Ben Fine and Costas Lapavitsas, 'Markets and Money in Social Theory: What Role for Economics?' (2000) 29 Economy and Society 357.
[123] Costas Lapavitsas, 'Information and Trust as Social Aspects of Credit' (2007) 36 Economy and Society 416; Costas Lapavitsas, 'The Social Relations of Money as Universal Equivalent: A Response to Ingham' (2005) 34 Economy and Society 389.
[124] Viviana A Zelizer, 'Fine Tuning the Zelizer View' (2000) 29 Economy and Society 383.
[125] Dodd, 'On Simmel's Pure Concept of Money: A Response to Ingham' (n 114).
[126] Geoffrey Ingham, 'Further Reflections on the Ontology of Money: Responses to Lapavitsas and Dodd' (2006) 35 Economy and Society 259; Geoffrey Ingham, 'Fundamentals of a Theory of Money: Untangling Fine, Lapavitsas and Zelizer' (2001) 30 Economy and Society 304.
[127] Fox (n 5).
[128] Bill Maurer, Taylor C Nelms and Lana Swartz, '"When Perhaps the Real Problem Is Money Itself!": The Practical Materiality of Bitcoin' (2013) 23 Social Semiotics 261.
[129] Geoffrey Ingham, 'The Nature of Money' (2004) 5 Economic Sociology: European Electronic Newsletter 18. 25.

of credit and debt relationships, circulating and defining a 'monetary space' in which economic transactions, debts, and prices are denominated in a 'money of account'.[130] Fundamentally for Ingham, money is created by debt/credit relations, regardless of its form and substance.[131] Ingham argues that debt and credit can only be understood as a relation since "credit and debt refer to the same thing seen from either side of the relation."[132] Indeed, money represents a claim or credit against the issuer which tend to traditionally be a monarch, a state, or banks.[133] Furthermore, something can only be issued as money if it is capable of cancelling any debt incurred by the issuer.[134] Thus central to this understanding of money is the fact that credit and money are fundamentally intertwined. Credit here is not understood merely as way of creating money, or directly associated to banks, rather credit (and debt) are seen as the essential social relations dictating any monetary interaction, including cash transfers or 'on the spot' transactions. In the next subsection, I will look into more detail at Ingham's credit theory of money by engaging with its various components and theoretical assumptions. It will explore the meaning behind key terminology in Ingham's theory such as 'money of account', 'media of exchange and transmission' and 'monetary space'. These key concepts underpin a 'moneyness' test which determines what asset can be constituted as money. I will then engage with how my first two case studies meet this 'moneyness' test and then show how Bitcoin can help unravel the need of an authority in maintaining money.

1.2.2. Ingham's credit theory of money and fulfilling 'moneyness'

For Ingham, determining what constitutes money is established through a 'moneyness' test. This depends on the satisfaction of two conditions to determine what constitutes as

[130] ibid. 25.
[131] Ingham, 'Revisiting the Credit Theory of Money and Trust' (n 115). 121.
[132] ibid. 122.
[133] Geoffrey Ingham (n 129). 25.
[134] ibid. 25.

money.[135] That it is a measure of abstract value (Money of account) and that it is a means of storing and transporting this abstract value (for means of final payment or settlement of debt).[136] All the other functions, such as the 'medium of exchange', 'unit of account', and 'store of value' are subsumed under these two attributes.[137] Building on the work of Simmel,[138] Ingham believes that his understanding of credit theory is said to be *anterior* to these classic functions, allowing his definition to explain *how* the key functions, explored in depth in the first theme, arise.[139] Thus, 'moneyness' is assigned by the 'money of account', not by the form of money takes. Indeed, the focus of credit theory is not on whether the asset being circulated and accepted for payment is money, but rather on whether the abstract value embodied in those assets can be understood as money. This is particularly useful in determining whether my case studies meet the test of 'moneyness' since the materiality, tangibility or portability of forms of money should not be confused with its abstract quality of money.[140] 'Money of account' is thus primary because without it, the various 'medium of exchange' and transmission, such as notes and credit cards, would not have the quality of 'moneyness'.[141]

When addressing the meaning of 'money of account', Ingham also argues that money therefore has a myriad of forms and media, which all have a specific and identifiable power of purchase because both sides of those affected by the social relations stemming from its debt/credit relationships are described by a common 'money of account'.[142] Ingham therefore defines 'money of account' as a measure of abstract value and the mean of storing and

[135] Ingham, *The Nature of Money* (n 91). 70.
[136] ibid. 70.
[137] ibid. 70.
[138] Simmel (n 113).
[139] Geoffrey Ingham (n 129). 21
[140] Ingham, *The Nature of Money* (n 91). 70.
[141] Ingham, 'Further Reflections on the Ontology of Money: Responses to Lapavitsas and Dodd' (n 126). 270.
[142] ibid. 267.

transporting this abstract value.[143] In other words, "money is a socially constructed standardized measure of abstract value which certain things are declared to bear or transmit."[144] As such a 'monetary instrument' can only be issued as money if it can be used to cancel any debt or repay any loan sustained by the issuer and has to be denominated in a 'money of account' in order for it to be readily transferable.[145]

It is useful to further clarify the distinction between 'media of exchange' and 'media of transmission' within Ingham's theory.[146] This represents the medium in which a 'money of account' is represented and is circulated and transmitted. Indeed, coins and banknotes are considered to be both 'media of exchange', since they can be exchanged for goods, and 'media of transmission, since they circulate within their own 'monetary space' in order to be exchanged. Credit cards, on the other hand, are labelled as "non-circulating media of transmission of abstract value stored in accounts."[147] Indeed, credit cards should still be understood as money in relation to Ingham's theory since it is in essence "transferable credit"[148] which can take a myriad of forms, including credit cards, with a specific and identifiable power of purchase because both sides (debt/credit) are described by a 'money of account'.[149]

Ingham's approach further clarifies that money circulates within a self-defined 'monetary space' through 'media of exchange or transmission'. A 'monetary space' is the territory or boundary (which I will assume to encompass both geographical and digital spaces)

[143] Ingham, 'Revisiting the Credit Theory of Money and Trust' (n 115). 124.
[144] ibid. 124.
[145] Benjamin Geva, '"Bank Money" The Rise, Fall, and Metamorphosis of the "Transferable Deposit"' in David Fox and Wolfgang Ernst (eds), *Money in the Western Legal Tradition: Middle Ages to Bretton Woods* (1st edn, Oxford Scholarship Online 2016). 649.
[146] Ingham, 'Further Reflections on the Ontology of Money: Responses to Lapavitsas and Dodd' (n 126). 260.
[147] ibid. 260.
[148] ibid. 267.
[149] ibid. 267.

in which all prices and debts are denominated by a single 'money of account'.[150] It is worth highlighting that contrary to the functionalist approach, the onus is placed on the 'money of account' rather than whether the medium itself that embodies it can fulfil the functions expected of money.

From this understanding of Ingham's theory, it is clear that banknotes, even those issued by private institutions historically, such as the Bank of England notes that this project examines, can be understood as money as the note embodies a 'money of account' circulating as a 'medium of exchange and transmission'. Secondly, credit cards, and by relation Barclaycard, also conform to Ingham's definition of money as it represents the 'media of transmission' of the same 'money of account' that is stored in bank accounts and enables it to circulate within its own digital 'monetary space'. It is worth clarifying that Ingham's terminology of 'presence' is meant to describe the debt/credit relationship arising out of transactions between a customer, a market agent, and the Bank. I believe that the correct interpretation of this ''money of account' present in account' is not meant to refer to money actually stored in a bank account, which is more akin to debit cards rather than credit cards. These two case studies embody money as 'media of exchange and transmission' at different points in time and space, but still represent a measure of an abstract value, and each are able to transmit this value.

Linking these discussions to my third case study on cryptocurrencies and Bitcoin, Ingham reflects that new 'monetary spaces' may be formed with the advent of technology and the internet.[151] Writing before the advent of cryptocurrencies, Ingham muses that to pass the

[150] ibid. 266.
[151] Ingham, *The Nature of Money* (n 91). 178.

'moneyness' test, as opposed to being merely a convenient 'medium of exchange', these new forms require only to represent an abstract 'money of account' and have authoritative foundations, that is to say some autonomous social and political bases.[152] As such the next subsection will analyse original conceptions of authority in relation to money. It will first focus on the link between credit theory of money and a sovereign state. Then it will draw parallels between the need for an authority and the complex institutional systems needed to facilitate the functioning of money. Finally, it will engage with Bitcoin and 'moneyness', laying the foundations to broaden the scope of the need for an authority and draw out the importance of trust instead.

1.2.3. Widening conceptions of authority in relation to money

According to the credit theory of money, the social mechanism by which private debts are transformed into public money is one of the most important and distinctive elements of a capitalist monetary system.[153] Indeed, banking systems transform private debt contracts into public money by being part of a giro that links the central bank, the state and its creditors, enabling these privately contracted credit relations to be 'monetized'.[154] This then creates a sovereign 'monetary space' defined by its 'money of account' and the forms and media of money that conform to it.[155]

Since monetary societies are held together by networks of debt/credit relations, money is a "form of sovereignty and as such it cannot be understood without reference to an authority."[156] Although states emit currencies, what is important is that the currency is

[152] ibid. 178.
[153] Ingham, 'Revisiting the Credit Theory of Money and Trust' (n 115). 131.
[154] Geva (n 145). 651.
[155] Ingham, 'Revisiting the Credit Theory of Money and Trust' (n 115). 132.
[156] Geoffrey Ingham (n 129). 25.

described as money by their 'money of account'. This enables other 'media of exchange and transmission' not directly issued by the state to be described and circulated within the same 'monetary space', such as bank notes and bills of exchange in the 18th and 19th Century and credit cards today.[157] Ingham believes that money can only be produced and exist concurrently to a sovereign state as the authority holding the elements of money together, because "historically, states have been the most successful authorities for establishing and maintaining a stable money of account."[158] This is due to the state being able to choose which monetary instrument and money of account were to be used in order to discharge tax liabilities.

The primacy of the 'money of account' in credit theory is therefore crucial in determining what constitutes money and how they circulate.[159] However, different sources of power may exist and impose their own 'money of account' for transactions. This can be understood to encompass 'media of exchange and transmission' that states do not produce.[160] As previously touched upon in the sections above, states and their currencies are not essential to the argument about the primacy of 'money of account' and the 'moneyness' of instruments.[161] The next paragraphs will analyse the common association between the need of an authority and money. It will then show how Bitcoin can meet Ingham's test for 'moneyness' by extending the scope of authority to non-state actors.

Desan echoes Ingham's need for an authority in dealing with money.[162] She focuses primarily on money as a legal institution, or as a constitutional approach, and argues that the

[157] Ingham, 'Further Reflections on the Ontology of Money: Responses to Lapavitsas and Dodd' (n 126). 271.
[158] ibid. 271.
[159] ibid. 271.
[160] ibid. 271.
[161] ibid. 271.
[162] See Desan, *Making Money* (n 119).

relationships that make money work are matters of governance carried out in law.[163] money can therefore be seen as a mode of governance and a product of legal engineering done by communities to mobilise resources and is used by individuals for their own purposes. Yet, Desan focuses, similarly to Ingham, on states and governments because of their stature as "the dominant monetary engineers"[164] in society. Desan is however keen to point out that other collectives, such as Bitcoin taken as a whole, can make money by establishing complex systems enabling the establishment of the medium, the collection of regular contributions, and the enforcement of its use within a community.[165] Indeed, money is a social and political fact as much as it is an economic one.[166] It is worth noting that the legal framework present to support money as explained by Desan is different to the scope of legal regimes applicable to money explored in the previous part of this section which focused on the law protecting and supporting money's functions, particularly that of exchange and of 'unit of account'. On the other hand, Desan's viewpoint focuses on how money, through law, becomes a mode of governance by mobilising communities into shaping and maintaining the 'monetary space' in which the 'money of account' circulates, providing the infrastructure necessary for it to meet the 'moneyness' test, and thus, become widely accepted. This prefaces Simmel's central sociological assumption about money in which it has a 'claim upon society' that will be explored later in this section.[167]

[163] Desan, 'Money as a Legal Institution' (n 119). 19.
[164] Desan, 'The Constitutional Approach to Money: Monetary Design and the Production of the Modern World' (n 119). 114.
[165] ibid. 115.
[166] Rebecca L Spang, 'The Currency of History: Money and the Idea of Progress' (2016) 33 World Policy Journal 39. 41.
[167] Philipp Degens, 'Book Review: The Social Life of Money by Nigel Dodd' (*LSE Blogs*, 4 February 2015) <http://blogs.lse.ac.uk/lsereviewofbooks/2015/02/04/book-review-the-social-life-of-money-by- nigel-dodd/> accessed 20 August 2017.

This begins to show that the *processes* that makes money pass the 'moneyness' test can be taken over by non-state actors or institutions; authority and state should not be seen as synonymous. This aligns itself with the credit theory of money that sees the money supply, not only those accepted by the state, as being created endogenously. This is important for this project as it highlights the importance of analysing the processes and mechanisms of how money changes over time and how it is shaped by those using it, rather than merely what the state or the central institutions are doing. Indeed, current perceptions of money's history as merely a growth of economic development and technological change focusing on forms of money that are legally recognised as such, obscures the reality of parallel means of exchange between private and public money.[168] This can be seen in the variety of coins, banknotes, and even foreign currencies being used *within* the same financial system, especially historically with local banks and goldsmiths, but also today where market agents can accept local currencies (Bristol Pound) and other forms of money. The history of money should be understood as something other than a tale of material progress.[169] As we have seen, expressing the status of certain assets as money based on pre-existing understandings and legal regimes of traditional corporeal assets creates legal uncertainty and confusion. The plurality of forms of money circulating today and the rapid emergence of new ones also poses a problem for narrowly defining money. Moreover, this skewed perspective of money coming from a sovereign state stems from a habit of thinking that this has always been so.[170] As such, decentralised currencies, like Bitcoin, may seem novel and threatening.[171] Indeed, widening the scope of authority can begin to explain how Bitcoin and other alternative currencies may be accepted as money even though they are not attached to states or central banks.[172]

[168] Spang (n 166). 42.
[169] ibid. 43.
[170] ibid. 43.
[171] ibid. 43.
[172] Desan, 'The Constitutional Approach to Money: Monetary Design and the Production of the Modern World' (n 119). 115.

Maurer aimed to explain the appeal of Bitcoin and its underlying technology in sociological theories of money. According to him, Bitcoin supports Ingham's position of 'moneyness' and the centrality of 'money of account' because cryptocurrencies depend on a system of record keeping that warrants its own 'monetary space' and supports a hierarchy of credibility and acceptability by which it is constituted.[173] In other words, each claim or credit against another in the blockchain is first denominated in the same 'money of account' (the Bitcoin). Secondly it represents the final means of payment within its own 'monetary space', which is digital. This is further elaborated by Bjerg where he points out that the value, or its 'money of account' relies on "the users' trust that other users are going to accept the currency in future payments for goods, services and the settlement of debt."[174] By doing so, Bjerg acknowledges that Bitcoin must be underpinned by social interactions and supports the idea that Bitcoin adheres to a credit theory of money.[175] This is further justified by Vandezande who finds that the credit theory of money is one of the few theories that allow private currencies to be considered as money.[176] Although there is a growing consensus of private currencies, including Bitcoin, to be considered as money in the broadest sense this does not automatically result in a broad acceptance of such private currencies as money.[177]

Lastra provides the most succinct overview of the conceptual challenges faced by Bitcoin in relation to the credit theory of money and current leading conceptualisations. Although cryptocurrencies are currently being characterised as objects of property rights,

[173] Bill Maurer, 'Blockchains Are a Diamond's Best Friend: Zelizer for the Bitcoin Moment' in Nina Bandelj, Frederick F Wherry and Viviana A Zelizer (eds), *Money Talks: Explaining how money really works* (1st edn, Princeton University Press 2017). 227.
[174] Bjerg (n 3). 63.
[175] ibid. 64.
[176] Vandezande (n 2). 159.
[177] ibid. 159.

Lastra argues that this it is not a stable long-term position for any legal system.[178] Indeed, despite their growing economic importance, incorporeal assets are not well accounted for in property law.[179] This point echoes much of the arguments Fox has made about transposing elements of corporeal assets into incorporeal ones. Legal definitions of money have generally focused on banknotes and coins' physical properties for the purposes of legal categorisation.[180]

Lastra highlights one of the challenges that we have discussed in previous paragraphs of identifying where money *is* in credit card transactions.[181] Lastra argues that monetary law needs to better explain the bilateral obligations in relation of the broad money supply, and how they can circulate as a medium of payment. As we have highlighted at the beginning of this section, categorisation has important implications for an instrument's status under regulatory regimes and tax.[182] Lastra summarises that credit theories of money have indeed often focused on the importance of legislative fiat, giving instruments the status of money.[183] Moreover, Lastra acknowledges that the state has the authority to decree that certain assets and not others are 'legal tender' for the payments of all debts, including tax payment to the state.[184] Lastra advocates credit theories since "our system is probably better explained by credit theories of money that emphasise the role of the state."[185] Yet this state centric credit theory of money leaves little space for instruments such as Bitcoin, that circulate within a private payment network.[186] Likewise, state monopoly over money creation is weaker than some accounts might

[178] Rosa Maria Lastra and Jason Grant Allen, 'Virtual Currencies in the Eurosystem: Challenges Ahead' (European Parliament 2018) Monetary Dialogue. 29.
[179] ibid. 29.
[180] ibid. 29.
[181] ibid. 29.
[182] ibid. 30.
[183] ibid. 32.
[184] ibid. 32.
[185] ibid. 32.
[186] ibid. 32.

suggest, since a vast majority of broad money supply is created by private commercial banks by taking deposits or making loans.[187]

In relation to Bitcoin, Lastra argues that there is a lost middle ground, namely private credit theories of money, which mirrors my extended credit theory of money that will be elaborated in the next few paragraphs.[188] Indeed, on the one hand advocates of Bitcoin would adopt a metallist or even commodity theory approach, since the characteristics of Bitcoin and cryptocurrency best fall under such conceptualisation, drawing its intrinsic value in virtue of their algorithmic scarcity.[189] On the other, theorists that argue that intrinsic value can be endowed on any instrument by a community trusting and circulating it as 'real' money, are generally committed to a state-centric view that excludes the possibility of private fiat money.[190] Lastra keenly observes that "even commodities only become money when they are given that status (whether through custom or legislative fiat), in virtue of which they acquire an exchange value separate to their use-value."[191] In principle, this position mirrors the idea of money as social fact, focusing on the community of users that trust and accept the monetary instrument, imbuing it with a value.[192]

It is incredibly important to realise that the credit theory of money, at its core, and echoing Fox's viewpoint earlier in this section, permits the acceptance of a 'money of account' as money if it is accepted as such by the community of users who offer payment in that 'money of account'.[193] The acknowledgement of the importance of social relations underpinned by trust

[187] ibid. 32.
[188] ibid. 32.
[189] ibid. 32.
[190] ibid. 32.
[191] ibid. 32.
[192] ibid. 32.
[193] Vandezande (n 2). 159.

in the credit theory of money is one the main differences between the functionalist approach explored in the first theme of this section. These social elements, which are said to be anterior to money's functions, were the focus of the first subsections dealing with the second theme of this section. This specific subsection has aimed to further clarify the authoritative function, as suggested by Ingham, that is required in money. This is premised on the understanding that sovereign states are the institutions that are able to maintain the functioning of the 'money of account' and the various media enabling its circulation. Yet, Bitcoin is based on the voluntary community that uses it, rather than an entity or authority initiating the supply and demand of the currency.[194] For Bitcoin, it is argued that this does not stem from a sovereign state, but instead inherently relies on the community's *trust* towards its 'money of account' and the 'monetary space' it creates. As such a credit theory of money that encompasses Bitcoin and other cryptocurrencies still share the essential characteristics we have explored in previous subsections about 'moneyness' but the issue of contention, the role of a sovereign state as the authority in money must be reconsidered, and the role of trust instead, must be brought to the fore. The next subsection will argue that trust plays a far greater role in maintaining the functioning of a monetary instrument as opposed to an authority based on a state. As such, widening the understanding of authority to include these elements of trust provides a more encompassing credit theory of money for the purpose of this thesis.

1.2.4. The importance of trust in monetary systems

Access to money is still hugely relevant today, with HM Treasury recently undertaking a study on the future of cash and digital payments in the economy.[195] Even though the technology and innovation of money continues to proliferate, the high dependency and the importance of its social functions within society ensures that money must remain able to carry

[194] Bjerg (n 3). 62.
[195] HM Treasury, 'Cash and Digital Payments in the New Economy: Call for Evidence' (HM Treasury 2018).

out its functions. This requires trust in money and those controlling and issuing it. Regardless of money's iteration, past or present, its social importance in guaranteeing these functions is achieved through trust and there are many examples of the disastrous consequences should trust in the financial system fail. Bitcoin may well satisfactorily serve the same functions as money, and facilitate transactions, but as opposed to sovereign backed money, it does so by virtue of being a voluntary social construct underpinned by trust in the technology and in the other users within the same 'monetary space'.

Yet widening the need for an authority within Ingham's theory of money in order to include Bitcoin and other cryptocurrencies requires looking at trust in relation to the theoretical elements underpinning its categorisation as money, rather than a general *sense* of trust in the 'money of account' being used. Shapiro acknowledges that the meaning of trust has become opaque and is conceptually chaotic.[196] Yet at its core, most conceptualizations of "trust is said to involve giving discretion to or relying on or being vulnerable to another under conditions of uncertainty or risk."[197] It is argued that there is a distinction between trust in a money asset such as a banknote, or a credit card, and towards a 'money of account', which would encompass the currency unit such as the pound or Bitcoin. The first is based on the functions of the money asset and is influenced by the interrelationships between my objects of enquiry. The second corresponds to trust in a 'currency unit', which if it corresponds to legal tender, then it would express trust towards the financial system of the sovereign state in which that 'money of account' circulates. If it is issued by a private actor, like Bitcoin, then that trust communicates the sentiment of users towards both the value and the architecture of the 'money account' within its defined 'monetary space'. Trust in, and the interactions between money asset and

[196] Susan Shapiro, 'The Grammar of Trust' in Jocelyn Pixley (ed), *New Perspectives on Emotions in Finance: The sociology of confidence, fear and betrayal* (1st edn, Routledge 2013). 99.
[197] ibid. 100.

monetary system for each of my case studies will play a crucial role in the following chapters when we delve into the relations between my objects of enquiry. But for the purpose of this chapter, trust is seen as embodying the impersonal social relations that underpin the key elements of money.

In contrast with Ingham, who believes that credit and money are not separate, Carruthers' claims there is a distinction between credit and money which is based on the identification of credit involving 'personal trust' between agents.[198] More precisely between a bank and a borrower. However, it is argued that personal trust is not central to the monetary system and only forms a small part in the wider trust relations underpinning the key elements of money. Indeed, even though personal trust is a small link in the wider system of money production in a capitalist system, Ingham argues that it is impersonal trust that enables monetary systems to function and continue to be accepted.[199] As we have been discussing in previous subsections, Ingham believes that impersonal trust in money and the system by which it is created is ultimately reliant upon the state.[200] Thus, impersonal trust in modern money is established for Ingham on two levels: as a fundamental component of sovereignty, and on the viability and legitimacy of the state.[201] Indeed, the dichotomy between credit and money previously mentioned can also be resolved by distinguishing personal and impersonal trust. Impersonal trust arises when face to face contact between trustee and beneficiary are unavailable, when "faceless and readily interchangeable individual or organisational agents exercise considerable delegated power and privilege on behalf of principals who can neither specify, scrutinize, evaluate, nor constrain their performance."[202] Modern monetary systems

[198] Carruthers (n 117). 71-72.
[199] Ingham, 'Revisiting the Credit Theory of Money and Trust' (n 115). 133.
[200] ibid. 133.
[201] ibid. 135.
[202] Susan Shapiro, 'The Social Control of Impersonal Trust' (1987) 93 American Journal of Sociology 623. 634.

function because personal trust is transformed into impersonal trust into the social organisations and institutions underpinning money.[203]

Indeed, Ingham argues that trust plays a fundamental role within debt/credit relationships and between money and a sovereign state, indicating that money can only be produced through the state taking over the burden of trust from personal relationships.[204] As we have been exploring in both legal and sociological themes of understandings of money, modern monetary systems do require a source of authority and intermediary whose role is to maintain the integrity of its 'money of account', so that personal trust can indeed be replaced with impersonal trust. Ingham argues that the trust relationships in money involves "two simultaneous relations: between the contracting agents and between these and the issuer of money."[205] Ingham states that it is this triangular relation, which is underpinned by impersonal trust, that enables transactions between strangers and therefore enables the creation and spread of the 'monetary space'.[206] Thus, modern monetary systems are comprised of interconnected 'triangles' of impersonal trust linking a hierarchy of intermediaries (contracting agents). These correspond to credit card issuers, banks, central banks, and states, for fiduciary and *bank money*, but can also encompass cryptocurrencies and Bitcoin.[207] Impersonal trust is therefore the nexus underpinning the social relations of any monetary instrument and processes that constitute money, enabling it to be transmitted and exchanged within its 'monetary space', while maintaining and defining its 'money of account'. The next subsection will now draw together the concepts of 'moneyness', authority, and impersonal trust that have been analysed in previous subsections in order to apply this extended credit theory of money to Bitcoin and

[203] Barbara A Misztal, *Trust in Modern Societies* (1st edn, Polity Press 1996). 52.
[204] Ingham, 'Further Reflections on the Ontology of Money: Responses to Lapavitsas and Dodd' (n 126). 271.
[205] Ingham, 'Revisiting the Credit Theory of Money and Trust' (n 115). 128.
[206] ibid. 128.
[207] ibid. 128.

align it with my other case studies. After doing so, it will clearly articulate the conceptual understanding of money this thesis will adopt.

1.2.5. Bitcoin and extended credit theory of money

By engaging with various theories of money, this project has systematically broken down the core characteristics needed to align Bitcoin with current definitions of money. The conclusion that this section moves forward is that Bitcoin falls under an extended understanding of the credit theory of money by adopting a wider scope of the meaning of authority. Bitcoin does represent a 'money of account' since it can store and transmit its abstract value. Bitcoins are exchanged through digital forms of 'media of exchange and transmission' within a virtual 'monetary space', which is distinct from one that is established through the authority of a sovereign state, and that can be visualised through the blockchain. Bitcoin is socially created because its monetary interactions and the mining of new coins, are done through transactions between wallets, and based on social relations of debt/credit. Moreover, the value of Bitcoin as a 'money of account' is based on the trust of its users interacting through social relations and in accepting Bitcoin for payment. In so doing, it creates and defines the 'monetary space' in which the 'money of account' circulates. Bitcoin's monetary system is therefore held together by networks of debt/credit relations establishing and maintaining the stability of the 'money of account', but without the use of a centralised or sovereign authority. This stability is achieved through impersonal trust.

The trust towards the various elements of Bitcoin, from its technology, its decentralisation, pseudo-anonymity, record of new coins and all transactions on the blockchain, and accepting goods and services in exchange for Bitcoins, all contribute to transforming personal trust into an impersonal trust in Bitcoin's monetary system. This impersonal trust is

characterised by asymmetric agency relationships because the social relations and trust in Bitcoin is held by a delegated agent or authority, constituting of Bitcoin's monetary system and elements, rather than an authority or issuing bank. This is further supported by the interconnected triangles of impersonal trust linking every agent wishing to make transactions within the 'monetary space' to the monetary system as a whole. Indeed, market agents accepting Bitcoin for payment are themselves linked by asymmetric relationships because they are unable to have direct knowledge of the trustworthiness of the other agent. Moreover, there is a further impersonal trust relationship between them and Bitcoin's monetary system as a whole, enabling the 'money of account' to circulate and therefore maintain, transmit, and store the abstract value that is Bitcoin. The value of the Bitcoin is endowed by the *private* community of users that supports it and enables it to circulate. As the key attributes of money identified in the methodology increase, in particular adoptability and acceptability, members and market agents will establish impersonal trust towards the money of account itself: Bitcoin. Although this is usually attributed to the code, or the algorithm present across the decentralised system, this trust is actually directed to its monetary system, its complete ecosystem. Hence aligning my third case study with the private credit theory of money and the extended meaning of authority articulated above.

Consolidating the terminology and the various conceptual definitions used throughout this section regarding money, the following terms will be used throughout the thesis and are worth clearly articulating:

Money of account: a measure of abstract value and the mean of storing and transporting this abstract value. This represents the abstract value of the pound sterling, and of Bitcoin.

Monetary space/ landscape: territory or boundary (which I will assume to encompass both geographical and digital spaces) in which all prices and debts are denominated by a common 'money of account' and in which a 'monetary instrument' circulates.

Medium of exchange and/or transmission: the various media in which a 'money of account' is represented, circulated, and transmitted within its own 'monetary space'.

Monetary system: The networks of social relations, structures and institutions underpinning and maintaining the functioning and integrity of the 'money of account', its circulation within a 'monetary space', and its corresponding 'media of exchange and transmission'.

Monetary instrument: A *specific* medium of exchange and/or transmission which is denominated in a 'money of account', accepted for payment and/or used as a payment method by the community of users using it, and circulating within a defined 'monetary space' as part of a wider 'monetary system'.

Economic/ financial system: The overlap and cumulation of 'monetary systems' and 'monetary spaces' within a country, encompassing all the 'money of accounts' circulating and being accepted for payment within its territory (in this case the UK).

This section has started to bridge an important disciplinary gap in the engagement of different perspectives and definitions in monetary theory. In particular, both themes have aimed to move beyond an understanding of money as the study of a specific corporeal or even incorporeal media issued by an authority or state and described by its functions. Thus, for the purpose of this thesis, *money can be understood as the following definition: an asset which is denominated in a 'money of account' which is accepted as such by the community of users using it through the use of various 'media of exchange and transmission'. Likewise, money is itself a social relation of debt and credit reliant on asymmetrical agency relationships between*

agents and issuers in order to circulate within, and define, its own 'monetary space'. Defining an asset as a 'money of account' is achieved and underpinned through impersonal trust in complex and varied social structures and institutions (the monetary system), widening the original scope of an authority traditionally attributed to a centralised bank or sovereign state. The presence of this extended authority enables the transformation of personal trust into impersonal trust onto the monetary system itself which in turns builds trust towards the 'money of account' and therefore enables it to circulate and become steadily accepted.

Through a critical engagement of two key themes surrounding a conceptual understanding of money, it is argued that all my case studies: banknotes, credit cards, and Bitcoin, now fall under this definition. The exploration of trust has therefore highlighted the common elements applicable to each type of money being explored. More importantly, it has established solid foundations in which to clearly identify a meaning of monetary crime and how money then interacts with regulation. Like all social constructs, money inevitably changes with time, yet how it changes depends as much on law and policy as it does on technology and the economy.[208] Money so described could fall under the provisions of different legal regimes, and this has been further reinforced and upheld by recent decisions from the UK Jurisdiction Taskforce when it concerns Bitcoin. Indeed, throughout this section, I have drawn attention to the importance of regulation, the law, and moneys' relationship to it. Although this has been done on a theoretical and conceptual basis in this chapter, it shows the importance of treating regulation as a separate analytical tool when exploring my objects of enquiry. Yet, the works of Fox, and allusions to state and authority, serve as an interesting preamble to defining regulation and monetary crime for the purpose of this thesis as it highlights the narrower

[208] Spang (n 166). 44.

analysis offered by taking such an approach. Therefore, finding these commonalities, and widening the scope of enquiry present in conceptual understandings of my objects of enquiry can help build a dialogue between disciplines when looking at the interactions between them, whilst providing a unique analytical tool for comparative-historical analysis. It is now crucial to explore the conceptual definitions of monetary crime and regulation for the purpose of this study.

2. Developing an understanding of monetary crime

This section will argue that the activities being analysed within my case studies fall under a definition of monetary crime encompassing actions that pose a level of threat to the functioning of a monetary instrument by abusing or undermining the social organisation of trust relationships present in its functioning. This results in a loss of trust in the monetary instrument within the economic system which might then undermine financial stability. This is critical because these activities can in effect undermine and damage the integrity of the financial system and lead to market agents refusing to accept these forms of money. It is argued that harmful activities towards monetary instruments play a substantial role in affecting the integrity of both the financial system and the monetary instrument itself and it is therefore crucial to elaborate a conceptual understanding of monetary crime to provide a tool not only to enable comparative-historical analysis with understandings of money and regulation, but also to the State as a way to clearly identify and deal with any misconduct that might undermine financial stability.

The literature is in much disagreement over defining exactly what 'crime' is.[209] Many distinctions and frameworks therefore exist to explain crime, which then influences the perspectives and approaches taken by the researcher.[210] As such, this section will draw on these different understandings of 'crime' in order to develop a concept of monetary crime that enables comparison with the other two objects of enquiry. Importantly, this conceptual definition of monetary crime is primarily focused on encapsulating the wide *scope* of activities, both criminal and those that have not been labelled as such, related to the monetary instruments chosen for my case studies. Building upon the previous section where we clarified cryptocurrencies' position in relation to concepts of money, it is worth reiterating the meaning of a monetary instrument as it is intrinsic to this project's understanding of crimes arising out of forms of money. It is a specific medium of exchange and/or transmission which is denominated in a 'money of account', accepted for payment by the community of users using it, and circulating within a defined 'monetary space' as part of a wider 'monetary system'.

Although crimes associated with Banknotes and Credit Cards are subject to academic scrutiny, much of the attention directed towards cryptocurrencies has focused on the various illicit activities that have been facilitated by its features. In particular the Silk Road serves as a stark reminder of such an occurrence.[211] The literature review has highlighted the scope of work dealing with forgery and fraud during their respective timeframes. It also explores how current academic interest on the relationship between Bitcoin and crime has also been increasing, with a particular focus on money laundering and the finance of terrorism.[212]

[209] Wayne Morrison, 'What Is Crime? Contrasting Definitions and Perspectives' in Chris Hale and others (eds), *Criminology* (3rd edn, Oxford University Press 2013). 11.
[210] ibid. 12.
[211] Marie-Helen Maras, 'Inside Darknet: The Takedown of Silk Road' (2014) 98 Criminal Justice Matters 22.
[212] *See for example:* Steven David Brown, 'Cryptocurrency and Criminality: The Bitcoin Opportunity' (2016) 89 Police Journal: Theory, Practice and Principles 327; Angela SM Irwin and George Milad, 'The Use of Crypto-Currencies in Funding Violent Jihad' (2016) 19 Journal of Money Laundering Control 407; Angela SM Irwin and

However, more recently, newspapers have started to identify other criminal activity, such as fraud and theft, arising out of Bitcoin, and the elements and agents surrounding its monetary system.[213] The difficulties faced by regulators, as well as third parties, in limiting criminal activities arising from these technological changes. Moreover, the impact of a widely accepted cryptocurrency on criminal activity has not been explored and it is important to gain a purchase on this before this happens.

To elaborate on this conceptual definition, I will first reflect on the current meaning of monetary crime and highlight how current conceptions of financial crime are too broad in scope to encompass the activities usually associated with money. In this first subsection I will argue that the use of monetary crime is sparse and that its current narrow meaning is not sufficient to encompass the scope of activities needed for this project. In the second subsection, by drawing on the vast literature on the definition of 'crime', I will show that different interpretations of 'crime' can help develop a meaning of monetary crime which also encompasses the activities that are not defined as breach of criminal law and that take the focus away from the perpetrator. Indeed, looking at crime through the lens of social constructionism, social harm, censure, and acts against the norms of society, will help develop a definition of monetary crime that is better positioned to enable comparison, but also that represents the range of activities and misconducts that are deemed socially injurious and that might not fall under the statute books.

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others, 'Money Laundering and Terrorism Financing in Virtual Environments: A Feasibility Study' (2014) 17 Journal of Money Laundering Control 50.

[213] *See for example:* Hannah Murphy, 'Police Grapple with Rise in Cryptocurrency Fraud' *The Financial Times* (London, 10 August 2018) <https://www.ft.com/content/f5583d68-9c9e-11e8-9702-5946bae86e6d?accessToken=zwAAAWUpdt-IkdP1WD1onJ4R6NOXAllGuuhubQ.MEUCIQDKx_PitCFME22BlPVG0UXTBFXQZFfbAttBNsaMhPZ-4QIgfVXwLB4TJ-h2-LFq1jVZWbVAL-9IolsgpVXuz3MwHxc> accessed 25 November 2018; Gertrude Chavez-Dreyfuss, 'Cryptocurrency Theft Hits Nearly $1 Billion in First Nine Months: Report' *Reuters* (New York, 10 October 2018) <https://www.reuters.com/article/us-crypto-currency-crime/cryptocurrency-theft-hits-nearly-1-billion-in-first-nine-months-report-idUSKCN1MK1J2> accessed 19 October 2018; BBC News, 'Iceland Police Arrest Suspected Bitcoin Server Thieves' *BBC News* (London, 5 March 2018) <https://www.bbc.co.uk/news/technology-43288495> accessed 25 November 2018.

Finally, in the third subsection, I will revisit Shapiro and bring to the fore the role of trust in maintaining the integrity of monetary instruments and show how monetary crime should take into consideration these social relationships.

2.1. The Narrow Meaning of monetary crime

The different themes in the literature review exploring the variety of crimes *towards* my case studies does not allude to a broad category of offences encompassing the scope of activities and harms that could be labelled as monetary crimes. This subsection aims to begin the discussion in expanding our understanding of this term. It aims to move away from an understanding between money and 'crime' that is associated to *specific* monetary instruments. This term has rarely been used in academic literature in this sense due to the large silence permeating between different forms of money, crime and time. Yet an example of the use of monetary crime can be found in Wennerlind's article. Unfortunately, the purpose of the work is not to *define* the term but to reflect on how various activities, namely forgery that directly affected paper notes, were swiftly punished in order to maintain confidence and promote economic stability. Indeed, it was believed that undermining the trust underpinning these forms of money would be capable of triggering disruptions and transmitting shocks across the financial system. The swiftness and harshness of the state in taking these actions underlay the importance afforded to these emerging monetary instruments. Rather than serving as a definitional benchmark, the article provides an interesting *contextual* and *procedural* starting point for elaborating the conceptual understanding of monetary crime.

Wennerlind's overarching argument is that the legal actions taken in response to these crimes served as a central policy instrument.[214] This follows similar discourse from Handler[215] and McGowen[216] aiming to justify the use of capital punishment in a bid to protect the monetary instruments supporting the UK's economy during the Restriction Period. Wennerlind groups together as monetary crime activities that "challenged the general confidence in the exchangeability of money and consequently damaged the capacity of money to mediate exchange relations."[217] Since the social fabric of society and the economy is inherently constituted of exchange relations, an assault of money was "considered an attack on the entire social form."[218] Thus, it is argued that money manipulation and money tampering, either through clipping, counterfeiting, or forgery, led to stricter criminal sanctions for such activities.[219] My first case study illustrates this.

Before the Restriction Period, the extensive paper monetary system first benefited participants in business and government transactions, before transitioning to the wider public after conversion to gold was suspended.[220] The rise in familiarity and acceptance of bank notes in England that occurred during the Restriction Period has been explored in great detail in the Literature Review.[221] One of the ways in which the government tackled this challenge was to declare certain activities as subject to capital punishment in order to promote trust and

[214] Carl Wennerlind, 'The Death Penalty as Monetary Policy: The Practice and Punishment of Monetary Crime, 1690–1830' (2004) 36 History of Political Economy 131. 158.
[215] Phil Handler, 'Forging the Agenda: The 1819 Select Committee on the Criminal Laws Revisited' (2004) 25 Journal of Legal History 249; Phil Handler, 'Forgery and the End of the "Bloody Code" in Early Nineteenth-Century England' (2005) 48 The Historical Journal 683.
[216] Randall McGowen, 'The Punishment of Forgery in Eighteenth-Century England' (1992) 17 IAHCCJ Bulletin 29.
[217] Wennerlind (n 214). 131.
[218] ibid. 131.
[219] ibid. 132.
[220] ibid. 155.
[221] See: Wray, 'An Irreverent Overview of the History of Money from the Beginning of the Beginning through to the Present' (n 118); Jack Mockford, '"They Are Exactly as Banknotes Are": Perceptions and Technologies of Bank Note Forgery During the Bank Restriction Period, 1797-1821' (PhD Thesis, Hertfordshire 2014).

confidence onto the 'emerging' monetary instrument that was the most *beneficial* to the economy and to social relations at the time.[222] Counterfeiting was therefore viewed as a serious threat, not only to the monetary system but to Britain's national sovereignty and its entire social fabric.[223] Forgery of Bank of England notes were punishable by death or transportation for life during the Restriction Period precisely because the crime undermined trust in the monetary instrument. This was implemented and imposed by the State and upheld by the Courts. Individuals were punished and various offences surrounding the abuse of trust of banknotes, such as uttering, were labelled as substantial wrongdoings and against the norms of society.

Similarly, fraud had the same consequences on the use of credit cards in undermining the use of these new instruments to access money. The various authorities and institutions responsible in preventing and prosecuting fraudulent actions were aimed at punishing those who would commit such crimes. Bitcoin provides another hurdle for conceptually defining this object of enquiry for this project. Indeed, although there are clear links between criminal activities and monetary instruments in regard to my first two case studies, and the role of criminal law in identifying the scope of activities inviting sanction, this is not the case for Bitcoin and cryptocurrencies in general. The narrow interpretation of 'crime' limits the scope of analysis available for activities undermining Bitcoin's monetary system. This can be illustrated by briefly looking back at copper coins during the advent of paper monetary instruments.

The importance of clarifying the conceptual scope of monetary crime is illustrated by Wennerlind, who states that although notes were issued in lower denomination, household

[222] Wennerlind (n 214). 158.
[223] ibid. 158.

transactions were still carried out in copper coins. As opposed to gold and silver coins, and the plurality of paper money present at the time, this form of money received only minor protection from the law.[224] This dichotomy is key. Wennerlind argues that this leniency is a result of authorities only being marginally concerned with the coin's impact on the financial system, allowing them to circulate. Indeed, criminal activities affecting those copper coins was confined and thus had no volatility towards the wider financial markets. The government therefore treated the same monetary crimes, such as clipping and forgery offences, with different levels of regulation and punishment than the instrument said to be serving as the foundation of the financial system.[225] What is important to note is that this disparity of activities being criminalised due their *perceived* impact on the stability of the financial system is at the core for a need of a *level* conceptual understanding of monetary crime.

This is particularly relevant when taking into account activities stretching across my case studies and in particular for the study of cryptocurrencies. As we have also previously established, the state's involvement in monetary systems should not be seen as limited to the control over the quality and quantity of monetary instruments.[226] Rather the state's actions also reflect their efforts to maintain confidence in the exchangeability of money, including criminalising activities that might debauch the monetary system.[227] This statement shows that an understanding of what exactly counts as monetary crime, applicable *regardless* of the specificities of the monetary instrument being looked at, is still conceptually unclear and needs clarification for this thesis' comparative-historical analysis. The term financial crime has

[224] ibid. 156.
[225] ibid. 155.
[226] ibid. 157.
[227] ibid. 157.

traditionally been used in reports and proposals to encompass these activities, but it will be argued that this is no longer sustainable as it is too broad and conceptually uncertain.

2.2. The ambiguity of Financial Crime

As we have mentioned in previous sections, trust in money and the financial system is widely recognised as the crucial foundation for a stable economy and society and fundamental to the relationships underpinning the social relations that constitute money. The relationship between the financial system, and therefore by extension money, and crime has long been the subject of academic attention. The financial crisis showed the consequences should trust in a financial system fail. Academics across disciplines have rallied to identify the various causes of the crash but also to rethink the core elements of banking regulation necessary to avoid future crises.[228] More importantly, there has been a recent focus on establishing a relationship and exploring the connections between crime and the crisis.[229] Indeed, the relationship between crime and the financial crisis, and the activities of individuals and institutions, has often been regarded as having played a central role in causing it.[230] The next paragraphs will explore the literature on 'white-collar crime' and 'financial crime' which have been at the forefront of exploring these relationships, and as such can tighten the conceptual scope of 'monetary crime' for this project. This is particularly important as the types of offences and activities that might fall under the remit of a narrower conception of monetary crime are usually 'labelled' as financial crime. Interestingly, the CPS took the opposite direction and adopted an even wider term in their recent economic crime strategy: 'Economic Crime'. They argued that this definition is broader than terms such as 'financial crime' or 'white-collar crime' to provide a

[228] Sarah Wilson, *The Origins of Modern Financial Crime: Historical Foundations and Current Problems in Britain* (1st edn, Routledge SOLON 2014). 2.
[229] ibid. 2.
[230] David O Friedrichs, 'Wall Street: Crime Never Sleeps' in Susan Will, Stephen Handelman and David C Brotherton (eds), *How They Got Away With It: White Collar Criminals and the Financial Meltdown* (Columbia University Press 2012). 7.

holistic response to specific types of criminality such as fraud against individuals, private and public sector, and money laundering for example.[231] Yet this wider taxonomy and lack of clear guidance and allocation of funds has been heavily criticised in recent academic circles and conferences.

Geis argues that the economic meltdown of 2008 focused criminological attention on 'white-collar crime', in doing so, an examination of the debate regarding definitions of these types of crimes has traditionally tended to concentrate on the status of offenders rather than the legal standing of the behaviour of the criminal activity.[232] Sutherland penned the earliest definition of 'white-collar crime' and sparked much controversy when it was introduced in the 1940s when he stated that 'white-collar crime' was an activity '*committed by a person of respectability and high social status in the course of his occupation.*'[233] The focus on perpetrators rather than the activity cause much controversy in aiming to redefine 'white-collar crime' in its changing, technological landscape. Geis argues that an updated definition, moving away from much of the controversies surrounding Sutherland's definition is offered by Reiss and Biderman. For them, 'white-collar crime' can be understood as "violations of the law to which penalties are attached that involve the use of the violator's position of significant power, influence or trust in the legitimate economic or political institutional order for the purpose of illegal gain, or to commit an illegal act for personal or organizational gain."[234] Indeed this stance is supported by other authors such as Shapiro that argues that defining crimes by the characteristics of their perpetrators precludes the possibility of exploring the relationships

[231] CPS, 'Economic Crime Strategy 2025' (CPS 2021) <https://www.cps.gov.uk/publication/economic-crime-strategy-2025>.
[232] Gilbert Geis, 'The Roots and Variant Definitions of the Concept of "White-Collar Crime"' in Shanna R Van Slyke, Michael L Benson and Francis T Cullen (eds), *The Oxford Handbook of White-Collar Crime* (1st edn, Oxford University Press 2016). 25.
[233] Wilson (n 228). 22.
[234] Geis (n 232). 35.

between 'monetary crime' and other variables.[235] By doing so, it moves away from a conception of 'white-collar crime' as being one depending on the status of the perpetrator, yet also goes further from Reiner's anchored concept of crime as breach of criminal law by arguing that 'white-collar crime' should embrace law violations that are not necessarily dealt with in criminal courts or that require criminal conviction.[236] This is useful in exploring and widening the scope of 'monetary crime' in encompassing potential activities and offences that the technology of cryptocurrencies may facilitate in the future, while also hinting at the widening scope of the meaning of regulation, and regulatory sanctions. Further discussion is therefore required in order to clarify which criminal act would 'count' as 'white-collar crime', and how does this then relate to offences against money in its different forms.

When focusing on the criminal act itself, Cliff et al pointed out that in an attempt to identify a consensus as to the elements that need to be present to satisfy the concept of 'white-collar crime', the lack of direct violence against the victim was a critical element.[237] Furthermore, an expanded definition, illuminating the work mentioned above by Geis, but also echoing some of the attributes established by Reiner was proposed by Cliff et al. For them, 'white-collar crime' should be defined as "illegal or unethical acts that violate fiduciary responsibility of public trust, committed by an individual or organization, usually during the course of legitimate occupational activity, by persons of high or respectable social status for personal or organizational gain."[238] Yet, just like Geis previously, Cliff et al are keen to point out that there is no such thing as the "right" 'white-collar crime' definition.[239] Complicating

[235] Susan Shapiro, 'Collaring the Crime, Not the Criminal: Reconsidering the Concept of White-Collar Crime' (1990) 55 American Sociological Review 346. 347.
[236] Geis (n 232). 36.
[237] Gerald Cliff and Christian Desilets, 'White Collar Crime: What It Is and Where It's Going' (2014) 28 Notre Dame Journal of Law, Ethics & Public Policy 481. 486.
[238] ibid. 487.
[239] ibid. 487.

this task is the rapidly evolving nature of the crime, and the fast spread of technology in facilitating and making accessible the skills to perpetrate its activities.[240] The access to these new tools moves the image of 'white-collar crime' beyond the highly placed executive to anyone with computer skills able to engineer the activities undermining the trust in the settled order of society.[241] Yet, this is still problematic when looking at activities associated with money as the focus should not be on perpetrators. Despite the lingering conceptual uncertainty regarding definitions of financial crime, it *is* being used in most reports and proposals as a 'catch all' term for activities that do fall under other headings that are conceptually more certain such as money laundering or the finance of terrorism, even though those terms could also be encompassed within understandings of financial crime…[242] It is argued that exploring misconducts and activities that are directly associated with money, and the importance, and impact, these actions could have on financial stability, further justifies a repositioning of a clear meaning of monetary crime.

The unequal treatment of monetary instruments, firstly, in their classification as money; secondly, in the types of activities (monetary crimes) undermining their acceptance and trust; and thirdly in the disparity in regulation protecting both users and the forms of money themselves; represent a key theme permeating throughout this thesis. This chapter serves as the *conceptual* foundation enabling the distinctions arising between money, monetary crime, and regulation to be revealed and compared. More specifically for this section, the term monetary crime has only been explored through a narrow lens. This is problematic however, since the term's associations with policy instruments, statute books, and capital punishment, aligns this concept with the most frequent and applied definition of crime linking it to substantive criminal

[240] ibid. 523.
[241] ibid. 523.
[242] HM Treasury (n 75). 3.23

law.[243] This approach clearly emphasises that acts should not be considered as crime until they are made such by the authorities of the state.[244] As we will explore in more detail in the following subsection, I argue that this does not represent the full scope of activities directly affecting monetary instruments, and as such this narrow conception of monetary crime needs further clarification. The next subsection will therefore explore different meaning of crimes in order to develop a conceptual understanding of monetary crime.

2.3. Widening the scope of 'crime'

Similarly to defining money, doing so for crime is also an arduous task. As Reiner explores in his book, conceptions of 'crime' vary greatly and can be defined in different ways. They can be legally based, draw from social constructionist perspectives and derive from moral codes.[245] Reiner develops the idea that 'crime' is an 'anchored' concept, by which there is a pluralism, and a necessity for, various definitions of the concept of 'crime'.[246] Yet, these different conceptions depend on the social institutions, policy debate, and even academic discourse being analysed.[247] This presupposes that various definitions of 'crime' coexist and are adopted depending on the analysis being undertaken. The value of Reiner's work is that this anchored concept can be aligned with other key understandings of 'crime'. Indeed, in a first instance, the notion of 'crime' can be described as those actions that breach criminal law.[248] From a second instance, the diversity and ambiguity of other conceptions of 'crime' can be derived and expanded from this 'traditional' understanding.[249] Indeed, the legal notion of crime is only one of the several competing conceptions which it is anchored in the power of

[243] John Muncie, 'The Construction and Deconstruction of Crime' in John Muncie and Eugene McLaughlin (eds), *The Problem of Crime* (2nd edn, SAGE Publications Ltd 2001). 10.
[244] ibid.
[245] Robert Reiner, *Crime: The Mystery of the Common Sense Concept* (1st edn, Polity 2016). 17.
[246] ibid. 25.
[247] ibid. 25.
[248] ibid. 25.
[249] ibid. 25.

the state.[250] 'Crime' as breach of criminal law will briefly be explored in the following paragraph.

Muncie summarises that the legal concept of crime presupposes that legal sanction through court processes and practices must be pursued before a crime can be formally established to have occurred.[251] Indeed, "no behaviour or individual can be considered criminal until formally decided upon by the criminal justice system."[252] As such "crime exists only when the label and the law are successfully applied to an individual's behaviour."[253] It is argued that aligning this conception of 'crime' to my project would result in a limited scope. It would only encompass activities that are deemed to be legal violations. Moreover, this approach relies heavily on an authority imposing criminal proceedings on these specific activities.[254] This approach in determining criminal activities overlaps with my third object of enquiry which includes criminal law as a form of regulation, both as encompassing regulatory sanctions, but also as criminal sanctions. Indeed, the ambit of criminal law should only be used to censure persons for substantial wrongdoing.[255] The proliferation of property offences in the 18th Century underlines the historical rise of this conception.[256] Capital punishment was imposed to reflect the tighter conceptions of property rights displacing "traditional networks of obligation and entitlement."[257] This had the purpose of further establishing that an individual had committed an offence against a state-defined rule of law rather than being judged against notions of correct conduct, or harm against other individuals.[258]

[250] ibid. 14.
[251] Muncie (n 243). 10.
[252] ibid. 10.
[253] ibid. 15.
[254] ibid. 10.
[255] Reiner (n 245). 44.
[256] ibid. 34.
[257] ibid. 34.
[258] ibid. 33.

Legal based definitions tend to remove law from the social, political and economic terrain and divorce the criminal process from its social context.[259] Questions about which actions society decides requires a legal response, and what determines whether such a legal response should be criminal or civil, still remain.[260] This legal understanding of crime therefore neglects "the basic issues of why and how some acts are legislated as criminal, while others may remain subject only to informal control or rebuke."[261] For this conception of 'crime', being called a criminal is a status conferred by the legal and political processes of the state and does not mean that it is immoral.[262] Another key problem of this legal conception of crime is that the criminal process underpinning this understanding deems all people equal before the law, however, the reality of capitalist social relations is that they are constructed on a basis of fundamental inequality.[263]

Although defining the true meaning of 'crime' is part of a larger debate that is outside the scope of this thesis, it is worth going over key conceptual positions in order to develop monetary crimes' position within this theoretical landscape. As such, rather than focusing on the criminal activities defined by the statute books, two key additional themes arise outside this perception of 'crime'. The first concerns the lack of engagement with social, historical and economic context behind the activities arising out of the monetary instruments being analysed. The second deals with the different perceptions of harm afforded to these activities by the wider public, institutions, and government. It is for this reason that monetary crime cannot be understood solely as breach of criminal law for this project because there are complex political

[259] Muncie (n 243). 11.
[260] ibid. 11.
[261] ibid. 11.
[262] Morrison (n 209). 15.
[263] Reiner (n 245). 194.

and economic forces that shape how 'crime' is defined.[264] Indeed, 'traditional' legal concepts of 'crime' systematically excludes "notions of harm, deviance, anti-social conduct, injustices and rule-breaking."[265] Although narrow in scope, this 'traditional' approach to defining criminality by reference to law is not in itself problematic in defining crime. But for the purpose of this project, it is necessary to move beyond this legalistic approach of law breaking in order to acknowledge a wider range of activities and misconducts that may not be in the statute books but still cause a level of harm. More specifically, this objective framework of analysis does not encompass the historical processes and mechanisms taken by various actors in dealing with the variety of activities aimed at undermining a monetary instrument's functioning and acceptability. Other conceptions will now be explored in order to place monetary crime within a wider framework of 'crime' and enable analysis across both time, and my case studies.

The widening scope of 'crime' from this legal perspective should be repositioned. Morisons argues that "crime is some action or omission that causes harm in a situation that the person or group responsible 'ought' to be held accountable and punished, irrespective of what the law books of a state say."[266] Although a vast array of behaviours can be deemed 'deviant' or 'criminal' because they violate legal or normative prescriptions, there is no common behavioural or moral denominator that ties all of these acts together.[267] Rather crime is viewed as a consequence of social interactions.[268] What is important here is not what the state and the criminal justice process *decides* what constitutes as crime, but it is how these behaviours are perceived and evaluated by others, that constitutes crime.[269] This aligns itself with a conceptual

[264] Morrison (n 209).
[265] Muncie (n 243). 22.
[266] Morrison (n 209). 12.
[267] Muncie (n 243). 15.
[268] ibid. 15.
[269] ibid. 15.

framework of 'crime' being a social construction.[270] This first step in widening the scope of the meaning of 'crime' beyond criminal sanctions is particularly important for the wide range of activities that may undermine the credibility and trust of the monetary instruments chosen for my case studies. I will develop the concept of crime as social construct and social harm in the following paragraph, then apply them to this project's understanding of monetary crime.

Muncie argues that a social constructionist understanding of crime moves the discussion away from behavioural questions and towards more definitional issues.[271] Indeed, under this framework, 'crime' is relative to social and historical circumstances and is therefore not interested in locating the causes of crime and deviance in social situations but in "examining both the processes of rule creation and law enforcement."[272] Crime as a social construct can be understood as the complex process by which social control is able to construct a public identification of certain people as criminal, and "how social reaction and labelling are able to produce and reproduce a recognisable criminal population."[273] This is developed by Reiner, who views crime as an expressive concept embodying censure.[274] For him, "to call something a crime is to register disapproval, fear, disgust or condemnation in the strongest possible terms and to demand urgent remedies- but not necessarily the pain of criminal penalties."[275] Thus 'crime' can also be understood as the moral condemnation against some threatening harm that may or may not be subject to criminal law.[276] Based upon this perspective, monetary crime should be widened to encompass *harmful* activities against a monetary instrument, regardless

[270] Morrison (n 209). 12.
[271] Muncie (n 243). 16.
[272] ibid. 16.
[273] ibid. 16.
[274] Reiner (n 245). 14.
[275] ibid. 14.
[276] ibid. 15.

of whether they are covered by the statute books, because there is a clear and labelled social disapproval of such misconducts which may not be subject to criminal sanctions.

Pulling these threads together, Reiner argues that an understanding of crime should be denoted on the basis of censure and sanctioning, which focuses on the relationship between criminal law, morality and harm.[277] This is also developed by Muncie, who states that it is necessary to place "crime within a broader context of social harm in which the visible and the obscured, the legally recognised and the legally sanctioned can be included in a comprehensive, continuous and integrated vision of criminal and harmful acts."[278] Pulling these threads together, Reiner argues that an understanding of crime should be denoted on the basis of censure and sanctioning, which focuses on the relationship between criminal law, morality and harm.[279] This is also developed by Muncie, who states that it is necessary to place "crime within a broader context of social harm in which the visible and the obscured, the legally recognised and the legally sanctioned can be included in a comprehensive, continuous and integrated vision of criminal and harmful acts."[280] Authors such as Hillyard and Tombs[281] have gone so far as to argue that the notion of crime should be replaced with that of social harm and orienting social policy towards harm reduction. Paoli and Greenfield agree with the centrality and importance of harm in relation to crime, but also argue that criminalisation and prosecution are just one possible strategy for dealing with harm, and not necessarily the best.[282]

[277] ibid. 46.
[278] Muncie (n 243). 20.
[279] Reiner (n 245). 46.
[280] Muncie (n 243). 20.
[281] Paddy Hillyard and Steve Tombs, '12- Social Harm and Zemiology' in Alison Liebling, Shadd Maruna and Lesley McAra (eds), *The Oxford Handbook of Criminology* (6th edn, Oxford University Press 2017).
[282] Letizia Paoli and Victoria A Greenfield, 'Harm: A Substitute for Crime or Central to It?' in Avil Boukli and Justin Kotze (eds), *Zemiology: Reconnecting crime and social harm.* (Palgrave 2018). 57.

As such Reiner's understanding of 'crime' as censure, *derived* from an anchored concept of 'crime' as breach of criminal law, effectively "connotes an intermediate level of threat to norms shared within a fundamentally settled order."[283] Farmer elaborates on this by stating that any discussion of the meaning of 'crime' must thus be set against this institutional backdrop and the interests that it serves.[284] Indeed, the conceptual reach of monetary crime can be narrowed to encompass specific threats against monetary systems, which would then impact the financial system, society, and cause public harm. Although, the definition of harm is obviously morally and socially contentious, it is argued that adopting an understanding of crime based on zemiologist concepts has greater ontological reality than 'crime'.[285] This conception opens the discussion of what should or should not be sanctioned, and in what ways.[286] As Reiner points out: "many activities that are treated as crime by criminal law are widely regarded as harmful."[287] The common feature uniting criminal law and harm is the social reaction of censure.[288] Indeed, there are serious harms that are committed with "relatively impunity by the powerful and privileged"[289] that should be regarded as seriously.[290]

These last paragraphs have drawn on Reiner, Muncie and Morrison to explore the conceptual debates surrounding the meaning of 'crime' in order to establish a wider scope of activities that would fall under the remit of this project's conception of monetary crime. In particular, this understanding refers not to particular behaviours, but to the social and political processes whereby those actions are subjected to criminalisation.[291] This is notably important

[283] Reiner (n 245). 14.
[284] Lindsay Farmer, 'Crime: The Mystery of the Common Sense Concept Book Review' (2016) 17 Criminology and Criminal Justice 358. 359.
[285] Muncie (n 243). 21.
[286] Reiner (n 245). 64.
[287] ibid. 16.
[288] ibid. 39.
[289] ibid. 16.
[290] ibid. 16.
[291] Muncie (n 243). 23.

when looking at how certain activities undermine particular monetary instruments *over* time. By labelling activities as monetary crimes, it therefore acknowledges the context and the process in which these activities become harmful in respect to money, how it impacts that specific monetary system, then ripples onto the financial system as a whole. This is reinforced by the notion of censure incorporating the breadth of activities causing serious harm but that are not criminalised.[292] Breach of criminal law should not be seen as the barometer deciding what activities have been criminalised, rather *censure* through criminal sanction should be seen as a tool within a wider toolbox available to policymakers in managing the risk posed by these activities.

This widened scope of 'crime' as censure is particularly important when aligning it to the conceptual understanding of monetary crime and then applying it to my third case study of cryptocurrencies. Harmful acts that target this specific monetary instrument may not have been clearly identified. The impact of any disruptions within Bitcoin's monetary system have had little perceived impact on the wider economic system. This results in the scope of both regulation, and criminalisation of certain activities, being overlooked or relegated to current offences. The next paragraph will expand on this point.

It is argued that actions made against the norms of a *community of users*, that are treating a monetary instrument as money can also align itself with this understanding of monetary crime regardless of whether these activities are seen as causing any public harm. Due to this, the lack of an identifiable authority within Bitcoin's monetary system that is able to implement and enforce any 'criminal' sanctions that go against the norms of the community

[292] ibid. 23.

using it also causes further complications in encompassing Bitcoin within this framework. It is for this reason that cryptocurrencies must rely on current regulatory structures, legal regimes, and pre-existing activities already 'labelled' as crime. Yet, as opposed to the analysis of my first two case studies, this lack of directly identifiable criminal activities undermining cryptocurrencies can become an analytical advantage when nestled under a broader conceptual understanding of monetary crime. As the methods chapter has demonstrated, it is believed that engaging with the heterogenous contexts of the relations between monetary crime and money at different points of time, using a variety of examples, will provide better perspectives on these relationships and how criminal activities may adapt and change in order to tackle new monetary systems and instruments. As such, a concept of monetary crime needs to encompass any future eventuality, and any activities that may fall a stone's throw away from this assumption.

I would argue that Bitcoin falls under such remit. Although it is not as widespread or systemic as the other case studies, and its *current* impact on the economic system is not as pronounced, future monetary instruments are increasingly likely to adopt the features of Bitcoin. A cryptocurrency without Bitcoin's limitation in terms of scalability and accessibility could cause public harm onto existing monetary systems and the financial system. Criminal activities, not limited to fraud and forgery, but to Bitcoin as a whole; encompassing exchange centres and other key elements required in its functioning and circulation, are therefore worth comparing with previous iterations. This enables my third case study to be encompassed within this understanding of monetary crime for this project and thus permits analysis. Although we have shown the need for a conceptual understanding of monetary crime that encompasses violations that are not necessarily dealt with in criminal law, the importance of trust must be brought to the fore in order to *facilitate* comparison between monetary instruments. This builds

upon the meaning of money defined in the previous section, which was necessary in order to operationalise the meaning of monetary crime.

2.4. The importance of trust in narrowing the scope of monetary crime

We have already explored the importance of trust in relation to money and drawn on the work of Shapiro to establish that the social debt/credit relations that constitute money can be understood as triangular asymmetrical relationships. Yet this notion of trust is also useful in bridging the gap between conceptual definitions of 'crime' and 'monetary crime; but also, in quantifying the relationships between money and monetary crime and thus enabling comparative-historical analysis between these two objects of enquiry. A first step in doing so is to draw on Shapiro's further development of the role of trust in 'crime' by looking at "the violation and manipulation of the norms of trust."[293] These social norms are maintained and reinforced by the trustees or guardians of trust who are part of these relationships.[294] In this sense, monetary crime can be seen as not being *about* the actions, or inactions of these guardians, but about the norms of trust underpinning the monetary system and enabling its corresponding monetary instrument to be accepted and circulated.[295] The activities should encompass the actors who undermine or abuse this trust by exploiting the structural vulnerabilities of trust relationships.[296]

Yet mirroring Shapiro's intention to 'liberate' the concept of 'white-collar crime'[297] this thesis will not focus on perpetrators and focus more on the acts themselves. Indeed, drawing from Reiner and Shapiro, *monetary crime can be understood as activities that threaten*

[293] Shapiro, 'Collaring the Crime, Not the Criminal: Reconsidering the Concept of White-Collar Crime' (n 235). 350.
[294] ibid. 350.
[295] ibid. 350.
[296] ibid. 350.
[297] ibid. 357.

the functioning of a monetary instrument by abusing or undermining the social organisation of trust relationships present in its functioning. These activities thus have the ability to generate harm on the community of users accepting the monetary instrument as money since the monetary instrument is essential in maintaining the 'monetary space' and the financial stability in which it circulates. It is therefore a useful taxonomy to encompass the *different* types of activity and misconduct affecting the monetary instrument and the attention they have attracted, rather than treating each money and 'crime' present in each case study as distinct 'elements' to be analysed.

It might be worth giving a few examples of what would fall under such a remit. When looking at the timeframe concerning the Bank of England, the different types of activities that would be labelled as monetary crime, due to the nature of the instrument, would usually revolve around forgery. Such activities would include forging an engraving plate in the likelihood of Bank of England notes, forging a banknote, creating paper that was protected under statute for the issuance of paper money, possession of a forged note, or uttering of a forged note. Yet the theft of a banknote would not count as monetary crime as it does not undermine the functioning of the monetary instrument, its acceptance, and thus impact financial stability more generally. For Barclaycard, these activities would revolve around fraud, but would only cover fraudulent behaviours affecting the card or the credit ecosystem. It could include stealing, copying, or forging a card or cheque used in credit card transactions. It could also include the numerous ways in which individuals used and abused the various elements within the transaction process to evade authorisation and thus obtain illicit gains. Other types of fraud, such as welfare fraud, identity fraud and many others would not fall under the remit of monetary crime. Finally, for cryptocurrencies more generally: money laundering, exchange centre fraud, theft or forgery of wallet custodian data, and other activities, that might not yet be seen as causing harm but that

undermine the stability of the crypto ecosystem, would fall under the scope of monetary crime. Therefore, forgery and fraud affecting *any* monetary instrument would fall under the scope of this thesis' definition of monetary crime and would not be limited to banknotes or plastic cards. The need for the repositioning of monetary crime is also supported by two additional factors: the need to keep up with the various activities and misconducts that are being facilitated by emerging technologies, and the increasingly complex and fragmented forms of regulations underpinning how money functions, is maintained, and circulates within the financial system. This also ties into the wider theme being explored in this thesis about the notion that money and crime should not be understood as a unitary phenomenon.

According to Shapiro. Dealing with these activities is the responsibility of the guardians of trust: institutions, states and other actors, who maintain and limit the erosion and abuse of these trust relationships through various means.[298] This accentuates the challenges of dealing with these criminal activities because it confounds traditional systems of social control and regulation.[299] Throughout this section, criminal law and its sanctions have been used to explain how activities that are understood as 'crime' are dealt with. Yet criminal enforcement should be understood as part of a wider perspective of regulating certain activities of which criminal law is a toolkit in such strategies. It is therefore important to further elaborate the scope and meaning of regulation for this project to permit the analysis between these three objects of enquiry across time. This will be the focus of my third and last section.

[298] Shapiro, 'The Grammar of Trust' (n 196). 115.
[299] Shapiro, 'Collaring the Crime, Not the Criminal: Reconsidering the Concept of White-Collar Crime' (n 235). 346.

3. Plural actors implementing regulation

The legal uncertainty currently surrounding Bitcoin in relation to existing regulatory frameworks stems from a range of complex and fragmented approaches to regulation and the different methods in which monetary instruments and the various actors *necessary* in its operation and stability are already regulated. As such when looking at regulation for the purpose of this thesis, it must be understood from a wider perspective than its suitability to monetary legal regimes, or to responses to criminal activities. Instead, a conceptual understanding of regulation enabling comparative-historical analysis must be understood to encompass strategies adapting and responding to all the challenges that have been highlighted throughout this chapter. The first subsection will look at the current regulatory framework applicable to cryptocurrencies and show that its unregulated position creates uncertainty that needs to be addressed sooner rather than later. It is the *need* for a level playing field between monetary instruments that aligns this unregulated case study, to my other two. Next, I will primarily draw on both Koop et al. and Ogus to explore a conceptual understanding of regulation that incorporates the plurality of actors involved in shaping each of my case studies. This broad conception will look at the relationship between state and non-state actors, and the relationship between criminal law and the criminal justice system as a toolbox within a wider scope of regulation. The subsection will conclude by aligning this project with Koop et al.'s essence-based definition of regulation, enabling all my objects of enquiry to be compared and analysed through heterogenous contexts and across time.

3.1. Bitcoin and Regulatory uncertainty

The literature review has already highlighted the breadth of material currently existing concerning ongoing debates about Bitcoin and its regulation. Articles have focused on regulatory strategies applied to different elements of Bitcoin; either as Bitcoin as a form of

money[300], asset, commodity[301]; the blockchain itself[302]; or the exchange centres between Bitcoin and national currencies[303]. This plural approach in ways of regulating Bitcoin and other cryptocurrencies shows that there is no consensus within regulatory and legal scholarship in how to regulate this emerging form of 'money'.

This links back to the fundamental dichotomy existing between 'traditional' forms of money and emerging ones, which forms one of the core themes permeating throughout this project. Indeed, legal regimes and financial regulators treat monetary instruments differently depending on the importance and value attached to it by governing bodies, but also its supposed impact on the financial system. As such, rather than the current unregulated position affecting the *majority* of cryptocurrencies, there is a rising call for them, and to a certain extent, virtual currencies as a whole, to become aligned with payment services regulations and/or e-money provisions. Crucially, for Vandezande, *e-money* and payment services should at the very least be reorientated to be incorporated within the *same* framework.[304] This would help foster user trust in these new monetary instruments and encourage customer protection and certainty. These notions will be explored in more depth in Chapter 6. These steps would echo the recent advances in money laundering regulation, in particular the EU Fifth Anti-money Laundering Directive (5AMLD), which has taken the positive steps of incorporating cryptoassets, exchange centres, wallet custodians, and other market participants, under its scope. As

[300] Stephen T Middlebrook and Sarah Jane Hughes, 'Virtual Uncertainty: Developments in the Law of Electronic Payments and Financial Services' (2013) 69 The Business Lawyer 263.
[301] Max I Raskin, 'Realm of the Coin: Bitcoin and Civil Procedure' (2015) 20 Fordham Journal of Corporate & Financial Law 969.
[302] Trevor I Kiviat, 'Beyond Bitcoin: Issues in Regulating Blockchain Transactions' (2015) 65 Duke Law Journal 569; Peter Yeoh, 'Regulatory Issues in Blockchain Technology' (2017) 25 Journal of Financial Regulation & Compliance 196.
[303] Mohammed Ahmad Naheem, 'Regulating Virtual Currencies - the Challenges of Applying Fiat Currency Laws to Digital Technology Services' (2018) 25 Journal of Financial Crime 562.
[304] Niels Vandezande, 'Virtual Currencies under EU Anti-Money Laundering Law' (2017) 33 Computer Law & Security Review 341. 442.

Vandezande concludes: "If virtual currencies are truly to become a payment or investment means for everyone, they will have to stop teetering on the edge between legality and illegality, and make the risks involved more palatable to a broader audience."[305]

This debate also denotes the rising interest from Central Banks and financial regulatory institutions to align cryptocurrencies with existing frameworks. As the literature review has highlighted, the rise of reports and guidance from the FCA, Bank of England, and HMT has steadily grown.[306] It is for this reason that I would argue that many unknowns remain, creating, arguably, more uncertainty. This ties into the purpose of this section which is to analyse the regulatory approaches taken towards my case studies both in tackling the scope of activities situated within 'monetary crime', but also in supporting market agents and consumers to use and accept monetary instruments.

As we have seen, when discussing the definition of money and monetary crime, reference has been made to an 'authority' and to 'guardians of trusts' in maintaining these monetary systems and building trust in their use and acceptance. In particular much of the discussion in the previous sections has centred around moving away from an understanding of 'authority' as *linked* to a sovereign state. Instead, it has moved towards social fact: a trust and acceptance in relation to the *authoritative functions* corresponding to the social relations maintaining each of my case study's monetary systems. The role of the state is to support the functioning of these processes rather than defining them. For this final section, it is accepted that conceptual understandings of regulation will tend to focus on the state's role in imposing

[305] ibid.440.
[306] FCA, 'Guidance on Cryptoassets - Consultation Paper' (n 9); FCA, 'PERG 3A : Guidance on the Scope of the Electronic Money Regulations 2011' (n 33); HM Treasury, FCA, and Bank of England (n 6).

laws and forms of control over certain activities. Yet, previous sections have placed an emphasis on the importance of 'community of users' and 'market agents' within monetary systems in enabling the circulation of each form of money and the influence non-state actors have in shaping and changing money. This is often not encompassed in traditional understandings of regulation and as such we must now turn ourselves to what is meant by regulation for the purpose of this thesis and how it then interacts with the other two objects of enquiry previously defined.

This section will therefore follow the trend of the previous two sections in advocating for a broader understanding of regulation. This is crucial in comparing monetary systems that have differing levels of regulation imposed on them. From non-regulation in the case of Bitcoin, to severe criminal sanctions in the case of Bank of England notes during the Restriction Period. By elaborating this conceptual understanding of regulation, this project can offer new perspectives on Bitcoin's challenges and offer a purchase on regulatory strategies, informed from historical perspectives, that may be better suited in dealing with protecting the monetary instrument itself, but also any monetary crime that may arise. The next subsection will explore a broader understanding of regulation and how social and economic regulation may play a role in dealing with money and monetary crime.

3.2. Regulation as a shared and interdisciplinary conception

Regulation has acquired a "bewildering variety of meanings"[307] and is a phenomenon that is difficult to define with clarity and precision as "the scope of its enquiry are unsettled

[307] Anthony Ogus, *Regulation Legal Form and Economic Theory* (1st edn, Hart Publishing 1994). 1.

and contested."[308] Koop et al. set out to understand what regulation is?[309] They took a novel approach in order to arrive to a conceptual consolidation of how regulation is perceived within the literature of six social science disciplines.[310] Adopting a concept analysis methodology on a wide scope of articles, they group this data onto two broad understandings of regulation, one narrow, and one broad.[311] This divide in understanding resides on the level of intervention.[312] There seems to be a consensus that regulation is about direct intervention, which "can be defined as the introduction and/or implementation of standards that directly apply to the target behaviour or characteristics of a specified population."[313] There is less emphasis however on whether regulation also incorporates indirect intervention. That is "the introduction and/or implementation of standards that apply to the context in which the target behaviour or characteristics of a specified population are generated."[314] As Koop et al. argue this narrow and broad conception of regulation represent the distinction between pushing an authoritative set of rules, and all the efforts of state agencies and other actors to steer the economy.[315] The broader conception of regulation incorporates both direct and indirect intervention and when adopted moves away from regulation as a distinctive form of governance.[316] As such, this broad conceptualisation of regulation shows that responses to wrongdoing are not just subject to forms of sanctions, traditionally the approach taken by direct intervention[317] but can encompass

[308] Anthony Ogus, 'Regulation and Its Relationship with the Criminal Justice Process' in Hannah Quirk, Toby Seddon and Graham Smith (eds), *Regulation and Criminal Justice : Innovations in Policy and Research* (Cambridge University Press 2010). 27.
[309] Christel Koop and Martin Lodge, 'What Is Regulation? An Interdisciplinary Concept Analysis' (2017) 11 Regulation & Governance 95. 95.
[310] ibid. 95.
[311] ibid. 98.
[312] ibid. 98.
[313] ibid. 98.
[314] ibid. 98.
[315] ibid. 98.
[316] ibid. 98.
[317] ibid. 99.

all sorts of civil and informal responses. Similarly, it establishes state and non-state actors as regulators.[318] This aspect will be explored next by drawing on the work of Ogus.

Ogus states that a traditional definition of regulation corresponds to a "sustained and focused control exercised by a public agency over activities that are valued by a community."[319] However, this excludes the traditional areas of criminal law and the concerns of the criminal justice system and will therefore be expanded later in this chapter.[320] Ogus therefore states that regulation is "fundamentally a politico-economic concept and, as such, can be best understood by reference to different systems of economic organisation and the legal forms which maintain them."[321] This draws parallels with Fox's statement that various legal regimes underpin the functioning of money. As such, Ogus argues that in order to maintain industrialised society, the tension between two systems of economic organisation results in different forms of regulation being introduced.[322]

The first corresponds to a "collectivist system of economic organisation"[323] in which the role of the law is directive, public, and centralised. [324] In the second, a market system, the role of the law is opposite as it is facilitative, private and decentralized.[325] Ogus' framework therefore looks at the extent to which the regulation of particular areas combines the elements of these two systems.[326] The tension and the theories underpinning this understanding of regulation therefore provides a framework in which to evaluate different forms of regulation

[318] ibid. 99.
[319] Ogus (n 307). 1.
[320] ibid. 1.
[321] ibid. 1.
[322] ibid. 1.
[323] ibid. 3.
[324] ibid. 3.
[325] ibid. 2.
[326] ibid. 3.

or predict the pattern of regulation observed.[327] Two categories covering the broad industrial and non-industrial activities of regulation: social and economic will be explored in the next paragraph and highlight the different forms of legal forms that these types of regulation adopt. This will serve the purpose of identifying which type of regulation applies to the responses present in my case studies.

Ogus adopts a broad distinction between 'social regulation' and 'economic regulation' in order to encompass the vast array of activities and legal forms that it covers.[328] 'Social regulation' is particularly crucial for this project as it can be understood as dealing with consumer protection, health and safety, or environment protection.[329] In those respective fields Ogus explores the level of state intervention in private decision-making.[330] Ogus focuses in particular between *information*, *standards*, and *prior approval*, respectively moving from low levels to high levels of intervention.[331] The three ways in which *standards* are also divided is based on the level of intervention: *target standards*, which "imposes criminal liabilities for certain harmful consequences arising from the output."[332] *Performance Standards* requires "certain conditions of quality to be met at the point of supply, but leaves the supplier free to choose how to meet those conditions."[333] *Specification standards* compels the supplier to employ certain production methods or materials.[334] The overarching goal of regulatory standards is the balancing of the total net benefits of the product, service, or activity in respect to unwanted losses.[335]

[327] ibid. 6.
[328] ibid. 4.
[329] ibid. 5.
[330] ibid. 150.
[331] ibid. 151.
[332] ibid. 151.
[333] ibid. 151.
[334] ibid. 151.
[335] ibid. 153.

This is particularly important for the impact that 'social regulation' can have on the spheres of monetary crime and money for this project, as it encapsulates the wide range of injurious or socially harmful activities that may arise from these technological developments. More than just regulation as breach of criminal law, combatting fraud and forgery, through various means, can be seen as a way to protect the consumer, which is often used in conjunction to specifying mandatory product and service standards for monetary instruments and/or institutions.[336] These are just some of the strategies adopted by various actors to protect 'traditional' monetary instruments, the financial system, and build trust towards the monetary system as a whole. This can also include low level regulatory forms such as 'private' regulation, or regulatory instruments such as licenses.[337] This approach ultimately facilitates the engagement with the legal uncertainty facing Bitcoin and how the law should approach the range of activities falling under the scope of monetary crime, while also protecting and encouraging the use and functioning of forms of money.

Moreover, Ogus' second distinction: 'economic regulation', does not directly affect this project as it mainly concerns monopolies and competition law, but allusion to it will be undertaken throughout my chapters, in particular to the early days of Barclaycard when it was the only Bank providing such a service. This type of regulation provides a substitute for competition in relation to natural monopolies.[338] Types of regulation can take different legal forms, and these will be explored next, with a focus on state intervention.

[336] ibid. 8.
[337] ibid. 5.
[338] ibid. 5.

Forms of regulation vary from hard to soft, and these can be enacted by private or public actors or combinations of both.[339] Ogus focuses on state intervention, defined here in the sense of public law intervention, and categorises them as three mandatory public law obligations: 'command and control', 'criminal law' and 'incentive regulation'.[340] In this case 'command and control' would encompass legislation which may render those failing to comply with its obligations with sanctions, either civil or criminal.[341] 'Incentive Regulation' can be understood as regulatory instruments which "are used to secure behavioural change by creating financial or other incentives."[342] Finally, it is worth noting that there is a distinction between 'command and control' regulation underpinned by criminal sanctions and 'criminal law' since there is a difference between mainstream criminal offences, namely offences against the person, property, and the public order, commonly known as *mala in se* and regulatory ones, the sanctions imposed by 'command and control' regulation, but which are also formally part of 'criminal law' (*mala prohibita*).[343] These concepts overlap and an understanding of 'Criminal Law' for the purpose of regulation should therefore be on a spectrum between those two concepts.[344]

Indeed, while mainstream crime may involve utility gains, such as financial profit, the reduction of its harm does not arguably produce social benefits. In contrast, regulatory contraventions arise from activities that are deemed socially beneficial.[345] This distinction is not always easy to apply, and activities concerning money can be seen to fall within both concepts of this spectrum, and as such it is best to treat this distinction as fluid.[346] The role of

[339] Ogus (n 308). 27.
[340] ibid. 29.
[341] ibid. 29.
[342] ibid. 29.
[343] ibid. 29.
[344] ibid. 29.
[345] ibid. 29.
[346] ibid. 29.

'Criminal Law' in achieving this should not be confused with the criminal justice system, which is a form of regulation in itself. The 'Criminal law' underpinning 'social regulation' is enacted by the state who has recognised that maintaining the functioning of certain activities are crucial, and the abuse of these activities are injurious to the market and society as a whole.

This reflects the meaning of regulation which involves control over the activities that are valued by the community.[347] This is clearly echoed within my project where each of my case studies have instances where certain activities are detrimental to their monetary instruments, and the state enacts regulation or criminal sanctions in order to solve these problems in conjunction with the variety of actors involved in controlling and enabling the circulation of the monetary instrument. According to Ogus, this mirrors law's principle function as one of deterrence, in that the threat of penal sanctions, or the gallows in the case of forgeries, is intended to induce compliance with the law.[348] It is therefore necessary to look more closely at the role played by the criminal justice system on the regulatory enforcement process in order to better understand the distinctions between both 'command and control' and 'criminal law' from regulatory agencies and its relations with private institutions.

As noted above, not only does the criminal justice system enact its own form of regulation through the courts and case law, but it also plays an important role in regulatory enforcement. There is a huge variety in the methods and practices of enforcing regulations.[349] Braithwaite highlights an enforcement pyramid that increases the severity of the sanctions from

[347] ibid. 29.
[348] ibid. 30.
[349] ibid. 30.

agencies towards actors and that can be adapted to different regulatory arenas.[350] In terms of regulation of specific sectors, Braithwaite also describes that self-regulation should be the starting point of enforcement strategies, with 'command and control' regulation with punishment at the top.[351] Yet in the United Kingdom, the starting point for sanctions for regulatory contraventions, tend to be the use of criminal sanction, with warnings, disqualifications, fines and other informal and civil penalties also available.[352] This was recently reviewed in great detail in 2006 by Richard Macrory[353] and subsequently by the Law Commission[354] in 2010 in order to decrease the reliability of criminal offences, created through primary and secondary legislation, in order to maintain standards of conduct in a specialised area of activity.[355]

3.3. Adopting a broad conceptualisation of regulation

As we have been developing in the previous subsections, the meaning of regulation should not be confined to regulatory enforcement and should include 'private' regulation. Koop et al. devised an 'essence-based' conception which is wider in scope.[356] Thus, "regulation can be defined as *the intentional intervention in the activities of a target population*."[357] The intervention can be direct and/or indirect, the activities can be economic and/or non-economic, the regulator may be a public-sector or private-sector actor, and the target of regulation may equally be public-sector or private-sector actors.[358] This definition does not focus solely on public law intervention but enables to look at the interaction between state intervention,

[350] Ian Ayres and John Braithwaite, *Responsive Regulation: Transcending the Deregulation Debate* (1st edn, Oxford University Press 1992). 36.
[351] ibid. 39.
[352] Ogus (n 308). 31.
[353] Richard B Macrory, 'Regulatory Justice: Making Sanctions Effective' (2016).
[354] The Law Commission, 'CRIMINAL LIABILITY IN REGULATORY CONTEXTS: An Overview' (The Law Commission 2010) Consultation Paper No 195.
[355] ibid. 1.9.
[356] Koop and Lodge (n 309).
[357] ibid. 104.
[358] ibid. 104.

explored in the paragraphs above, private actions and/or a combination of the both. Even by adopting this wider understanding of regulation, the regulatory strategies being analysed in my case studies can still fall under Ogus' theoretical framework. Indeed, when analysing regulation in relation to monetary crime and money, my project concerns itself with activities under both collectivist and market-based systems of economic organisation, captures the tension between public and private forms of regulation, and takes varied legal and non-legal forms defined by *social* and *economic* types of regulation. This can clearly be seen in the various legal frameworks present within monetary systems: consumer protection, money transmission (e-money, payment services), financial services and financial instruments, criminal law, money laundering, financial crime, institutional supervision, supra-national guidelines for standardisation of approaches, monetary policy to maintain financial stability, legal tender laws, and common law. These complex, overlapping and yet fragmented frameworks should be understood as a toolkit to deal with emerging issues. As this chapter has been arguing, situating a clear taxonomy of monetary crime *within* this toolkit and framework might facilitate the establishment of legal certainty across monetary instruments and help deal with the challenges posed by injurious behaviours that might have affect financial stability.

Thus, for the purpose of this thesis, *regulation can be understood as originating from a variety of actors, not just the state, such as private institutions, organisations, and even private citizens. They are all able to enact social control through different means in order to prevent and/or limit crime in their role as guardians of trust of the monetary system they have themselves defined in order to protect activities that are valued by the community of users, enabling the monetary instrument to circulate and become accepted. The form of regulatory strategy involved at each stage of monetary innovation therefore involves the variety of choices made by the different actors in protecting the activities crucial to the functioning of the*

monetary instrument, either through criminal sanctions or through other means, in order to maintain trust in the social relationships underpinning the monetary system.

This definition therefore allows to distinguish between instances of regulation and instances that do not fall into that category, such as non-intentional intervention, or where no intervention is involved, and enables me to fully explore the factors arising out of my case studies in relation to the other two objects of enquiry.[359] This broad approach enables me to look at the variety of responses from actors affected by monetary crimes, including private ones, and explore any of the steps that they have taken in order to deal with these challenges. Traditionally, this sort of analysis would be focused on specific actors and their impact on a specific activity, such as the Police, the Courts, or the law in dealing with the crimes and offences against the form of money analysed. This can be seen in much of the literature that currently exist for my case studies and of which a critical engagement can be found in my literature review earlier in this project. A prime example for this is Handler and McGowen's accounts of how the increase of forgery, the criminal sanction for forging banknotes, resulted in increasingly severe punishment for the offence and its enactment within the Bloody code.

4. Conclusion

In defining the conceptual understandings of my objects of enquiry, Bitcoin and the advent of other types of cryptocurrencies have served as a catalyst in challenging the traditional meaning of these concepts and helped operationalise the spheres in which to analyse my case studies in relation to a new understanding of monetary crime alongside this project's remit of money and regulation. Maurer et al. stated that "Bitcoin is meaningful and valuable not so

[359] ibid. 104.

much as an actual complementary or alternative currency, but instead as an index of much broader discussions over the nature of money, credit and capital in the world today."[360] Ultimately, it is not the anonymity or the cryptography that makes Bitcoin novel in conversation about the nature of money, it is the value that comes from the aspirations of Bitcoin's community of users.[361] In particular, in embedding their trust in the monetary system itself.[362]

Moreover, the very moral foundation of Bitcoin's community, a mistrust and a need to move away from sovereign authority and centralised systems, has framed the conceptual understandings of this project onto a wider discourse of the role of the state in defining these key elements in relation to money. This results into two key notions permeating throughout the definitions of each of the objects of enquiry: an acknowledgment of the role and influence of non-state actors that should be included into the analysis, rather than focusing solely on state actions, and secondly, highlighting the essential nature of trust as the foundation of these definitions. As such, the first section has shown that money for the purpose of this thesis arises out of social fact based on the community of users accepting and circulating the monetary instrument, instead of being defined as money by an authority, or because it fulfils economic functions. This section further argued that an extended understanding of Ingham's credit theory of money without the need of a sovereign state as the authority can be applied across the different case studies, including Bitcoin. The second section dealt with the meaning of monetary crime. Knowing the core characteristics of money that apply to Bitcoin, the section began by focusing on 'crime' as infraction of criminal law, showing that analysing my case studies within this narrow interpretation would not encompass the injurious and harmful

[360] Maurer, Nelms and Swartz (n 128). 263.
[361] ibid. 263.
[362] ibid. 273.

activities that would undermine trust within the monetary instrument and potential impacts on the financial system. It looked at other conceptions of 'crime' to develop the meaning of monetary crime and narrow its scope towards activities that threaten the functioning of monetary instruments. Finally, the third section looked at widening the scope of regulation to encapsulate actors and forms of intervention that are not confined to public law obligations, and showed that both state and private intervention, criminal law, and the criminal justice system can be understood as tools in imposing regulatory strategies in maintaining the functioning and trust of monetary systems.

By clearly articulating these definitions, this chapter has also built upon the methodology explored in the previous chapter by aligning the choice of case studies chosen for comparative-historical analysis with leading theories for each object of enquiry. Their analysis will aim to reveal the factors arising out of the interactions between my objects of enquiry, both within each case study, but also as a whole, in order to gain a better understanding of the evolutionary narrative of money. This is possible because the definitions stated in this chapter share the same conceptual understanding across time regardless of the heterogenous contexts of my case studies. By doing so, new perspectives and a purchase on how to deal with the challenges of emerging forms of money can be offered. Indeed, the extended understandings offered in this chapter for this project's objects of enquiry can only enrich our understanding of the processes and mechanisms in which money evolves and/or adapts in response to monetary crime and regulation. As such, anchored by the same understandings, the next three chapters will analyse the factors arising from how the monetary instruments in each of my case studies responded to the activities abusing or undermining the trust relationships undermining their functioning, acceptance and circulation, beginning with Bank of England notes during the Restriction Period.

CHAPTER 4: BANKNOTE INNOVATION AND THE QUEST FOR THE INIMITABLE NOTE

This first analytical chapter will focus on the interactions between the changes in the technology of banknotes during the 18th and 19th Century, and monetary crime, with a particular focus on the forgery of Bank of England notes. This chapter will not only look at historical perspectives in order to look forward, but it will also identify and contextualise the difficulties and challenges faced by Bank of England notes in relation to monetary crime. This chapter will seek to determine the extent to which the innovation of money within my first case study of Bank of England notes was influenced by the crimes undermining its stability and issue. By looking at this relationship we can uncover and establish the reasoning behind the adoption of new technologies in banknote production. Moreover, this chapter will also explore why certain decisions were made to innovate and analyse their effect on resulting criminal activities.

The chapter will come to the following three original conclusions: it will find that during the hike in forgery during the Restriction Period, the Bank of England prioritised scalability over security and so made few material adaptations to banknotes in order to combat crime. This decision was made in part due to the increasingly complex elements underpinning the creation, scalability and circulation of banknotes. By analysing the Bank's lack of approach to the prevention of forgery through technological innovation, this chapter will highlight the variety of activities revolving around forgery and other monetary offences that undermined

trust in the financial system rather than merely the banknote. Repositing a meaning of monetary crime would not only encompass the various activities enacted within the Bloody Code or those issued by the Bank of England, but those surrounding the forgery of paper money more generally. Finally, it will be argued that the monopolistic and centralised level of control that the Bank of England exerted over every facet of the monetary system regarding its own banknotes and their protection through prosecutions, was not a sustainable approach to combat monetary crime.

This chapter will draw upon the analysis of material I have gathered from the Bank of England Archives, with the analysis of sources found in the Secretary's department books for the improvement of notes being the primary lens in which conclusions will be made. Looking at the interaction between the effects of forgery on technological changes of paper instruments during the Restriction Period will provide a unique perspective on the key factors behind the Bank's decisions to prioritise scalability that has not been explored in the literature before. It is worth noting that this approach was taken *in conjunction* with two other main strategies: prosecution of various monetary crimes and reliance on legal instruments. These have been explored in the literature separately in detail but *contextualising these three approaches* in relation to Bank of England notes and forgery, with a focus on (a lack of) *prevention* through technological innovation, rather than *deterrence* through capital statutes and prosecutions, has not been done before.

Drawing from the comparative-historical framework established in the methods chapter, the overarching aim of this chapter will be to start unravelling the key factors leading to this outcome. This will be achieved with reference to the measurable and observable

attributes mentioned in the methods chapter. For this case study, I will look in a first instance at the *acceptability and adoption*, and *accessibility and scalability* of paper money during the 18th and 19th Century. This growth to systemic status will then be put in context against the strategies taken by the Bank to improve the *security* of the notes themselves and deal with forgeries arising as a result. To reflect on these steps, the discussion will focus on the Bank's level of *decentralisation* of decision-making over both the technological changes to notes in conjunction with their monopoly to prosecute forgers and utterers during this period. By doing so, this chapter will highlight the six key factors underlying the Bank's chosen approach towards money and monetary crime during the Restriction Period. These are: transition from objects of exclusivity; processes of demystification and encouragement of use; investment of technology; shouldering of losses; support from senior management; and sharing of practices and information. The use of these key factors as a benchmark for comparison will permit to identify similarities and differences across time. This will in turn contribute to new perspectives on the approaches available in dealing with these challenges across heterodox contexts.

This chapter is comprised of five main sections, the first looks at the rise of paper money in England and highlights the underlying factors that enabled Bank of England notes to become widely accepted and adopted by the wider public. This corresponds to Bank of England notes transitioning from being seen as objects of exclusivity and the steps and socio-economic elements that contributed to demystifying and encouraging the use of paper money amongst a sceptical population. The second section explores three further factors that are also key in the rise of a monetary instrument but contextualises them in the Bank's fight against monetary crime: investment in technology; shouldering of losses; and support from senior management. By doing so, this section will show that the Bank ultimately focused on the scalability of banknotes rather than their security. The third section undertakes a quantitative analysis of the

number of prosecutions for forgery in relation to the few technological advances explored in the previous section in order to determine the interrelationship between these technological changes and forgery. The fourth section will reflect on the steps taken by country banks to provide a wider perspective on the Bank's inaction to combat forgery *through* technological change and highlight the importance of sharing practices and information. Finally, the fifth section will circle back to the Bank of England and show that the Bank's actions, both in term of prosecuting forgery, and in keeping the simple design of their banknotes, in order to maintain financial stability was not universally accepted. By analysing these various factors, this chapter will also reflect on the centralisation of control over paper money and the lack of accountability of the Bank.

1. The evolution of banknotes in England

1.1. Scarcity and Crisis of Coins: Paving the way for Paper Money

By framing our analysis on Bank of England notes, this section will begin by exploring two key factors that underpin how new monetary technologies become widely accepted and adopted as money. Through the lens of the rise of paper money during the 18th and 19th Century, the first factor highlights paper notes' transition from being perceived as an object of exclusivity, to a widely adopted and accepted mode of discharging obligations. In other words, it explores how banknotes shifted from exclusive pieces of paper between named, trusted, and 'in-the-know' individuals for specific transactions, to being recognised and used by the public and reaching systemic status. The second brings to light the ways in which various institutions and actors demystified and encouraged the use of banknotes. These factors mirror the themes identified in the literature review in relation to the rise of paper money in Britain: in particular the increased exposure to a variety of paper instruments, social endorsements and declaration movements towards the currency and the banks. Yet, as we have seen, these themes have often

been explored by academia in separation and have not been taken as a whole to clearly establish the emergence, acceptance, and widespread use of paper money during this timeframe (mirroring the first object of enquiry), but also, contextualised and explored in relationship with the rise of forgery at the time (the second object of enquiry).

As such, this subsection will explore the four identifiable elements underpinning these two factors: the first encompasses the historical and economic elements associated with an existing monetary instrument, namely coins; the second corresponds to the increased exposure and saturation of paper money during this time;[1] the third looks at paper money's rise in public familiarity;[2] finally endorsements by government and businesses heavily influenced which instrument would become readily accepted for transactions.[3] I will address these in turn.

It is important to firstly contextualise paper money's place in relation to the monetary instrument prevalent at the time: coins and bullion. Indeed, the combination of these elements actively contributed to the process of demystifying and encouraging the usage of paper money. It took time for this new object, itself underpinned by a new monetary system of printing, mould-making, and engraving technologies, to gradually move away from being perceived as an object of exclusivity. The lengthy timescale for this process was primarily caused by two elements: the scarcity of coins and lack of alternatives, and their unstable value during the 18th and 19th Century due to various economic crises. Firstly, there was a lack of alternative *accepted* forms of money, in enough quantities, to enable the circulation and scalability of the

[1] RD Richards, 'The Evolution of Paper Money in England' (1927) 41 The Quarterly Journal of Economics 361.
[2] J Keith Horsefield, 'The Beginnings of Paper Money in England' (1977) 6 Journal of European Economic History 117.
[3] Hiroki Shin, 'Paper Money, The Nation, and the Suspension of Cash Payments in 1797' (2015) 58 The Historical Journal 415.

economy with coins alone.[4] Secondly, during the 18th Century and much of the 19th Century, there was a prevailing belief that paper money could only function effectively if it was convertible on demand into gold or silver coin. Indeed, there existed an initial prejudice against an unfamiliar and intrinsically worthless form of currency which was expressed in paper.[5] Yet it was often precisely a lack of coins, or of stability in their value that stimulated the issue of paper money.[6] The numerous financial crises that plagued the early 1800s culminated in the Restriction Period, which forced paper money into the hands of the wider public and to its widespread use.[7] These elements will now be contextualised in relation to Bank of England notes, making references to the rise in monetary crime, including alteration, forgery, and fraud, arising as a result.

Much of the early history of Bank of England notes can be read in Byatt's book: "Promises to Pay" which a copy held at the Bank of England Archives proved invaluable in constructing a brief timeline.[8] It clearly demonstrates the early perception of exclusivity that notes issued by the Bank had, and how the two elements mentioned above contributed to the circumstances enabling the rise in familiarity of paper money. In the early days of Bank of England notes in 1694, cashiers were told to only issue notes to persons known to them.[9] Although originally written by hands, in 1695 it was ordered that notes be printed on paper and a variety of denomination was issued as a result.[10] Though initially successful, they were swiftly altered, and the bank looked into different ways to make paper notes.[11] The development of a watermark soon followed and in 1696, following a recoinage in order to

[4] Catherine Eagleton and Jonathan Williams, *Money A History* (2nd edn, The British Museum Press 2007). 222.
[5] ibid. 185.
[6] ibid. 184-185.
[7] ibid. 222.
[8] Derrick Byatt, *Promises to Pay: The First Three Hundred Years of Bank of England Notes* (1st edn, Spink 1994).
[9] ibid. 11.
[10] ibid. 13.
[11] ibid. 13.

galvanise the economy due to a financial crisis and a run on the bank, notes having a watermark were put into circulation.[12] Another important development in the appearance of the notes occurred in 1743 with the first use of a sum-block intended to make the alteration of a note more difficult.[13] These would spell out in words the denomination and a different design was to be used for each value. By 1745 there were 14 denominations following this style, starting at £20.

Due to a shortage of bullion after the Seven Years' War in 1756 the bank added £10 and £15 to its range. In 1793 the outbreak of war with France led to the bank issuing £5 notes, a denomination they were previously banned from issuing by statute since 1776.[14] The clerks had some difficulties in detecting forgeries and an individual named Charles Price, known as 'Old Patch' successfully hoaxed the bank for 5 years until he was discovered in 1780.[15] Indeed, it would seem the smaller denomination notes were easier to forge, and despite legal protection, the Bank still experienced significant losses.[16] In 1797, for the first time, notes were no longer convertible to cash for an amount time known as the Restriction Period which lasted until 1821, and £1 and £2 were introduced to cope with the demand in money.[17] Thus, the overlap between emerging and existing monetary instruments facilitated the introduction of Bank of England notes of different denominations. It adds weight to a notion permeating throughout the thesis: *there is a significant overlap, reliance, and coexistence between emerging and 'previous' forms of money. New forms of money do not arise in isolation and coexist and emerge within predefined financial and institutional frameworks.*

[12] ibid. 14.
[13] ibid. 29.
[14] ibid. 31.
[15] ibid. 34.
[16] ibid. 33.
[17] ibid. 36

The two elements mentioned above: scarcity of coin and lack of alternatives modes of payment, paved the way for an increase in the demand of paper notes, forcing the creation and issuance of banknotes to shore up the economic gap created by the lack of bullion and helping it move away from the realm of exclusivity. This then allowed the other factors: increase saturation and exposure to paper money, rise of public familiarity, and endorsements by government and business to further demystify and encourage the use of paper instruments. As the literature review has demonstrated, each of these factors has been the subject of academic debate, and as such the following subsection will synthesise these approaches and highlight how they all underpin the journey Bank of England notes took in order to become accepted and adopted as money.

1.2. From Exclusivity and Demystification to Acceptance

During the Restriction Period, Britain was thrust into an unknow period in which it was not possible to convert paper into gold or silver: the very factor underpinning the public's belief in this emerging instrument. This was coupled with a public that was, at first, unfamiliar with this type of money and perceived it to be under the exclusive remit of the higher classes, merchants and banks. There was therefore a necessity to demystify and encourage the use of paper as money in order to maintain financial stability. In addition to this, the hike of forgery resulting from this process was unprecedented, and it fell to the Bank, who controlled every aspect of the note at the time, to decide on the best course of action in minimising the proliferation of the crime. Yet it is worth noting that Bank of England notes were not the only alternative form of paper instrument circulating at the time, with Frame providing a

comprehensive account of country merchant's notes.[18] It is thanks to this pluralisation, saturation, and exposure of paper notes available across the country, that the public gradually experienced a rise of familiarity towards this new monetary instrument. Due to its historical position, its links to government, and established practice in London, the Bank of England firmly established itself at the top of the hierarchy of banknote issuers.[19]

Interestingly, James asserts that Bank of England notes did not circulate in any volume outside of London and those local notes were preferable to Bank of England ones.[20] Likewise, "increasing forgeries also damped the appeal of Bank of England notes relative to country notes, which were thought to have been less easily forged."[21] Yet despite the plurality of monetary instruments coexisting and circulating at the time, James also argues that the Bank of England itself and their banknotes had been recognised as an unofficial lender of last resort, paving the way for the institution to be the sole issuer of bank notes in England and Wales by 1844.[22] The notes issued by the Bank of England were therefore seen as more 'credit' worthy than those of other banks by members of the public. On the other hand, it was also believed that "the zeal with which the Bank pursued convictions and executions of forgers did not endear it too much of the public."[23] This will be revisited later in this chapter.

Therefore, there were different opportunities for the public to start accepting paper instruments as a means of payment, whether voluntarily or due to statute during the Restriction

[18] Ian Frame, ``Country Rag Merchants' and English Local Currencies in the Late Eighteenth and Early Nineteenth Century' (2015) 42 Journal of Law and Society 588.
[19] Richard A Kleer, '"A New Species of Mony": British Exchequer Bills, 1701-1711' (2015) 22 Financial History Review 179.
[20] John A James, 'Panics, Payments Disruptions and the Bank of England before 1826' (2012) 19 Financial History Review 289. 296.
[21] ibid. 296.
[22] ibid. 289.
[23] ibid. 296.

Period.[24] Indeed, the introduction of £1 and £2 notes during the Restriction Period is argued to have helped ease the burden on the limited supply of coins in circulation and enabled transactions to take place more widely with paper money.[25] This culminated in the surge in demand for notes caused by the Restriction Period, making paper instruments accessible to every class of society at the time, resulting in those £1 and £2 notes in particular being more prone to forgery. Finally, the last factor concerns the growing endorsement of paper notes by businesses and banks and has been the subject of various academic texts, notably by Shin.[26] Further demystifying but also encouraging the use of paper money in local communities.

The factors analysed above contributed to a gradual decrease in the denomination of notes whilst increasing the need for the production of paper notes. Crises and events undermining the trust in the financial system, coupled with the belief that coins and bullion were not sufficient and lacking in quantity, also paved the way for the wider public becoming more familiar with paper money. Taken as whole, it can be said that these factors and elements were the driving forces behind the rise of Bank of England Notes to systemic status and had a drastic impact on the wider public's *perception* and *understanding* of paper instruments, and thus as its status as money. It also begins to highlight the *key* factors (*instrument of exclusivity* and *demystification and encouragement of use*) behind new monetary technologies becoming accepted and adopted as money.

[24] Jack Mockford, '"They Are Exactly as Banknotes Are": Perceptions and Technologies of Bank Note Forgery During the Bank Restriction Period, 1797-1821' (PhD Thesis, Hertfordshire 2014).
[25] Elisa Newby, 'The Suspension of Cash Payments as a Monetary Regime' (2007) CDMA07/07 Centre for Dynamic Macroeconomic Analysis Working Paper 1.
[26] Hiroki Shin, 'The Culture of Paper Money in Britain: The Bank of England Note during the Bank Restriction Period, 1797-1821.' (PhD Thesis, Cambridge 2009).

These historical and economic factors also mirror the theoretical discussions about the meaning of money that were touched upon in the previous Chapter. Indeed, the gradual shift to paper money in England during this timeframe represented a drastic "change in the *mode* of producing money [which] was of critical significance in the rise of capitalism."[27] Indeed, the critical juncture enabling Bank of England Notes to blur the boundaries between private credit and public currency in the 18th Century was a direct result to the purpose for which the Bank was created in 1694: the transformation of the sovereign's personal debt into public debt through its incorporation by a privately owned bank (BoE), issuing that debt as public money.[28] This is supported by further academic literature by authors such as Wray,[29] Desan,[30] and Ferguson,[31] on the role of private institutions in supporting monetary policy and monetary acceptance in the 18th Century, ultimately resulting in the slow erosion of control on the issuance of money by the sovereign state. For this reason, this rise of familiarity of Bank of England Notes should be associated with the rise of credit-money and promises to pay that "gradually became a part of public currency in the emerging modern European states."[32] The money of account of the time, the pound sterling, took the form of paper notes that existed alongside precious metal coinage into which it was convertible.[33] Moreover, the debt/ credit relations represented by the notes became transferable and thereby functioned as a form of private money.[34] Echoing the discussion regarding the transition from exclusivity of paper money earlier in this section, the bills themselves became payable to 'the bearer' or 'to order',

[27] Geoffrey Ingham, 'Capitalism, Money and Banking: A Critique of Recent Historical Sociology' (1999) 50 British Journal of Sociology 76. 80.
[28] ibid. 90.
[29] L Randall Wray, 'An Irreverent Overview of the History of Money from the Beginning of the Beginning through to the Present' (1999) 21 Journal of Post Keynesian Economics 679.
[30] Christine Desan, 'Money as a Legal Institution' in David Fox and Wolfgang Ernst (eds), *Money in the Western Legal Tradition: Middle Ages to Bretton Woods* (1st edn, Routledge 2016).
[31] Niall Ferguson, *The Ascent of Money: A Financial History of the World* (1st edn, Penguin Books 2009).
[32] Ingham (n 27). 84.
[33] ibid. 84.
[34] ibid. 86.

enabling it to be exchanged and issued to a wider range of individuals.[35] This represents an example of impersonal trust being incorporated into paper money's monetary system and architecture.

Yet as the next subsection will highlight, the particular challenge faced by the Bank of England during the Restriction Period was the balancing act between the rising use and familiarity of this newer form of money, and the monetary crimes arising as a result. This tension ultimately resulted in the Bank prioritising paper money's scalability over its security.

1.3. From Familiarity to Monetary Crime

The focus on the quantity of notes issued to meet the demand of the lack of 'cash' and maintain economic stability had a drastic effect on the security of notes, resulting in a hike of criminal activities directly associated with the banknote. Focusing on the banknotes themselves, a Secretary Memoranda written on 19th April 1882[36] held at the archives, provides an overview of this tumultuous period, and on the issue of £1 and £2 notes. These lower denominations were first issued on 1st March 1797 and were ceased on the 21st May 1821 shortly after the resumption of cash payments. The highest amount in circulation varied but the highest amount being in 1814 when it reached £9 600 000.[37] The Bank believed that forgery commenced almost immediately on their issue, since the conviction of forgery of bank notes increased from 2 prosecutions in 1797 to 11 convictions in 1798.[38] The quantity of notes needed for circulation meant that these notes were said to be evidently of "very inferior character."[39] Even amidst the growing numbers of forgeries, technological change in Bank of England notes

[35] ibid. 87.
[36] Bank of England, *Secretary's Department: Memoranda Book Miscellanies 4 M5/594* (Bank of England Archives 1867).
[37] ibid 593. 193.
[38] Parliamentary Papers, 'Account Relating to Prosecutions for Forging Bank of England Notes' (1818) 222.
[39] Bank of England, *Secretary's Department: Memoranda Book Miscellanies 4 M5/594* (n 36) 593. 193.

only occurred in 1801 when it introduced a new watermark for its paper, which was further developed in 1822[40]. Moreover, in 1809, serial numbers and dates were also introduced.[41] The Bank alleged that these steps stemmed the tide of forgery for a few years, yet in 1812 there was a great increase of forgery, not only of £1 and £2 notes but of higher denomination as well.[42]

The Bank at the time acknowledged that the issue of large quantities of poor quality £1 and £2 notes brought about a new kind of forgery. Before the Restriction Period, most forgeries occurred through the alteration of a note, therefore increasing its value, whilst during the Restriction Period, most forgeries were of the type of note itself, creating and circulating 'forged' notes.[43] More importantly, it was perceived that the reasons forgers were passing forged notes was due to the profits made by that activity rather than the facility of imitating a Bank of England note.[44] The Bank was thus keenly aware of the daunting task ahead in preventing forgeries, meeting the demand for notes, all the while not knowing when the resumption of cash payments would occur. They were faced with two options: prevention through technological means or deterrence through prosecution.

This section has shown the myriad of notes and denominations issued by the Bank of England and the factors behind their introduction and rise in acceptance. The rise in forgery arising as a result, determined largely by the rise in prosecutions, does not fully encompass the true scale and scope of the activities undermining paper money and the fragile state of the country's financial stability. The value of a conceptual understanding of monetary crime thus

[40] Chris Salmon and George Baldwin, 'Balancing Security and Aesthetics: The Evolution of Modern Banknote Design' (2014) 84 British Numismatic Journal 210. 213.
[41] ibid. 213.
[42] Bank of England, *Secretary's Department: Memoranda Book Miscellanies 4 M5/594* (n 36) 593. 194.
[43] John Keyworth, *Forgery the Artful Crime 16A101/19* (1st edn, Bank of England Museum 2001). 8.
[44] Bank of England, *Secretary's Department- Committee for Investigating Prevention of Forgery of Bank Notes- Minutes M5/261* (Bank of England Archives 1821). 39.

becomes clear, and clearly fits within the scope of activities being explored in this timeframe: from alteration in the 18th Century to the different types of activity (loosely fitting under the umbrella term of forgery) related to Bank of England notes that were deemed 'capital' by statute.[45] These activities were not confined to mere forgery, as they had wider social and economic impact. This ties in with the definition elaborated in the previous chapter: that monetary crime can be understood as activities that threaten the financial stability of a monetary system by abusing or undermining its functioning. Analysing the relationship between the Bank's steps in innovating the banknote in response to forgery will be the focus of the rest of this chapter.

The following sections will elaborate on data I gathered from various contemporary reports held at the Bank of England archives and will show that the steps introduced to stem the tide of forgery were wholly insufficient, and that importantly for the purpose of this project, the Bank's approach in innovating banknotes was less reactive and preventive than initially thought. The next section will focus on exploring in detail the changes to banknotes throughout this timeframe in order to consider the security implications, and the reactivity to criminal activity, resulting from this growth. This analysis will focus on the Restriction Period and the strategies adopted by the Bank to improve notes in response to the hike of forgery of £1 and £2 notes put in circulation.

[45] Randall McGowen, 'The Punishment of Forgery in Eighteenth-Century England' (1992) 17 IAHCCJ Bulletin 29.

2. Committee for the improvement of notes

2.1. The Issue with Simple Banknotes

In this section I will analyse the scope of the submissions presented to the various committees at the Bank of England considering the improvement of banknotes. This will shed a light on the third key factor underpinning the interactions between money and monetary crime: investment in technology. This does not only encompass changes on the monetary instrument to combat monetary crime, but also includes improvements to meet the demand of the scalability and accessibility of an emerging instrument. Finally, it also encompasses investments in the monetary system as a whole, including technologies used to facilitate transactions. Specifically for this case study, it is worth noting that most of the focus in improving Bank of England notes revolved around the monetary instrument itself and the technologies necessary to its manufacture (printer paper, plaque engraving, mould making), rather than elements within the monetary system as a whole and tangential to the banknote: such as providing guidance to bank clerks and market agents.

The following paragraphs will look at the decision-making process of the Bank in improving the design of notes in response to the rise of forgery. Such an analysis has not been explored in depth before. Looking at this particular course of action in aiming to prevent forgery through the improvement of notes can help highlight the interactions between changing technologies of money and forgery rather than focusing solely on the punishment, deterrence, and criminalisation of that offence. Indeed, the literature review has already highlighted the effect of forgery of banknotes onto institutional change[46] and has focused widely on the

[46] Carl Wennerlind, 'The Death Penalty as Monetary Policy: The Practice and Punishment of Monetary Crime, 1690–1830' (2004) 36 History of Political Economy 131; Phil Handler, 'Forgery and the End of the "Bloody Code" in Early Nineteenth-Century England' (2005) 48 The Historical Journal 683.

prosecution of forgers and utterers.[47] By focusing on this approach, this section will highlight the shortcomings of having decisions taken for prevention through technological innovation being centralised.

Shortly after the start of the Restriction Period, the Bank's Committee of Treasury was tasked in assessing suggestions for the improvement of its notes. This committee, which later created a sub-committee for the sole purpose of looking at the improvement of notes during the Restriction Period, were composed of company directors and were responsible for all the key decisions concerning the banknotes and their improvement. As such, decisions concerning changes on how notes looked or were created would have to pass by the Committee before being put to the Board of Directors for final approval. They were in effect the custodians and gate keepers for any matter concerning the Bank of England note. With the rise in forgery and its potential impact on financial stability, and the *necessity* of increased paper money in circulation of lower denominations, the quest for the 'inimitable note' had begun.

To this end, the Bank set about accepting suggestions from the public, and more than 400 entries were recorded in ledgers describing each one in detail.[48] The public were encouraged to submit ideas, methods, and even technologies in order to create a note that would meet the 'required purpose' for the prevention of forgery.[49] This 'required purpose' was: *that the public should be able to discern the difference between an original and an imitation; that notes could not be imitable by anyone; and that the notes would be able to resist imitation by*

[47] Randall McGowen, 'From Pillory to Gallows: The Punishment of Forgery in the Age of the Financial Revolution' (1999) 165 The Past and Present Society 107.
[48] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes- Minutes M5/245* (Bank of England Archives 1802).
[49] Byatt (n 8). 57.

various means.[50] The requirement for a new note was driven by the rise of forgery following the issuance of £1 and £2 notes during the Restriction Period. The Bank also showed a clear awareness that banknotes were flowing into a population that was more familiar with coin than paper. Thus, exploring the process of how the bank made decisions to change and innovate its notes in response to these factors is crucial in highlighting the various approaches that the bank was taking in responding to monetary crimes.

Throughout the 18th Century the Bank had relied on three key features to protect its notes from forgery. These were: watermarked paper, good quality ink, and a simple design, but ultimately this wasn't enough.[51] *It is argued that the simplicity advocated by the Bank of England for the design of its notes was its greatest roadblock in the battle against forgery.* This is supported by authors such as Keyworth and Byatt, who have both highlighted that the Bank believed at the time that complex designs would lead the public experiencing much greater difficulty in recognising Bank of England notes.[52] The first section of this chapter and the literature review has looked at the necessity for paper money to circulate during the Restriction Period in order to deal with the shortage of bullion. This meant that banknotes rapidly moved away from being seen as exclusive instruments used by the business and higher classes, to a monetary instrument *forced upon* the wider public who had till this time been solely accustomed to coins. The Bank therefore took the decision to issue notes printed on one side only, with Britannia and the denomination as the only artistic elements of the note in order to meet printing demands. This simple design would be instantly recognisable by those using them. It would seem that the scalability of notes, more so than its security was at the forefront

[50] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes- Minutes M5/245* (n 48).
[51] Keyworth (n 43). 7.
[52] Byatt (n 8). 57.

of the Directors' minds. This was necessary for the economy in order to ward off the inflation caused by the Restriction Period.[53] Yet, the threat of forgery, and the circulation of forged notes, was of grave concern and undermined the general acceptability of Bank of England Notes, and therefore the trust in the Bank as a whole.[54]

The Special Committee for the improvement of Notes was set up by the Treasury Committee during the Restriction Period to investigate proposals to improve the security of banknotes. As mentioned above its task was to find the inimitable note in order to prevent forgery. The Committee of Treasury took the initial task from 1797 onwards, and then from 1819 until the last entry which is in 1842.[55] They appeared not to convene between December 1804 and August 1807, while it also did not meet between 1809 and 1817 as it was revived on 24 December 1817. From the ledgers I found at the archives, it is unclear why the committee did not meet during these periods, but a possibility could be the ongoing focus on the bank to push for deterrence and prosecutions. I will now draw attention to a select few cases to show the scope and breadth of the suggestions received. More importantly, it reveals the complex network of elements existing at the same time in order to create, issue and circulate banknotes, all of which needed careful consideration before drastic changes to the monetary system were made.

It is also crucial to understand that the meetings on the improvement of notes were taking place during the same time that the Bank was actively policing forgery.[56] The

[53] ibid. 57.
[54] ibid. 57.
[55] Bank of England, *Secretary's Department- Committee for Improvement of Bank Notes- Suggestions Considered M5/251* (Bank of England Archives 1797) 251. 0.
[56] Randall McGowen, 'The Bank of England and the Policing of Forgery 1797-1821' (2005) 186 The Past and Present Society 81.

interaction between these two approaches provides both the context and a unique perspective as to why the Bank chose to not adopt the majority of suggestions. As a later section will show many proposals had viable chances of success in meeting the Bank's needs, since these same modifications to the process of creating a banknote were adopted by local banks to great effect to curb the spread of forgery of their own notes. The following subsection will begin to explore the various elements involved in the manufacture of banknotes considered by the Bank: plate engravings of vignettes or historical figures; paper quality, composition and colouration; the use of inks; paper moulds incorporating watermarks; and methods of printing paper more generally.

2.2. Plate Engravings

When exploring ways to render banknotes more secure and less prone to forgery, the Bank identified and was aiming to improve upon three key features: watermarked paper, good quality ink, and a simple design. By adopting such a note, the *successful* prevention of forgery could have occurred, would have promoted confidence and acceptance during a time when this was solely needed, and shifted the limelight away from the Bank's relationship with the gallows. This strategy was not new, the Bank had relied on the combination of these features to combat alterations and forgery up to 1797. Yet, this approach would be severely tested during the Restriction Period due the sheer scale of forgeries happening at the time.

It is worth noting that each of these features were themselves composed by various overlapping elements that were necessary for the creation of banknotes. By looking at the various reports submitted to the Bank on the mechanisms of printing paper at the time, these were: change to the material or way of making the plate used for inking the paper (the engraving plate which was traditionally made of copper), change of material or the mould in the

manufacture of paper, and better designs which were etched into the engraving plates by artists. As such, the quality and colour of the paper was considered, the material and pattern of the mould for creating the paper was explored (this would imprint the Watermark on the paper for example), finally the design of the note itself fuelled many of the debates in Committee reports and was achieved by looking at the design and material of the engraving plates used. The following paragraphs will begin to contextualise one of this project's overarching themes regarding the gradual decentralisation of decision-making by key actors within the monetary system and begin to explore how a centralised and monopolistic control over prevention and deterrence measures might minimise the chances of successfully curbing monetary crime.

To achieve this, I will look at these submissions in more detail and consider why despite the variety of options available for the Bank to improve their note's security, a focus on simple design and its scalability remained the norm for most of the Restriction Period. It will also be noted that contrary to their investment in the prosecution of forgers and utterers, their investment in technology was limited *then*, albeit it did then pave the way for many of the future features we are familiar with today.[57] The first submission considered by the Special Committee for the improvement of Notes was by Mr Bewicke on the 3rd March 1802, who "recommended that the Bank should adopt Wood Engraving for its Bank Notes, and produced a Specimen."[58] He elaborated that in his opinion his method would be very difficult if not impossible to be imitated by forgery.[59] Likewise, he asserted that a million notes could be

[57] See Emma L Prime and David H Solomon, 'Australia's Plastic Banknotes: Fighting Counterfeit Currency' (2010) 49 Angewandte Chemie International Edition 3726. For a great overview of current technologies and elements adopted in plastic note design.
[58] Bank of England, *Secretary's Department- Committee for Improvement of Bank Notes- Suggestions Considered M5/250* (Bank of England Archives 1797) 251. 15.
[59] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes- Minutes M5/245* (n 48) 245. 3.

pressed per wood block without requiring any material repair, addressing the Bank's need of producing an increasing number of notes.[60]

The Bank's engraver Mr Terry was able to copy his design by using copper plates, which was thought to be superior and durable enough for the production of paper needed at the time.[61] Indeed, the dilemma faced by the bank was that copper plates could be pressed between 5000 to 10,000 times before an engraver had to make a new and identical plate.[62] This inevitability amounted to differences between printing runs and the Bank itself was at times uncertain as to the genuineness of its notes.[63] On the other hand, the ability of Bank engravers to successfully imitate proposed engravings proved fatal to most submissions made to the bank during most of the 18th and 19th Century. The search of new technologies in order to engrave plates was also considered. Mr Williamson used machines, rather than doing so by hand, to engrave plates. He ultimately faced the same fate.[64] Yet the Bank seldom took notice of such technologies during the Restriction Period.[65] Indeed, Mr Williamson's further request to come up with new designs for the notes was also politely ignored on 9th July 1818.[66]

This is echoed quite keenly in the case of Mr Perkins' and Mr Dyer, representing banknotes made in America. These individuals proposed in 1811 that the engravings should be made on steel plates, and that this process had protected New England notes from forgery and

[60] ibid. 3.
[61] Byatt (n 8). 57
[62] Keyworth (n 43). 11.
[63] ibid. 11.
[64] Bank of England, *Secretary's Department- Committee for Improvement of Bank Notes- Suggestions Considered M5/251* (n 55) 251. 32.
[65] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes- Minutes M5/246* (Bank of England Archives 1817) 246. 4.
[66] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes- Minutes M5/247* (Bank of England Archives 1818) 247. 22.

could not be imitated.[67] Mr Harper, the engraver at the time, had "very successfully copied some of the most difficult parts of one of these new Notes".[68] The Committee decided not to take this into consideration any further, including when asked to reconsider in 1818.[69] What is striking is that Perkins' innovation of engraved plate on hardened steel and the use of a Press machine to reproduce plates between printing runs, was more reliable than the method currently used.[70] However, the successful imitation by the Bank's engraver convinced the Directors to refuse such an innovative method. Moreover, when considering the viability of steel plates in their report to the Directors, the Committee also remarked that although they could be used for twice the amount of copper plates, they were not able to be repaired, which severely limited their usability.[71] Likewise, hardening a steel plate in order to limit the oxidation of the plate during the printing process broke over one half of the plates tested as that technique had not been refined at the time.[72]

The Committee also puts into perspectives the scalability and the increase in demand of the notes. As of the 25th May 1818, the Bank had 50 printers of Bank Notes who produced each on average 1200 notes a day, or about 369,000 per week.[73] Each plate produced 15,000 notes before needing repair and would be totally worn out after around 200,000 notes.[74] To keep up with the maintenance of these plates, the Bank employed 17 engravers, 7 of which were employed to produce brand new plates.[75] Mr Harper was consulted as to the requirements

[67] Bank of England, *Secretary's Department- Committee for Improvement of Bank Notes- Suggestions Considered M5/250* (n 58) 250. 37.
[68] ibid. 127.
[69] ibid. 102.
[70] Keyworth (n 43). 11.
[71] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes- Minutes M5/247* (n 66). 53.
[72] ibid. 53.
[73] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes- Minutes M5/246* (n 65). 88.
[74] ibid. 88.
[75] ibid. 89.

of introducing historical subjects on notes. His assessment showed that this was too costly, especially when other factors could be considered, such as the watermark and the quality of paper.[76] He stated that 50 new engravers would have to be employed exclusively for engraving historical figures, moreover, 50 new plates would have to be produced fortnightly, and that each new plate would take a fortnight or three weeks to engrave.[77] Similarly, the printing would require double the number of printers.[78] The proposition of improving the design of the notes, and employ the best artists of the land to engrave the plates, and introduce historical vignettes was brought forward by the Society of Arts when the opinion and pressure on the Bank to improve the note was at its highest.[79] Mr Beaumont spearheaded their proposition but he was largely ignored by the Bank since most of his suggestions, using Steel plates and better designs was seen as impractical, as was demonstrated by Mr Harper.[80] As such improving the plates, both in terms of design and material for pressing, proved too costly for the Bank to adopt, as the rise in familiarity and usage of the notes prevented the Bank from steering away from their simple design and investing into artists that would be capable of engraving the quantity of plates needed.

2.3. Quantity over Quality: The Paper Conundrum

This problem was not limited to elements of design, engraving plates, or their material; the Bank sought ways to make the paper *itself* more recognisable and harder to forged. To achieve this, the Bank also focused on the manufacture of paper. A question that was asked to Mr Remnie on 9th July 1818 was whether a stream of water or a steam engine was best suited to work the machinery for the production of paper and whether the use of the best kind of

[76] ibid. 89.
[77] ibid. 89.
[78] ibid. 89.
[79] Society of Arts, *Report on the Mode of Preventing the Forgery of Banknotes 13A84/4/5* (1819).
[80] Bank of England, *Secretary's Department- Committee for Improvement of Bank Notes- Suggestions Considered M5/251* (n 55). 53.

machinery would be able to produce the best kind of paper.[81] His report not only provides insight on the paper making process, and the types of material being used for other sorts of books and notes, the so called 'rags' who used cotton and linen to make paper, but also shows the importance of paper in the protection of forgery in the eyes of the Bank. Mr Remnie states that it is only by employing and using the best individuals and machineries that the 'best article' can be achieved.[82] The importance of using the best paper for its notes even resulted in the Committee suggesting that the Bank build its own paper mill in order to meet the demand of issuing notes. Indeed, it was the type of paper used in the £1 and £2 denomination notes that made counterfeits so easy to utter. This was due to the variety of paper makers that were able to manufacture similar paper as that used by the Bank of England during the Restriction Period.

Colouration of paper was also seen as a potential avenue to improve the current notes, although Mr Portal (paper maker for the Bank) had always resisted the use of such method. The use of colours either in the ink or within the paper itself was successfully used in France to counter forgeries, and in search for the 'inimitable note', the Bank accepted suggestions for the banks of other countries. For example, the Bank, on Friday 12th November 1802, treated Monsieur Guillot from the Bank of Paris with utmost respect and took into consideration the French design.[83] As such, investing in technology to combat monetary crime, was in this case study severely limited as the practical implication of changing methods of production for the various elements of making paper notes were *deemed* too high.

[81] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes- Minutes M5/247* (n 66) 247. 16.
[82] ibid. 19.
[83] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes- Minutes M5/245* (n 48) 245. 35.

Analysing, discussing, and reproducing the myriad of proposals submitted to the Bank was a costly endeavour and the Directors of the Bank of England provided funding and rewards for potential research into technological innovation. This was in addition to the costs incurred for their better-known approach to forgery: prosecuting the crime and employing police constables. The next subsection will focus on the pecuniary rewards given to those submitting improvements to Bank of England notes. This ties in to the fourth and fifth key factors underpinning money's rise to systemic status: the issuer shouldering losses associated with the emerging monetary technology, and the support of senior management in the new technology.

2.4. Rewards for Successful Proposals

It is interesting to note that no reward was officially set for successfully submitting proposals that would meet the required purpose. Mr Williams, however, was clearly drawn by the pecuniary reward that might befall him should he be successful. He informed the Committee on the 4th May 1802 that he would only submit his 'ideas' "until he should know what renumeration should be made to him, if it should be adopted by the Bank."[84] The Bank responded by stating that "the Bank will be ready to make any compensation which can be thought reasonable, and such, as they do not doubt would be suited to your wishes."[85] These communications continued, with Mr Williams resisting to submit his improvements and aiming to gain a guarantee of the renumeration he would receive. He conceived that "7 or 8 years purchase of the present expenses (whatever it may be) attending prosecutions for forgery, which he estimated as £15,000 per annum"[86] would be a reasonable, yet the Committee could not adhere to that sum and asked him for his submission.[87] Finally, Mr Williams submitted his idea and suggested that the loom rather than the paper mill should be used, and that silk should

[84] ibid. 15.
[85] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes-Minutes M5/245* (n 48). 16.
[86] ibid. 21.
[87] ibid. 22.

replace paper.[88] Unsurprisingly, the Bank resolved that "plans similar to that which he has presented, have long since been considered by the Directors of this House, and have not been thought suitable to be adopted by the Bank."[89]

It would therefore seem that the public was aware that the Bank was taking active steps in trying to improve their notes. It also shows that the Bank was reluctant, at the time, to divulge the extent of its expenses in dealing with forgery and that the Bank was ready to provide sizeable remuneration and compensation for those who would submit the right idea. Indeed, this can be seen with the forward investment granted to certain promising projects, such as those of Mr Applegath and Cowper, and Mr Congreve[90], who were the members of the public who got the closest from having their submission put to the Directors. For example, the Bank forwarded £600 to Mr Applegath[91] for him to finish his specimen of note that the Directors believed to be promising, as well as £1200 in the hopes that he "will afford a national hope of rendering forgery so difficult as almost to amount to prevention."[92] Within the Bank, the Committee often reimbursed the expenses incurred by its employees: Mr Portal was awarded £2000 in 1822 for his troubles in continuously providing specimens of paper to the Committee.[93] Far from showing a reluctance to invest in new technologies, this subsection has shown that the Bank was willing to spend substantial money and offer rewards to those who could help them achieve the 'inimitable' note. Yet willingness to invest in new technologies, and practically implementing them within a monetary system required the careful consideration

[88] ibid. 25.
[89] ibid. 25.
[90] Bank of England, *Secretary's Department- Committee for Investigating Prevention of Forgery of Bank Notes-Minutes M5/261* (n 44). 97.
[91] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes-Minutes M5/246* (n 65) 246. 103.
[92] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes-Minutes M5/247* (n 66) 247. 63.
[93] Bank of England, *Secretary's Department: Memoranda Book Miscellanies 4 M5/594* (n 36). 113.

of the various elements mentioned above. The next subsection will highlight how the introduction of a new watermark was ultimately a compromise between the costs of implementation, scalability, and security.

2.5. Mr Brewer's Watermark

Regardless of the number of propositions submitted to the Bank, in addition to the introduction of serial numbers and dates in 1809, the only *impactful* change to the banknote during this period was the change of a watermark.[94] In 1801, the watermark had been changed from simple lines to also include a wavy pattern cutting across the mould that would raise the surface of the paper when pressed into the paper. On 17th February 1803 Mr Brewer informed the bank that he was continuing to work on this mould in order to improve it further.[95] On 30th March 1821 a stronger impression of the waved lines was presented by Mr Portal to the committee which was said to afford more security to the Bank notes and was recommended to the Court of Directors and adopted.[96] On 22nd June 1822, Mr Brewer was called to assess the ongoing security of the Watermark on banknotes.[97]. Mr Brewer considered the Watermark to be a very great security and that it was beyond the power of the forger to imitate it on a thin, tough paper.[98] Indeed, pressing a copper plate on this type of paper would break it.[99] In terms of feasibility Mr Brewer remarked that it would only take more time and greater care to introduce waved threads rather than straight ones into a mould.[100] On 24th December 1822 it was agreed that this improved watermark would be used on the next £5 denomination issued after the resumption of cash payments and the suspension of £1 and £2 notes.[101] Therefore, the

[94] Byatt (n 8). 37.
[95] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes-Minutes M5/245* (n 48). 50-51.
[96] Bank of England, *Secretary's Department- Committee for Investigating Prevention of Forgery of Bank Notes-Minutes M5/261* (n 44). 5.
[97] ibid. 42.
[98] ibid. 51.
[99] ibid. 51.
[100] ibid. 51.
[101] Bank of England, *Secretary's Department: Memoranda Book Miscellanies 4 M5/594* (n 36). 113.

only influential outcome of the Bank's quest to improve notes was Mr Brewer's waved watermark. The next subsection will pull together the three key factors explored in this section: investment in technology, support from senior management, and shouldering losses, and reiterate the approach prioritised by the Bank of England. This will provide a benchmark to compare the Bank's response to forgery in relation to technological changes in banknotes, contextualised against their rising acceptance and adoption by the wider public.

2.6. The Prioritisation of Scalability over Security

This section has shown that by prioritising the scalability of banknotes, the Bank of England ultimately undermined the security and resistance of banknotes to crime. However, this also had the effect of maintaining the Bank's monopoly over the issuance, design, and prosecution of forgery. Yet, in order to prevent forgery, the Bank's approach was slow and ineffective due to its position as sole decision-maker, weighing and waiting for propositions to come to fruition. More importantly, potential gains in security were not made because scalability was seen as more important. As we have seen, different plates of engraving such as steel were deemed to be too costly for the Bank due to the number of notes that had to be produced. Thus, the adoption of the watermark was an economical way to increase the difficulty of forgery without drastically changing the design and simplicity of the note. This was crucial for the Bank as the note needed to be recognised by the general public. The next section will map out the effects of these suggestions, and of the watermark in particular, on forgery statistics drawn from data from the Old Bailey and contemporary reports.

3. Quantitative Analysis of convictions of forgery in relation to technological change

This section will complement the qualitative analysis undertaken in the previous section and draw on quantitative data representing the number of persons prosecuted and convicted for the forgery of Bank of England notes from 1783 to 1829. It is worth reiterating that the prosecutions for the forgeries of Bank of England notes were happening in tandem with the search for the inimitable note. The aim of this section will be to establish the reactiveness of the Bank to incidences of forgery and explore the interactions between money, technology and crime arising from these changes. These will enable to identify the strategies adopted by the Bank of England to deal with this challenge during this timeframe. This brief quantitative analysis will enable to *visualise* the outcomes explored in the section above. This analysis will provide a unique perspective on whether the limited steps taken by the Bank of England had a noticeable effect in subsequently limiting prosecutions for forgery. The convictions included in this section cover: the forgery of Bank of England notes, the utterance of forged notes, and being found in possession of forged notes. The data has been gathered from a variety of primary sources to maximise the timescale of data being analysed, showing data from before and after the Restriction Period.

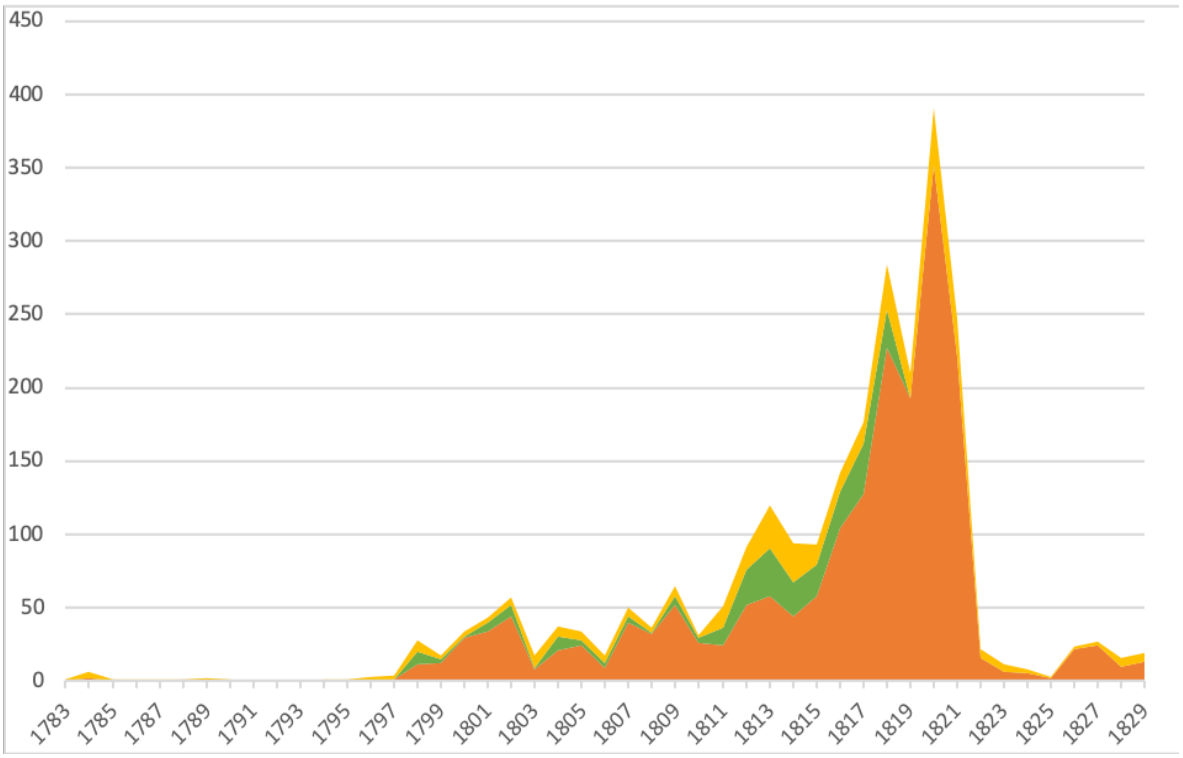
I have compiled the data from Committee Reports looking at the amount of forgery convictions during this time[102] which provided data from across the country, and statistics from

[102] A list of Parliamentary Papers is provided: Parliamentary Papers, 'Forgery of Bank Notes: A Statement of the Number of Persons' (1821) 264; Parliamentary Papers, 'Accounts Relating to Prosecutions by the Bank of England' (1812) 149; Parliamentary Papers, 'An Account of the Whole Expense Incurred by the Bank of England' (1818) 297; Parliamentary Papers, 'Account Relating to Prosecutions for Forging Bank of England Notes' (n 38); House of Commons, 'Select Committee Report on the Criminal Laws' (1819) 585; Parliamentary Papers, 'Prosecutions for Forgeries upon Banks in Great Britain' (1828) 352; Parliamentary Papers, 'A Return of the Number of Persons Convicted of Forgery' (1830) 442.

the Old Bailey Online focusing on prosecutions taking place in London.[103] The resulting spreadsheet was then cross referenced with similar tables assembled by McGowen,[104] Emsley[105] and Mockford[106] in order to ascertain its validity and similarity. The full dataset has been reproduced in Appendix 1. Drawing from the previous sections, I have also marked the dates in which technological innovation of Bank of England notes occurred, with a particular focus on the Restriction Period.

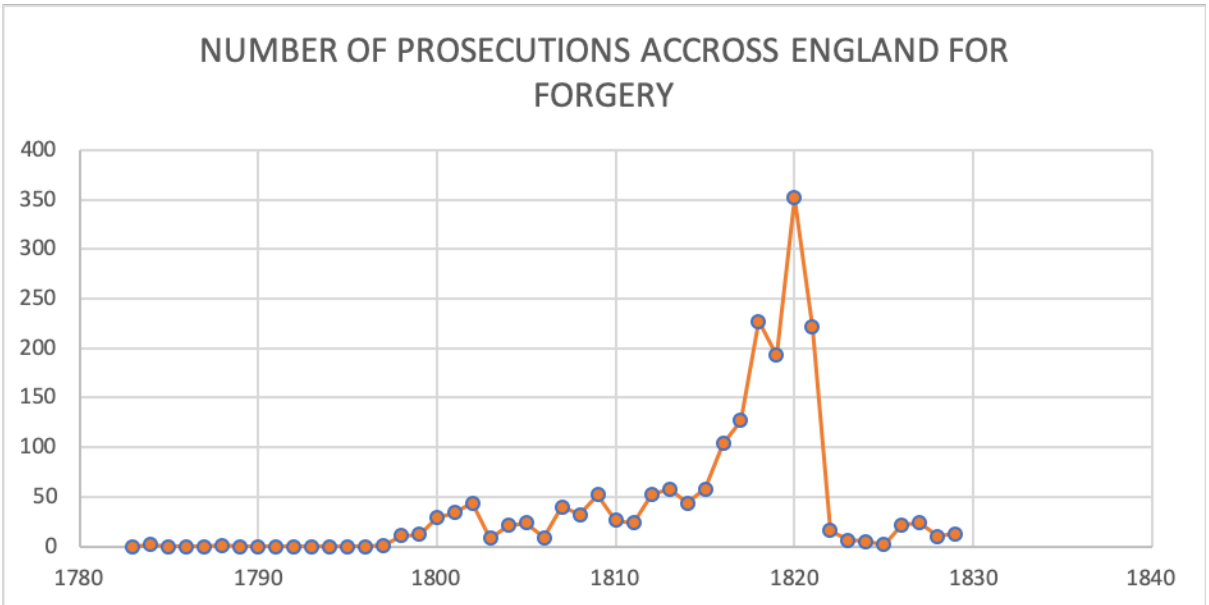
The graph below [Graph 1] shows a stacked area graph that represent the evolution of three values of convictions during this period drawn from the sources mentioned previously. The yellow curve represents the Old Bailey Online total number of cases, the green one is the Old Bailey cases reported by the Bank of England, and the orange area denotes the number of convictions drawn from the reports. This graph is useful in comparing multiple data sources over time and can highlight any patterns or trends arising from the graph by analysing the development of quantitative values over this period. It would seem that each data source follows the same pattern over time. There is noticeable increase of forgery over the Restriction Period with some minute decreases during specific years. This shows that all three strands of data are representative of the landscape of forgery across the country and are complementary to each other as they follow a similar trajectory.

[103] The Old Bailey Online, 'The Proceedings of the Old Bailey, 1674-1913' <https://www.oldbaileyonline.org>.
[104] Randall McGowen, 'Managing the Gallows: The Bank of England and the Death Penalty, 1797-1821' (2007) 25 Law and History Review 241.
[105] Clive Emsley, *Crime and Society in England, 1750- 1900* (5th edn, Routledge 2018).
[106] Mockford (n 24).



Graph 1: Stacked Area Graph of number of prosecutions for forgery

The next chart [Graph 2] compares the total number of prosecutions across England for forgery (the Orange Column in Appendix 1) across time. The data would suggest that the introduction of the watermark in 1801 managed to lower the number of convictions from 44 in 1802 to 8 in 1803. However, it was not as effective since number of forgers and utterers were still steadily increasing. The introduction of the dates and serial numbers in 1809 also appeared to have a minor effect on the number of convictions. In 1809, 52 cases were reported, whereas in 1810 only 26 were convicted. However, after 1811, the number of forgeries exponentially grew, reaching 352 in 1820. As the next sections will show public interest and government involvement on the Bank's actions occurred in 1818 when forgery was nearing its peak. It is also around this time that the Committee for the improvement of Notes reformed to consider plans to prevent the forgery of notes.



Graph 2: Number of Prosecutions across England for Forgery

The sharp decrease in prosecutions of forgery from 1820 to 1822 was *not* caused by the introduction of a better watermark in 1822. The key factor drastically reducing the prosecution of forgery was likely to be the resumption of cash payments in 1821 and the phasing out of the £1 and £2 notes. However, the number of convictions that can be seen later correspond to the forgery of £5 notes or above, even after the introduction of the watermark. This is still higher than before the Restriction Period, when the security of banknotes was arguably at its lowest. What is interesting to note is that the Committee of Treasury and the special Committee did not meet between 1804 and 1807, and between 1809 and 1817. As the graph above shows during both of these periods, forgery developed, and it would seem that the Bank focused on the prosecution of forgery rather than its prevention. Moreover, the reactiveness of the Bank can also be seen to be lacking. As the previous section has highlighted many proposals were submitted to the Bank as early as 1797. During this time until the introduction of the first waved watermark, forgery increased from 1 in 1797 to 44 in 1802, before these steps were implemented. The Committee minutes show that many submissions were put forward during this time, and yet the Bank did not react as swiftly as originally perceived.

This hike in *prosecutions* of forgery must be taken in *context* with the culture of private prosecutions prevalent at the time and the attention afforded to crime statistics, coupled with the resources that the Bank possessed in order to fund the level of prosecutions, rewards, and policing of the forgery of their notes. During that time, the state took a piecemeal attitude towards the prosecution of crime and particular attention was only given to activities that directly infringed on the government's ability to run the country and the seriousness of the threat, which included its finances.[107] This anxiety over financial stability was manifested through the variety of forgery and coinage offences that were found within the Bloody code by the 1830s[108] and the level of statutory support afforded to the Bank of England to facilitate their prosecutions and thus maintain the level of acceptance and adoption of low denomination notes. Nevertheless, according to Godfrey and Lawrence, the government did not itself always directly pursue the prosecution of even these most 'serious offences.'[109] McGowan[110] has convincedly shown that the Bank of England privately funded the prosecutions of these cases and built a significant body of employees dedicates to this task.[111] Similarly it is worth recognising and acknowledging crime history literature in asserting that increases in prosecutions of forgery should not always been seen as an indication that *crime* was rising. Emsley has clearly stated that introduction of crime statistics in the 1800s helped push political and policy debate and led to a *perception* of crime as a national bogeyman, raising its awareness, and moving it away from a personal problem between victim and accused to a national impersonal problem.[112]

[107] Barry Godfrey and Paul Lawrence, *Crime and Justice since 1750* (2nd edn, Routledge 2015). 33.
[108] ibid. 33.
[109] ibid. 34.
[110] McGowen, 'The Bank of England and the Policing of Forgery 1797-1821' (n 56).
[111] Godfrey and Lawrence (n 107). 34.
[112] Emsley (n 105). 48.

Pulling the last two sections together and focusing on the extent to which the Bank invested in technology in order to combat or curb monetary crime, a few conclusions can be made. Although the Bank introduced a limited number of measures to increase the resistance of notes, and therefore make it harder for the criminal to practically commit the crime, the Bank ultimately failed to control the factors that facilitated its commission, and therefore failed to deal with its contemporary challenge. It is worth noting that so far in this chapter the focus has been on crime prevention by analysing possible technological innovation in the design of banknotes. Yet there were other strategies used by the Bank *in conjunction* with finding the inimitable note. Indeed, as we have alluded to throughout this chapter, the Bank limited itself to three main strategies: crime prevention through (limited) technological improvements in banknotes; prosecution of monetary crime by using Freshfields and police constables; reliance on legal instruments on both the protection of designs and paper and criminal law. The last two strategies have extensively been researched by academia and as such has not been the focus of this chapter. In particular, the use of the timeframe's criminal justice system has been covered extensively by Emsley[113] and Godfrey & Lawrence.[114] Their 'outsourcing' of matters of forgery to Freshfields has also been covered.[115] Moreover, the use of legislation to protect key elements of the production of paper has also been alluded to.[116] The missing link between these discourses has been to contextualise these different approaches in relation to each other rather than to treat them in separation. As the exploration of the previous steps have shown, the interactions between money, technology and crime did not follow a standard 'pattern' that

[113] ibid.
[114] Godfrey and Lawrence (n 107).
[115] Deirdre Palk (ed), *Prisoners' Letters to the Bank of England, 1781-1827* (London Record Society 2007) <http://www.british-history.ac.uk/london-record-soc/vol42.>.
[116] See: Carissa Hamoen, 'Forgery: Legislation Gone Mad or Legitimate Social Threat?' (2012) 3 Constellations 155; House of Commons (n 102); Bank of England, *Secretary's Department: Legal Opinions and Cases M5/552* (Bank of England Archives 1787) 552.

successfully limited crime or prevented it through investments in technology. It supports the approach taken by this thesis in defining monetary crime and the core principle that these activities should not be seen as a unitary phenomenon directly associated with a particular monetary instrument. It should be understood as the plurality of activities, criminal or not, that are able to undermine the financial stability and functioning of the complex overlap of elements underpinning the monetary system. This is further accentuated by the setting in which these decisions were being made. The Bank of England's approach to forgery was situated at the cusp of significant social and economic upheaval and concerns about crime, as we explored previously, was also starting to brew. Technology alone was not sufficient in limiting forgery and this course of action did not deal with the root cause of the problem. The slow decision-making process from the Bank of England, coupled with its focus on scalability, proved fatal to *its* approach to preventing forgery.

As the next section will show, technological steps were sometimes successful in limiting forgery, which might offer some context as to why the Bank chose *not* to adopt a similar course of action, seemingly favouring *instead* the prosecution of forgery. This will link to the final and sixth factor related to the rise and acceptability of new monetary technologies: the crucial characteristic of sharing practices and information with other actors in order to foster competition and thus push monetary innovation further.

4. Comparison with local banknotes

To explore this last factor, it is necessary to briefly move away from London and the Bank of England and analyse country notes issued by local banks across the country. It is worth acknowledging the existence of wider literature concerning country banks and banking more generally of which some key texts have been touched upon in the literature review, and how

different their experience might have been.[117] Although today Bank of England notes are legal tender and are public currency, during this period, many private currencies denominated in the same money of account were also circulating. There was therefore a plurality of banknotes coexisting with those issued by the Bank of England. They were issued by specific banks and adopted different elements of production to create unique banknotes which would protect them against forgery. The literature has only recently focused on country banknotes, yet it has not explored in much depth the interactions between forgery and those local notes. As a result, this section will aim to briefly compare technological innovations of country notes in relation to the ones considered by the Bank of England in order to show that the Bank's position of attaching importance to the scalability of notes above the security of its notes, and not being flexible in adopting new technologies, was a contributing factor to the challenges faced in dealing with forgery.

Contrary to the archives held by the Bank of England, there is limited material in England and Wales corresponding to local banks and their issue of notes during this timeframe. However, I have managed to correlate the data from the submission of artists and reports made to the Bank of England with material found at Lloyds archive in London which still hold some resources from previous country banks. The landscape of paper notes at the time was diverse, and many local banks and companies were given the right to issue their own promissory notes. This can be seen with Berwick, Lechmere and Co's Banking Licence issued by the office for stamps and taxes authorising them in 1842 to issue notes in a certain style.[118]

[117] Ian Frame, '"Country Rag Merchants" and "Octopus Tentacles": An Analysis of Law's Contribution to the Creation of Money in England and Wales, 1790-1844' (PhD Thesis, Kent 2012).
[118] Lloyds Archives, 'Banker's Licence Authorising Issuance of Notes under a Certain Style'.

The report on the mode of preventing the forgery of Banknotes by the Society of Arts provides contemporary insights on the methods and steps taken by country bankers in dealing with forgery. The report first discusses the simplistic approach taken by the Bank of England and its adoption of a watermark.[119] It notices that forgers must imitate the watermark, the engraving and the signature on the same plate and that there seems to be no difficulty in producing a passable imitation of this.[120] The majority of artists and 'skilled' persons that were consulted for this report agreed that the quality of the engraving for Bank of England notes was of inferior quality, and that the vignette and sum-block currently present "was universally considered as offering but little difficulty to the forger."[121] To tackle this, when presenting his recommendations to the Bank, Mr Beaumont stated that: "the drawing and Engraving on Bank Notes should be executed by the first Artists; to be Naked figures and different vignettes also, and printed by Steel Plates."[122] Indeed it was argued that a good vignette "one much better than the present Britannia, might, without difficulty, be introduced on the Bank of England Notes, which would be a great assistance to the public in distinguishing between genuine and forged notes."[123] As the previous sections have explored in detail, these steps were rejected by the Bank since similar propositions had already been submitted and that it would be impracticable for the Bank to adopt, and inadequate to prevent the forgery of Bank Notes.[124]

The report remarked that a number of artists had been employed to create engravings and designs for country banks, and that a number of suggestions presented to the Bank of

[119] Society of Arts (n 79). 3.
[120] ibid. 3.
[121] ibid. 4.
[122] Bank of England, *Secretary's Department- Committee for Improvement of Bank Notes- Suggestions Considered M5/250* (n 58). 53.
[123] Society of Arts (n 79). 45.
[124] Bank of England, *Secretary's Department- Committee for Improvement of Bank Notes- Suggestions Considered M5/250* (n 58). 53.

England had been successful in combatting forgery.[125] Indeed, "country Banks that have chosen to go to the expense even of small vignettes well executed, have never as yet been forged upon."[126] Moreover, the willingness of these banks to quickly adapt and react to forgeries was also highlighted. A forgery on a Plymouth Bank "was immediately and effectually stopped by the adoption of a good vignette of small size."[127] In his correspondence with the Bank of England, Mr Beaumont suggests that "Several Country Bankers have long been aware of the utility of having their notes engraved in a superior manner, in order to increase the difficulty of imitation."[128]

Yet, there is an important distinction that needs to be made between country bankers and the Bank of England. When a forgery was committed on a country bank, it was obliged to pay the forged note in order to support its credit.[129] Evidence of this can be seen in papers relating to forged banknotes of Berwick, Lechmere and Co in 1849.[130] On November 1849 the Bank had to repay £75 worth of forged notes of £5 denomination.[131] However, the Bank of England did not have to do so, as it was not required to pay for the retention of forged notes as it was protected by an Act of Parliament during the Restriction Period.[132] Therefore rendering the imitation of a Bank Note as difficult as possible was not only a concern for the Bank of England: it was also crucial for country bankers who were personally liable to repay forged notes.[133] On the other hand, due to their composition, size, and scale of operation, it is argued that country banks had more flexibility to issue new types of notes.[134] Interestingly, it was the

[125] Society of Arts (n 79). 5.
[126] ibid. 5.
[127] ibid. 5.
[128] ibid. 15.
[129] ibid. 42.
[130] Lloyds Archives, 'Papers Relating to Forged Banknotes of Berwick, Lechmere and Company'. 52.
[131] ibid. 52.
[132] Society of Arts (n 79). 42.
[133] ibid. 52.
[134] ibid. 52.

opinion of the Society that country notes were seldom forged because Bank of England Notes were not only easily imitated, but because of their wider circulation, the forgeries of them were more easily passed.[135] It is thought that if the Bank of England note became difficult to counterfeit, the forgers would "employ their ingenuity in copying the country Bank notes."[136]

However, although local banknotes did incorporate many of the design elements advocated by artists, incidences of forgeries were not completely eliminated. Below are two specimens issued by Blackburn Bank which changed the design of their £1 note within 10 years of each other.[137] The second incorporates a more difficult sum block for the One Pound sign, and the engraving of the edge around the note and of the name of the Bank is more detailed.

Figure 2: Blackburn Bank Note - 1815

[135] ibid. 52.
[136] ibid. 52.
[137] Lloyds Archives, 'Blackburn Bank Banknotes Box 1'.

Figure 3: Blackburn Bank Note - 1825

Offers of Reward and warnings by country banks also clearly informed the local area that there were forged notes in circulation. For example, in 1825 Rawson & Co discovered that a forgery on one of their previous plates was in circulation. They informed their 'friends and the Public' that the engraving was poorly executed and that on the slightest examination it may be detected. The notes being issued from that plate had not been used since 1821.[138] Similarly, in 1848 a forgery of the £5 pounds note of the Leamington Banking Company had been discovered. They described in great detail the ways of identifying the forged note as to make the public able to distinguish on summary inspection a genuine and forged note.[139] Interestingly, the bank had already adapted their design by printing patterns on the back of the note in colour, which the Bank of England never did during this time.[140]

The interactions between forgery and money shaped the technological innovations of country notes since the issuance of such notes was heavily influenced by the sceptre of forgery. Yet in contrast with the Bank of England, country banks in general were more proactive in limiting the effect of forgery. The use of printed patterns on both sides, the use of colour in those patterns, the use of edges, and complex engravings by artists, all contributed to provide unique identities to the myriad of notes in circulation at the time. However, it must be noted that these banks did not work in concert when developing these designs and that, just like the Bank of England, the control over the note rested on the bank itself. It is also fair to assume that the need of scalability of country banks was drastically lower than that of the Bank of England, which would have enabled these local Banks to react more rapidly and take more

[138] Lloyds Archives, 'Printed Circular Warning of Forgery of £1 Notes'.
[139] Lloyds Archives, 'Printed Poster Warning of Forged Notes'.
[140] Lloyds Archives, 'Printed Notice Offering £100 Reward for Information about Offender'.

expensive measures in improving the security of their notes. In this case, security rather than scalability was prioritised.

The sharing of practices and information was therefore not employed by the Bank themselves, rather artists and craftsmen of the time would lend their skills to meet the demand of creating notes that were harder to forge. The transparency required to effectively combat forgery across the country was therefore not met by the financial institutions themselves, content in *keeping* control over the issuance of their own notes, but by third-party actors involved in creating the various elements needed for producing banknotes, which often overlapped with other industries and trades. Government rarely got involved in creating a standard for banknotes that banks could adhere to; the state's approach was to protect specific methods of producing paper, and only towards specific banks. In conjunction, the reliance on constables to root out and find forgers, with the police limitations of that period across county lines, meant that the sharing of resources and information was only in its infancy, and severely limited. The issue of control, a crucial element *permitting* the Bank of England's strategy of scalability over security will be explored in the next section and put in context towards the public's perception of the Bank's 'justified' approach.

5. Evolving perception of Bank's actions

This section will focus on the varying perceptions of the Bank of England's steps in improving their notes and highlight the loss of control over the issue of money from government to the banks, echoing the process studied by Desan.[141] This Chapter has already

[141] Christine Desan, *Making Money: Coin, Currency, and the Coming of Capitalism* (1st edn, Oxford Scholarship Online 2015) <http://www.oxfordscholarship.com.libproxy.york.ac.uk/view/10.1093/acprof:oso/9780198709572.001.0001/acprof-9780198709572> accessed 30 October 2017.

established that the Bank's response to the rise of acceptability and adoption of banknotes was to prioritise the notes' scalability over their security. Various justifications for this approach have been put forward throughout this chapter, namely the costs of implementing certain elements in manufacturing banknotes, to the Bank making the conscious decision to retain the simple design it had established in order to make it more recognisable to the wider public. Yet this approach was highly criticised by newspapers at the time as the lack of action on the improvement of notes sat in stark contract with the increase in forgery prosecutions and the bloody toll it took.

During this timeframe, forgery, and the uttering of forged notes was a capital offence. The clamour surrounding the Bank of England's attitude towards the improvement of notes and its pursuit of forgery culminated in 1819 when the increasing number of capital punishment drew the attention of government. The Government's indirect response to the Bank's approach to forgery is clearly explored in Handler's account[142] of the establishment of the Select Committee on the Criminal Laws.[143] Yet the increase and publicity of prosecutions of forgery led to a rising anger towards the lack of action taken by the Bank of England *towards* its banknotes and this has not been explored extensively in the literature.

Mr Beaumont in his submission to the bank on April 25th, 1818 stated that: "a very unfavourable opinion had been entertained of the conduct of the Bank in account of the Directors not having adopted any one of the Plans which had been submitted to them."[144] This

[142] Phil Handler, 'Forging the Agenda: The 1819 Select Committee on the Criminal Laws Revisited' (2004) 25 Journal of Legal History 249.
[143] House of Commons (n 102).
[144] Bank of England, *Secretary's Department- Committee to Examine Plans for the Improvements of Bank Notes- Minutes M5/246* (n 65). 54-55.

was rebuked by the Directors who felt that it was their duty, "notwithstanding popular prejudice and clamour, to withhold their approbation from every plan, which in their consciences they believed would not actually protect the public against the forgery of Bank Notes."[145] This perspective on whether to innovate banknotes highlights the Bank's monopolistic decision-making process which was not swayed by public clamour. This unfavourable opinion is witnessed in many periodicals at the time, but the *Black Dwarf* stands out with its scathing criticism in March 31, 1818 of the Bank's actions.

The article begins by denouncing the Directors on their inhuman conduct and argues that if the Bank had been satisfied with anything but the sentence of life for offences against Bank of England Notes, they would have escaped the hatred of the public and be labelled as honourable men.[146] It would seem that the Directors' actions were going against the public's 'acceptable' way of maintaining financial stability during this unstable period and thus the periodical argued that their actions had the opposite effect of maintaining public confidence in the financial system by focusing so heavily on deterrence. As such, the Black Dwarf denounces the gradual loss of control over money from government to private actors by stating that: "At first the instrument, the Bank is now the master of the state."[147] This shows the varying opinions of members of the public on the shift from coin and bullion to paper money: the newest technological innovation of money at this time. Indeed, when this article was published in 1818, it was still widely acknowledged that coins were legal tender and that no other instrument could have similar functions. Indeed, the article is sceptical over the Bank's control over the issue of money; whereas the Bank and government held: "the power of manufacturing wealth

[145] ibid. 54-55.
[146] TJ Wooler, 'Letters of the Black Dwarf to the Directors of the Bank of England' (1819) 3 *The Black Dwarf* 1. 1.
[147] ibid. 1.

to any amount, without any restriction, but your own discretion. A government forcing the people to take your paper as a legal coin-and protecting it with severer penalties than the currency of the kingdom."[148] The strong opinion voiced by the Black Dwarf suggests dissenting views on paper money and the role of the state in *forcing* its adoption. The newspaper often labelled banknotes as "valueless" or holding "idle promises".[149] This not only echoes the resistance that certain members of society had to banknotes but also highlights the great increase in scalability caused by the Restriction Period, bringing it to the attention of some "unpractised minds".[150]

This narrative is reiterated in an earlier issue of the Black Dwarf, published on March 24, 1819, which criticised the Bank for recommencing its vindictive proceedings.[151] More importantly for this section, it clearly alludes to the supposed steps being taken by the Bank to improve banknotes in order to reduce forgery.[152] This process, and a report from the Royal Commission on the means of preventing forgery, is labelled as a smokescreen. Indeed, these reports were "published merely to keep up the deception, and to lull the public mind into a deceitful reliance on the honour, and mercy, and humanity of that overgrown monopoly, which has not a spark either of the one or the other."[153]

The government report[154] mentioned in the previous paragraph is worth exploring in more detail as it further highlights the contemporary challenges faced by the Bank in the

[148] ibid. 1.
[149] ibid. 1.
[150] ibid. 1.
[151] TJ Wooler, 'More Murders! - The Bank Hanging' (1819) 3 *The Black Dwarf* 1. 1.
[152] ibid. 1.
[153] ibid. 1.
[154] Royal Commission, 'Report of the Commissioners Appointed for Inquiring into the Mode of Preventing the Forgery of Bank Notes' (1819) 39. 73.

innovation of a new form of money and in dealing with subsequent criminal activities. Moreover, this is the first governmental report dealing directly with ways to improve banknotes, since this originally fell to the Bank of England, and local banks, to take control over the issuance of notes. The report focuses mainly on the same proposals submitted by the public to the Bank that we have explored previously.[155] It is the first instance where the decision-making process of the Bank is officially reviewed. The Commissioners looked at the course of action pursued with respect to the prevention of forgery, but also to the detection and punishment of the crime.[156] The report goes on to commemorate the Bank's prompt responses to their inquiries[157] and concludes that: "*no one of these could have been adopted with such as prospect of solid advantage to the public, as would compensate the evils necessarily attendant upon a change.*"[158] It would be fair to assume that this is a biased observation since the majority of the proposals reviewed by the Committee were directly provided by the Bank itself. However, it does show that the government were ready to support the decisions, and thus the lack of action, made by the Bank. By doing so, it cements the view, mentioned by critiques of the Bank's action, that it had garnered a monopoly over its decision process and further shows the gradual loss of control from government over money.

Interestingly, in developing their reasoning to not recommend any plans, the government Committee draws attention to key facts not often taken into consideration by the public. Indeed, it was believed that forgery was generally and extensively practiced by persons without talent or money, and it was under this assumption that the proposals for the improvement of notes by the public had been made.[159] The Committee believed that "the great

[155] ibid. 74.
[156] ibid. 74.
[157] ibid. 74.
[158] ibid. 74.
[159] ibid. 75

quantity of forged small notes which have lately been found in circulation, have all been issued from a very few plates only; and that the fabrication of them is chiefly confined to one particular part of the country."[160] This resulted in a great number of utterers being constantly brought to justice, while the actual forgers were rarely detected.[161]

When assessing the Bank's steps, the Committee similarly observed the two major issues also identified by the Bank. The first was that "the public suffer themselves to be deceived by very miserable imitations."[162] The employment of superior artists in the formation of a new note would therefore not be easily differentiated by the public.[163] Secondly, due to the increasing number of small notes being circulated, a large number of plates must be prepared and maintained in order to preserve as much as possible the identity of the notes. This results in precluding the application of many ingenious plans, even though they could have been successful in severely limiting forgeries.[164]

However, the government was hopeful that a speedy solution would be found and placed their trust on the submission of Applegath and Cowper. In its final Report on February 18th, 1820,[165] the Committee stated that the adoption of Applegath's plans and machinery would seriously limit the ability of less talented forgers to engrave copper plates, which were the cornerstone of the tools used in the forgery of banknotes. Moreover, this method would enable the Public a regular supply of Bank of England Notes in sufficient quantity and executed in such a manner that it would render them fit for general circulation amongst all classes of

[160] ibid. 75.
[161] ibid. 75.
[162] ibid. 75.
[163] ibid. 75.
[164] ibid. 75.
[165] Royal Commission, 'Final Report of the Commissioners Appointed for Inquiring into the Mode of Preventing the Forgery of Bank Notes' (1820) 64.

Society, reflecting the issues identified in the previous Report.[166] The government's perception of forgery was that it was "hurtful to public credit, and to the community at large."[167] As a result, it was assumed that Applegath's method would create suitable obstacles so that the 'superior talents' who were able to reproduce these notes would not be in such distressed circumstances as to feel the inclination to do so.[168] Although the government was aware that no form of Note could be inimitable, it believed that this innovation, coupled with the fear of the harsh punishments of forgery, would be enough that no artist of such talent would be inclined to forge notes.[169] Messrs Applegath and Cowper's plans were never implemented. On August 10th, 1821 the Committee unanimously agreed that Mr Bawtree's imitation was "quite fatal to Messrs Applegath and Cowper's Note."[170] Contrary to the government's assumption, the high capability of the Bank's engravers coupled with the Bank's policy of rejecting any recommendations that were successfully imitated ensured that no lasting, or drastic change, to their notes were made during this timeframe.

When focusing on the interactions between money and crime, both the Bank and government recognised the importance of the scalability of notes in order to maintain the security and operation of the financial system throughout the Restriction Period. The emphasis was thus placed on a strong and simple identity which could be recognisable to every class of society. Rather than focusing on the interactions between regulation and crime to fill the gap left by the lack of security of banknotes, it seems that government did advocate for the prevention of forgery through the improvement of the security of banknotes as a way to limit

[166] ibid. 2.
[167] ibid. 2.
[168] ibid. 2.
[169] ibid. 2.
[170] Bank of England, *Secretary's Department- Committee for Investigating Prevention of Forgery of Bank Notes- Minutes M5/261* (n 44). 75.

the consequences of the course of action dealing with the pursuit and punishment of forgery. Yet as the Bank's actions show, the pursuit of the high standard regarding the 'required purpose' severely limited the adoption of the technologies and methods proposed, even when they were supported by the population, artists, and government. The variety of opinion and the differing approaches in dealing with this challenge also highlights the rising complexity in the prevention of monetary crimes and the interrelationships subsisting between money and crime. These factors were often not acknowledged or understood by those submitting technological innovations at the time, and even studies looking at the evolution of money and the prevention of ensuing criminal activities, may not have fully grasped.

This dichotomy of perceptions regarding the Bank of England's decision-making process clearly shows the monopolistic control of the Bank over every aspect of its instrument and highlights the consequences of the key factors explored in this chapter to the wider public. The Black Dwarf and the Government report hints at the effect of paper money's transition from exclusivity and the decision made by the Bank of England to keep their simple design is the result of the Bank encouraging their use. In particular, this section not only demonstrates the erosion of control experienced by government in relation to money, explored by Desan in great detail, but also shows the shift of trust towards commercial banks issuing their own monetary instruments. More importantly, it highlights the *degree* of control on the improvement of technology held by the Banks. What is striking is the Bank of England's lack of accountability, not only in regard to the technical standard of the notes in order to prevent forgery, but also in relation to their 'ruthless' approach towards forgers and utterers. For example, the trust placed by the government committee in Applegath and Cowper's improvements, with the report clearly hinting that they had a fuller picture of the challenges

faced by the Bank, was ultimately disregard by the Bank's Directors, with little ramification or explanation.

6. Conclusion

This chapter has shown that the efforts taken by the Bank of England to combat forgery was focused on scalability rather than security and more complex to implement due to the uncertainty on the number of notes required. This dilemma, coupled with the practicalities of introducing watermarks, new designs, better paper, or different engraving plates, all seem to add weight to the Bank's position in limiting its actions in preventing forgery through technological innovation. The quantitative data has shown that this process was also slower to respond and less reactive to incidences of forgery than originally perceived. Yet, regardless of the lack of improvement of notes made by the Bank of England, the experience from country banks who focused on the security of notes rather than its scalability showed that new technologies for the improvement of notes were introduced and used successfully in limiting forgery. Finally, the approach taken by the Bank of England did not meet universal approval as the dichotomy of opinion clearly shows that some members of the public were not supportive by this lack of action.

Scalability became the major challenge faced by the Bank in deciding whether to innovate and increase the security of their notes. The surge in demand and number of individuals having access to this new form of money, coupled with the *centralisation* of control in improving banknotes, hindered the process of monetary innovation during this period at the expanse of the security of banknotes leading to the Bank focusing on the *quantity* rather than on the improvement of banknotes. In aiming to maintain financial stability, the Bank prioritised one course of action over the other, it focused on deterrence and on prosecuting forgery at great

costs and did not choose to react rapidly by improving technical elements in banknote production to prevent the crime from occurring. In exploring in detail the reasonings behind the lack of technological change to monetary instruments in relation to monetary crime in this case study: *the experience from the Bank of England has shown that this relationship should strike the right balance between scalability and security.*

Due to the Bank of England banknote being perceived as being towards the top of a hierarchy of money existing at the time, it was important that the Bank was *seen* to take action during the Restriction Period. It highlights the triangular trust relationships discussed in Chapter 3, as the Bank's efforts, as the issuer, was directed in ensuring the banknote fulfilled its function as a medium of exchange. To do so, the Bank took steps, both in prevention and deterrence, to make sure genuine notes were in circulation and spent considerable resources and time in combatting forgery and other offences that could severely affect trust in using this novel monetary instrument as mode of exchange/transmission. This begins to show the variety of activities that undermined trust in this emerging monetary system, and the different elements that could pose a threat to financial stability that were not solely confined to mere forgery: possession, uttering, the creation of bank paper, engraving that was similar to the design of the Bank of England note. It adds weight to the repositioning of the meaning of monetary crime to encompass these types of activities rather than focusing on specific offences and its direct effect on money. This chapter has therefore begun to capture the complex interactions between the activities causing a threat to monetary systems and how the use of monetary crime can provide new perspectives in these relationships.

Ultimately, this chapter has also shown that the Bank's narrative and justification for their lack of action should be contested and is caused by the Bank not being able to balance the two main strategies it had recourse to in order to maintain trust in its instrument during these challenging times: prevention or deterrence. A crucial factor in the Bank's indecisiveness was the monopolistic and centralised control, and lack of accountability it had, in *making* these decisions, coupled with the ability to shoulder any losses arising as a result. The private forms of regulation, from technological innovation, to paying Freshfields to privately prosecute forgers and utterers, coupled with forgery and paper creation statutes, stemmed primarily from the Bank of England itself and cemented the Bank as a guardian of trust. As such, maintaining trust in the Bank of England note and protecting its functions was not confined to criminal offences and legislation. The decisions made by the Bank were motivated by maintaining the stability of its monetary system and promoting it use. Yet by analysing its interaction with monetary crime, the findings of this chapter lay the foundations for a central theme permeating throughout this thesis: the difficulty in regulating Bitcoin and other forms of money stems from this historical tendency to have centralised oversight over monetary systems. Although this trend is not new, with coins historically being firmly under the remit of the sovereign authority, it does highlight the difficulties that such a framework posed. As the next chapter on Barclaycard will highlight, achieving this balance is made easier when decisions on the security of a monetary instrument is made by decentralised actors. The developing theme that will be explored from this chapter to the next will be the notion that decentralisation indirectly promotes security because decentralised actors have less concern for scalability.

CHAPTER 5: BARCLAYCARD AND THE RISE OF DECENTRALISATION

Very little has been written on the rise and history of England's first credit card: Barclaycard. More generally, the aim of the literature studying electronic modes of payments has been focused on the economic drivers and ramifications behind the rise of this new mode of payment, rather than establishing the social, economic, and cultural circumstances of their emergence as a new form of money. This chapter will begin to show the rise of four key *analytical threads* permeating through the historical comparative analysis between my case studies. Firstly, previous or existing monetary instruments are already institutionally *flexible* to enable the *integration* of new monetary technologies within their current framework. Secondly, that a pluralist system of monetary instruments fosters *healthy* innovative competition. Thirdly, once the monetary instrument has become widely accepted, monetary crime, alongside implementation costs and financial concerns, plays a *contributing* factor in the decision-making process of improving, adopting, and investing in monetary technology. Finally, various degrees of decentralisation within a monetary system (in decision-making, investment in technology, and actors) maximises the opportunities to detect and combat monetary crime.

This last point in particular points towards the wider original conclusions underlying this chapter: a balance between security and scalability was achieved to a certain extent by the preventive approach prioritised by Barclaycard because it focused on investing in technology throughout the monetary system rather than the card itself. A contrasting approach from the

monopolistic control exerted by the Bank of England analysed in the previous chapter. These developing themes will also highlight the cycle of innovation between technological developments in money and crime. Indeed, by looking at the types of fraud that undermined and adapted to the functioning of different *functions* of Barclaycard, this chapter will build upon the notion that the scope of activities undermining the *same* monetary instrument should not be seen as a unitary phenomenon. This is supported by fraud authors such as Levi but this chapter will go further by engaging with Barclaycard's other functions than as a credit instrument and analyse how those *functions* were widely used and abused. This will further the repositioning of the meaning of monetary crime that encompasses the various activities that undermine financial stability and the functioning of a monetary instrument. Finally, it will show that decentralised actors overlooked by a centralised decision-maker facilitates the detection and the prevention of monetary crime.

Similarly, to the previous analytical chapter, I will be drawing from various reports that I examined within Barclays' archives. This original dataset will allow me to gain an understanding of the internal mechanisms and decision-making processes that underpinned the rise of Barclaycard as a new monetary instrument and track its journey to systemic status and how it responded to the rising threat of monetary crime. Indeed, emphasis has traditionally been placed on statistical models mapping the rise and fall of cash against non-cash transactions.[1] More recently, the rise of credit cards has been explored in relation to the valuable *social* data captured by card transactions, and how this has become a driving force behind the rise of Big Data and of ongoing privacy concerns.[2] This section will explore

[1] For example see: David B Humphrey, Lawrence B Pulley and Jukka M Vesala, 'Cash, Paper, and Electronic Payments: A Cross-Country Analysis' (1996) 28 Journal of Money, Credit and Banking 914.
[2] For example see: Josh Lauer, 'Plastic Surveillance: Payment Cards and the History of Transactional Data, 1888 to Present' [2020] Big Data & Society 1.

Barclaycard's technological advances and rise to acceptability during the period between 1966 and 1989. This is due to the archives only being able to provide information up to that period of Barclaycard's history because of confidentiality in the Bank's business practices from the 1990s to the present. The focus on the early period of Barclaycard also reflects the common subject matter and problem formulation of this project and mirrors the challenges experienced by both the Bank of England notes during the Restriction Period and the current challenges faced by Bitcoin since 2009 when balancing scalability, acceptability, and security.

This chapter will draw on the factors explored in the previous chapter in relation to Bank of England notes and use them as a lens to analyse the interactions between Barclaycard and monetary crime, with a particular focus on fraud. I will pay attention to the same six key factors explored in the previous chapter. Structuring the analysis in this way will provide coherence across the case studies, thus facilitating comparison; revealing the key elements contributing to a specific monetary instrument rising above other alternatives to become accepted by the public, market agents, and government bodies. As a reminder, these factors are both drawn from the experience and findings from the previous case study; and build upon and expand on the pre-conditions set out by Batiz-Lazo et al.[3] They consist of 1) transition from an object of exclusivity; 2) demystification & encouragement of use; 3) support from senior management; 4) shouldering losses; 5) investment in technology; 6) sharing of practices & information. As such, this chapter will closely compare Barclaycard's perspective of their own operation in providing 'plastic money' with the Bank of England's experience in providing paper notes to the public, correlated with academic accounts on the adoption of new card technologies.

[3] Bernardo Batiz-Lazo and Gustavo A Del Angel, 'The Ascent of Plastic Money: International Adoption of the Bank Credit Card, 1950–1975' (2018) 92 509. 510.

This chapter will be separated in three sections. The first will set out the factors leading to the *acceptance and adoption* of Barclaycard. Then it will reflect on the various steps taken by the bank to improve the card's *scalability and accessibility*, and ultimately explore how the Bank balanced the *security* of its monetary system. By doing so the level of *decentralisation* of decision-making will be expanded to incorporate a rising number of actors in maintaining the stability and trust of both Barclaycard but the credit card market as a whole. The last two sections will focus on the strategies adopted by the Barclaycard department to combat the formative challenge of fraud in England. It will clearly explain the ways in which a Barclaycard was used at point of sale, highlight that fraud is not a unitary phenomenon, and reflect on the guidance provided both internally and externally on its use. This will help construct a narrative on how fraud began to feature more prominently on reports and board papers, how it influenced the decision-making process of the introduction of new features and show whether these initiatives had any impact on fraud losses.

1. The Rise of Barclaycard

1.1. The exclusivity of credit cards in Britain in the 1950s

Supported by documents from their archives, this section will show that the factors regarding the *scalability and accessibility* of credit cards mentioned above are echoed in the early stages Barclaycard's evolution. By adopting this approach, this section will first provide a brief history of the rise of Barclaycard based on the archival sources found at Barclays, providing some context, and picking out the key factors that contributed to Barclaycard's dominant position in the credit card industry. As such, the next subsections will outline how Barclaycard transitioned from being an object of exclusivity, the steps the Bank took to demystify the use of credit for the wider public, and how the Barclaycard department relied on

the ongoing support from senior management in order to shoulder the losses that it incurred in the years after its launch. Finally, this section will briefly examine the internal technological innovations that occurred over 30 years of Barclaycard, before highlighting some external circumstances that also helped cement Barclaycard has the first successful credit card in England.

Barclaycard did not arise out of a vacuum. Before the launch of Barclaycard in 1966, there was a lack of knowledge of credit cards in the UK and a perception of exclusivity towards them as they tended to be used by business elites or those who had come across them in America through Diners Club USA. Yet as far back as the early 1950s credit cards were freely in circulation, although not in very large numbers.[4] Indeed, according to a report in Barclays' archives, credit cards were first introduced to the UK in 1951 when Finders Service Club wrote to Diners Club in America asking permission to set up a similar scheme.[5] Yet the limited scope of this scheme meant that it remained to be seen how this "plastic money"[6] would be accepted in Britain.[7] Shortly after, a company named *Credit Card Facilities* was set up and operated until 1962 when it merged with *Finders*.[8] The company then went public in 1964 as *Diners Club of Great Britain*. In 1965 Westminster Bank took a 49% stake in this new venture.[9] Meanwhile, in the 1960s, British banks were undertaking extensive market research on the viability of a credit card industry in the UK.[10] In September 1965 the National Provincial Bank introduced the first cash card and finally Barclays launched the first British all-purpose credit

[4] Barclays, 'Typescript on History of Barclaycard 1159-0036'. Credit Cards - Page 2.
[5] ibid. Credit Cards - Page 2.
[6] ibid. Credit Cards - Page 2.
[7] ibid. Credit Cards - Page 2.
[8] ibid. Credit Cards - Page 2.
[9] ibid. Credit Cards - Page 3.
[10] ibid. Credit Cards - Page 3.

card as Barclaycard on June 29th, 1966.[11] Concurrently, American Express opened offices in 1963, launched in 1965 and by 1967 was being promoted by Lloyds and Martin's Banks.[12]

1.2. Bringing credit cards from America: A question of trust

This general lack of awareness on the use, opportunities, and functioning of credit cards, can also be seen in the team sent by Barclays to the Bank of America to ascertain the viability of credit cards in England.[13] This is important as it underscores the lack of knowledge and uncertainty behind the idea of credit from senior management at the time, the monumental task for Barclays of importing and introducing this new monetary instrument to the public, and offers a glimpse behind the curtain of a key moment in England's monetary history. I found an account of this team's experience in America in Alan Duncan's oral history transcripts held at Barclays' archives.

What is striking is that Barclays' research into credit card opportunities was only led by a general manager rather than the incentive being spearheaded from the top of the Bank.[14] Derek Wilde was instrumental in bringing this technology to the UK and directly hired the team that went to the Bank of America to ascertain its worthiness for British markets. Wilde had been to the US and had seen the rise of Diner's club and American Express.[15] The idea of paying for a range of goods and services on credit, without the need to settle the whole sum monthly, appealed to Wilde as he believed it could give Barclays a competitive edge in the UK.[16] What is less known is the story of the team Wilde sent to America to look at the viability

[11] ibid. Credit Cards - Page 2.
[12] ibid. Credit Cards - Page 2.
[13] Jessie Campbell, Interview with Alan H Duncan, 'Barclays Group Archives Oral History Transcript Ref: 725/3' (11 August 1998). Page 8.
[14] ibid. Page 8.
[15] David Lascelles, 'A Walk on the Wilde Side' [2016] *The London Institute of Banking & Finance*. 2.
[16] ibid. 1.

of this business venture. The team was made up of a banker and a computer programmer: Alan Duncan, with the latter being the only member having prior knowledge about credit cards due to his exposure to Diners Club UK. The team were granted free and open access of the Bank of America's credit card operations.[17] After only a few days, the team reported that from a banking perspective, due to the high interest rates, it would be good for business in the long run. From a computing point of view and the technological side of credit card operations, the Bank of America already had a solid system in place and so it was crucial to purchase the computer programme from them to process all this information.[18] Barclays bought the licence for a mere £25 000, a bargain at the time for such a product, which was then 'Anglicised' to work for UK operating systems.[19]

Concurrently, it is reported that after receiving this feedback from the team, Wilde had a very difficult time passing it through the Directors and Senior Management of the Bank.[20] Astonishingly, it is believed his recommendations to the board was only 6 pages long with a timetabled launch of this new service in 6 months.[21] This enthusiasm for this new technology sat in stark contrast with the sentiment of exclusivity that cards had during that period, with a particular belief that people in the UK would not believe in having 'things in the never never' and as such there was still strong opposition to both the technology but also the very concept of credit cards around this time in the 1965s.[22]

[17] Campbell, Interview with Alan H Duncan (n 13). Page 8.
[18] ibid. Page 8.
[19] ibid. Page 26.
[20] ibid. Page 8.
[21] Lascelles (n 15). 1.
[22] Campbell, Interview with Alan H Duncan (n 13). Page 8.

Finally, the board and senior management, on Wilde's advice and after much persuasion, ultimately trusted in this new venture and supported it. The next 6 months also represented a gamble for the Bank. Indeed, Barclays still forged ahead, even without a dedicated computer purchased able to handle the operation of the business, having to rent computers in Germany, flying back and forth data discs, before a processing centre in Northampton was converted to accommodate this brand-new department.[23] This operation was also undertaken with the knowledge that the Bank of America had lost heavily in the early years, and that market agents would resist having to sell merchandise effectively at a discount to pay for the service charge.[24] Uniquely for a banking service in the UK: "Wilde had decided that Barclaycard would be an independent operation and that card issuance would be centralised: all decisions about who would get the card, and what credit limit they should have, would be taken in Northampton."[25]

Barclaycard therefore faced a steep challenge demystifying the use of this new monetary instrument in the face of scepticism and untrusting views from the general public and business world towards both paying by card and the notion of credit. Indeed, 10 years after its introduction, the directors reflected on Barclaycard's historical operations and its remarkable growth in a 1977 Barclays' board of director meeting.[26] The transcript clearly highlights the shift in popular opinion and understandings of cards that occurred in the span of Barclaycard's first few years. Indeed, the board acknowledged that the use of pieces of plastic as credit cards,

[23] Lascelles (n 15). 1.
[24] ibid. 1.
[25] ibid. 2.
[26] Barclays, 'Board Papers for Meeting of 1977 Including Brief History of Barclaycard 0300-0939'. Director's Inspection Report: Barclaycard Department - Brief for the UK Board - 12th May 1977 - Page 1.

was based on an entirely new concept in the country, evolving from a bright idea in 1966 to having profits of £6 million by 1977.[27]

This brief history of Barclaycard's introduction into the British market clearly highlights the underlying factors underpinning the early stages of emerging monetary instruments: firstly, the necessary level of support from senior management for such a new commercial venture, and secondly, the early perceptions of exclusivity often associated with new monetary technologies. Despite the early challenges it faced, Barclaycard became another innovation in monetary technology that successfully transitioned to general acceptance. The starting point of this narrative journey was a country dubious with the notion of credit, to public endorsement of commercial credit such as the 1971 government-commissioned Crowther Report, culminating in a continuous rise of individuals applying for Barclaycards.[28] The next subsection will further explore how the Bank actively worked to demystify the use of credit card as a way to pay, and further highlight the necessary support provided by the Bank's senior management in shouldering these early losses.

1.3. Demystifying Plastic Money

The decision to adopt credit cards was not an easy one. It was at the time an unproven product, with many banks wary of the losses that this system could incur.[29] It was believed that credit cards' "unbridled use, resulting in significant losses, rising delinquency, and adverse regulation, led contemporary bankers to be cautious."[30] Yet, from Barclays' perspective, a report published in 1978 acknowledged that the original misunderstanding on 'plastic money'

[27] ibid. Director's Inspection Report: Barclaycard Department - 3rd May 1977 - Page 1.
[28] Lascelles (n 15). 2.
[29] Batiz-Lazo and Angel (n 3). 521.
[30] ibid. 532.

had, after twelve years, diminished.[31] Indeed, it described that since 1966 attitudes to credit cards had changed.[32] In order to actively demystify Barclaycard as an object of exclusivity and the negative perceptions it originally held, advertising and marketing was actively pursued. It took 6 years of hard selling and consumer education, coupled with the launch of Access (Barclaycard's competitors) to finally motivate the general public and businesses into a credit card way of thinking.[33]

The growth of Barclaycard and its increase in scalability can be visualised through the number of cardholders and market agents accepting Barclaycard for payment of goods and services. At its launch the Bank was targeting 30 000 market agents accepting the cards coupled with one million cardholders being actively sought out through 'aggressive' marketing.[34] As such, much emphasis was placed in recruiting and pushing market agents to accept Barclaycard for payment. The benefits put forward by the Bank were twofold: to lower the risk of fraud and bad debt from merchants, but also, to lessen the opportunity of these merchants to run their own credit schemes.[35] Indeed Barclaycard sent unsolicited cards via the post to attract customers.[36] This tactic was used by many credit cards companies across the world to raise awareness of the new monetary instrument and get people familiar with the technology. Batiz-Lazo et al. reflect on this singular approach and agree that the "mass mailings of unsolicited cards played an important role in establishing the bank credit card market."[37] This practice was later made illegal by the Consumer Credit Act in 1974.

[31] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). Barclaycard Twelve Years On - Page 1.
[32] ibid. Barclaycard Twelve Years On - Page 1.
[33] ibid. Credit Cards - Page 2.
[34] ibid. 20 Years of Barclaycard - Page 1.
[35] ibid. Credit Cards - Page 4-5.
[36] Lascelles (n 15). 2.
[37] Batiz-Lazo and Angel (n 3). 532.

By further reflecting on Barclaycard's approach to scalability, the conceptual discussions about money as a social fact and the notion of acceptability from chapter 3 are brought to the fore and can be witnessed in relation to how the card's early success was dependent on adoption by both consumers, and market agents..[38] Many of the annual reports for Barclaycard's operations focus on the metrics of market agents accepting Barclaycard for payment, and the number of cardholders using this new way to pay. For example, by 1972, Barclaycard ultimately reached 1.7 million cardholders and 52 000 merchants.[39] By the 1980s, Barclaycard's growth had accelerated even further after joining VISA and there were over 5 million Barclaycard holders and more than 150 000 merchants accepting the card.[40] This exponential push for scalability and acceptance did have some drawbacks. Barclaycard incurred losses for the first 5 years of its implementation.[41] By 1977, Barclaycard was no longer treated as an additional service which was offered by Barclays but as a "commercial venture which must justify its existence by its own profit record."[42] Indeed, Barclaycard was originally a semi-independent department within the wider banking group, and the Directors' inspection report from 1977 stated that for the last 10 years Barclaycard "was riding on the bank's back."[43] As such, the Bank's willingness to shoulder any losses arising from promoting the card's use, bolstered by the ongoing support of Barclays' Board of Directors, should not be overlooked and shows the Bank's willingness to trust in this new monetary system.

The next step for the continuous success of Barclaycard was to upgrade and maintain the service provided, improve the security of the card to combat any potential fraud, and

[38] ibid. 511.
[39] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). Credit Cards - Page 3.
[40] ibid. 20 Years of Barclaycard- Page 2.
[41] Batiz-Lazo and Angel (n 3). 518.
[42] Barclays, 'Board Papers for Meeting of 1977 Including Brief History of Barclaycard 0300-0939' (n 26). Director's Inspection Report: Barclaycard Department - Brief for the UK Board - 12th May 1977 - Page 1.
[43] ibid. Director's Inspection Report: Barclaycard Department - Brief for the UK Board - 12th May 1977 - Page 1.

promote the benefits of using cards as opposed to other forms of money. The next two subsections will look at the Bank's approach towards the improvement of new technologies and identify the decision-making processes required to push for these changes. This will be first explored from an internal perspective, before reflecting on some key external factors that helped spearhead the ascent of Barclaycard in the UK and of "paying with plastic."[44] As such, the next subsection will begin by investigating Barclays' capacity to innovate the design of cards, whilst also adopting and implementing technological change in processing transactions and card operations.

1.4. Brief Overview of Technological Innovation of credit cards from 1960s to the 1990s

The previous subsections have looked at the processes and factors behind Barclaycard's rise to acceptability as a monetary instrument by the general public and analysed its challenging formative years. This subsection will take an in-depth look at the early advances in technology for Barclaycard up to the 1990s due to the archives only being able to provide notes, meetings records, reports, and correspondence revealing the decision-making processes for that timeframe due to confidentiality. Despite this, it is worth acknowledging the wider scope of innovations that occurred to cards after the 1990s, with the proliferation of online use, and further modernisation of their operations, card technology, and services. As a brief overview, in 2007 the very first UK contactless payment card was launched,[45] combining it with the Chip and PIN function that had been introduced in 2003.[46] In 2011, the first mobile payment device entered the UK with Orange and Barclays launching 'Quick Tap'.[47] It is worth noting that these

[44] Batiz-Lazo and Angel (n 3). 532.
[45] Barclays, 'Ten Years of Contactless' (4 September 2017) <https://home.barclays/news/2017/09/ten-years-of-contactless/> accessed 26 November 2020.
[46] Emily Sorensen, 'The Historical Roots of Electronic Card Machines' (26 July 2019) <https://www.mobiletransaction.org/history-of-credit-card-machines/> accessed 23 July 2021.
[47] Barclays, 'Ten Years of Contactless' (n 45).

technological innovations were applied to both credit and debit cards, further diversifying the types of monetary instruments being used by the public. In conjunction with the rise of PayPal, google pay and apple pay, these advances now represent the majority of ways in which payments for goods and services are made in the UK.

Despite the losses incurred by Barclaycard in its early years and due to fraud, technological innovation did still occur. Contrary to the banknotes explored in the previous chapter, significant technological changes were actively made, and at three levels of the monetary system: firstly, on the design and features of the cards themselves, secondly on the corresponding infrastructure supporting the monetary instrument, including the computers and technology to facilitate card operations, and thirdly on researching and developing devices to help market agents speed up transactions and detect fraud.[48] As a result, there is a rise in investment in the monetary system as a whole rather than the instrument itself and in contrast to the Bank of England, what becomes apparent is a gradual dilution of centralised decision-making stemming from the increasing complexity in using, issuing, and maintaining this new monetary instrument.

As argued in Chapter 4, the Bank of England maintained the centralisation and exercised monopolistic control over every aspect of decision-making concerning their banknote: from the improvements of their notes to their strategy against forgery. As the previous chapter has made clear this was ineffective in increasing the banknote's security. This is now significant for understanding how Barclaycard experienced and manifested technological change in its short history. For Barclaycard, due to the various technological

[48] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). Barclaycard Twelve Years On - Page 1-2.

changes made throughout its short history, it is possible to also identify different *categories* of decision-making affecting various elements of Barclaycard's monetary system mapping onto the different levels of technological changes observed above. The first looks at the centralisation of decision-making over changes to the monetary instrument itself, its features, and its growth. The second concerns the centralisation of control over the operations of the monetary instrument and the monetary system. Finally, the third looks at the centralisation of actors and features involved in dealing with monetary crime. This subsection will begin by providing an overview of improvements made by Barclaycard on the card itself, followed by innovations on its operations. These technological advancements overlap and therefore provide a clear picture of Barclaycard's approach towards scalability and security, contributing towards the credit card's acceptance and adoptability by businesses and the general public. A clear account of *how* to pay with Barclaycard will be undertaken in the next section as it will be the locus in which I will analyse the bank's rising awareness of fraud. This subsection focuses on exploring the technological innovations on the card itself.

The original Barclaycard issued in 1966 consisted of blue, white and gold stripes with the white one being used as a signature strip and characters on the card were embossed in white.[49] (Figure 1) Barclaycard had in effect a monopoly on credit cards services until other banks banded together in 1972 to launch Access.[50] In 1973 a new look Barclaycard was introduced with the card number moved to the central white panel, and embossed characters capped in gold, with the aim to make the card more distinctive to the public.[51] In direct response to the competition, Barclaycard also developed and adopted in 1974 the function of cheque

[49] Barclays, 'Barclays Archives Chronology 1966-1990'.
[50] Barclays, 'Barclaycard Circulars 29/1579 (2)'. 1972 - p129.
[51] Barclays, 'Papers Relating to Barclaycard Operations (1) 0080-2616'. News from Barclays - *'New Look' Barclaycard* - April 16, 1973.

guarantee card as well.[52] Indeed, from 2nd of September 1974, Barclaycard offered the then unique service of the dual-purpose card and became valid as both a credit card and a cheque guarantee card for Barclays' customers.[53] This development is highlighted in the September 1974 Barclaycard Newsletter as representing a turning point for the Bank, which in conjunction with the adoption of new computing systems, helped fight off the impact of the credit squeeze on Barclaycard's profitability.[54] Indeed, a key element in the rise of acceptance of Barclaycard was the merging of cheque guarantee features in response to both competition from other banks and demand by customers.[55] As such, by the late 1970s all major British banks deployed both check guarantee and credit cards.[56] It is worth reminding the key differences and functions arising out of these different plastic cards which has been touched upon in the literature review. Barclaycard is a *credit* card offering the purchase of goods and services by credit, which is then repaid, in instalments and with interest, every month. A cheque guarantee card was used to validate the identity of an individual purchasing goods or services by cheque. This paved the way to the introduction of debit cards later in the 1980s, which would draw directly from customer's clearing accounts.

[52] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). 20 Years of Barclaycard - Page 2.
[53] Barclays, 'Barclaycard Circulars 29/1579 (2)' (n 50). 1974 - p164.
[54] Barclays, 'Barclaycard Newsletter 1974 PBB27'. September - Page 2.
[55] Barclays, 'Papers Relating to Barclaycard Operations (2) 0080-2617'. News from Barclays - *Barclays Bank introduces Cheque Guarantee Service* - August 22, 1974.
[56] Batiz-Lazo and Angel (n 3). 532.

Figure 1: 1966 Barclaycard

By January 1975, card design changed to include a security signature strip, the white signature strip had been replaced by a special strip with the words 'Barclaycard' printed diagonally at regular intervals.[57] On 15th April 1977, Barclaycard formally joined VISA and became a founding member of the international system.[58] Card designs changed accordingly to incorporate VISA marketing, with the VISA sign appearing on the white strip and the signature strip being move to the back of the card.[59] The 1979 Newsletter hints that cards with magnetic stripes were being issued while reiterating the support that Barclaycard continued to receive from Barclays and its branches, enabling it to continue innovating and contributing to the bank's profits.[60] In their annual report of 1984, Barclaycard raised awareness of the design improvements that were being made on their cards and were being introduced from the 16th of July 1984.[61] In this major redesign, it incorporated a "number of security features to provide greater protection against potential losses due to counterfeit or altered cards."[62] One of the main reasons for this change concerned security: previous cards were easy to reproduce by ironing

[57] Barclays, 'Barclaycard Circulars 29/1579 (2)' (n 50). 1975 - p168.
[58] Barclays, 'Barclays Central Retail Services Division Factfile'.
[59] Barclays, 'Barclays Archives Chronology 1966-1990' (n 49).
[60] Barclays, 'Barclaycard Newsletter 1979 PBB27'. April - Page 6.
[61] Barclays, 'Barclaycard Annual Report 1984 PBB27'. Page 1.
[62] ibid. Page 1.

out and re-embossing certain characters but also because Visa wanted to standardise the cards using their branding. [63] As such, Visa's solution was to introduce a panel containing three main features: Blue, white and gold visa logo as system identifier (to differentiate it against Access and later Mastercard), the hologram of the dove (silver for classic cards, and gold for premier cards), and a product identifier ('c' for classic, or 'p' for premier).[64] (Figure 2) The rest of the card could be customised by the issuing commercial bank as they liked. Barclaycard's colours already echoed those of VISA so Barclays chose to continue with that style as it would make their card even more distinguishable.[65] Likewise, to discourage alteration of embossed account numbers, the first four digits of the account number were printed on each card above the corresponding embossed digits.[66]

Figure 5: Example of new features on Barclaycard

When focusing on the first category of decision-making and reflecting on the various improvements made to the card that were highlighted above, there is a shift towards decentralised actors being involved in card design. This increase in stakeholders played a part

[63] ibid. Page 1.
[64] ibid. Page 1.
[65] ibid. Page 1.
[66] ibid. Page 1.

in homogenising the features and security measures across all issuers. The overarching objective of setting this technological standard was fourfold: 1) to build trust and confidence in the plastic card; 2) increase the acceptability and adoption of the public to pay by card, as opposed to other forms of money; 3) make different commercial banks who issued credit cards distinguishable at first glance; 4) and finally introduce features that could limit the rising threat of fraud. This standardisation of technology is a drastic step further than the lack of communication and sharing of information that happened between the Bank of England and other banknote issuers in the previous case study. The next paragraph will now look at the improvements in technology made by Barclaycard at Northampton to facilitate the operation of credit instruments.

Similarly, to the card itself, technological change regularly occurred on the computers and services that were crucial to Barclaycard's operations. Indeed, investment in computers and technological services outside of the elements needed to 'make' cards were necessary. This encompassed processing the necessary book-keeping, the sending out of customers' statements and the re-issue of plastic cards, as well as calculating credit functions.[67] Interestingly, the importance of technology in processing and operating the information and data of a credit card business is highlighted in the 1977 report by labelling Barclaycard as a computer operation.[68] Throughout the growth of Barclaycard, new computers, starting with an IBM 360/50 computer purchased in 1966, were gradually installed and updated at the Northampton centre.[69] It is no surprise that Barclays prided itself in being at the forefront of technological advances for card operations.

[67] Barclays, 'Management Services Department Report 178/4'. Section 1(c).
[68] Barclays, 'Board Papers for Meeting of 1977 Including Brief History of Barclaycard 0300-0939' (n 26). Director's Inspection Report: Barclaycard Department - 3rd May 1977 - Page 6.
[69] Barclays, 'Management Services Department Report 178/4' (n 67). Section 1(c).

This is in stark contrast to banknotes in the 18th and 19th Century, whose technological innovations only focused on the various tools and material required to improve the instrument itself to limit monetary crime, with little success at the Bank of England. Focusing on the second category of decision making within the monetary system, *operational* decisions were initially made centrally. As this section has highlighted, Wilde took the unusual step to centralise the operations of this part of the business. Interestingly, the day-to-day operation of Barclaycard had to be decentralised. From 1977, due to staffing difficulties at Northampton, a decentralisation policy was introduced with different offices becoming involved in supporting the credit card business.[70] Yet the decision-making process that could invite change on the operations of Barclaycard itself remained mostly centralised and based in Northampton whilst there was an increase of decentralised actors involved in the credit card market. The next paragraph will look at the technological changes arising within Barclaycard's monetary system, with the aim to facilitate transactions and help detect fraud.

The rise of acceptability and adoption of Barclaycard as a credit instrument could only be achieved if all elements of the monetary system continuously evolved to meet the more complex demands of card operations. This includes the scalability of card users and market agents accepting them, coupled with concerns in security. The 1984 report identified key technological advancements supporting card transactions and operations. First, it raised awareness of their PINPOINT developments, which concerns new developments enabling cardholder to obtain goods and services electronically by using their PINs.[71] This had the

[70] Barclays, 'Board Papers for Meeting of 1977 Including Brief History of Barclaycard 0300-0939' (n 26). Director's Inspection Report: Barclaycard Department - 3rd May 1977 - Page 1.
[71] Barclays, 'Barclaycard Annual Report 1984 PBB27' (n 61). Page 2.

considerable benefit of speeding up cardholder's transactions at point of sale, but also reduce the flow of vouchers to Barclaycard.[72] Likewise, the installation of CARDLINK machines across retailers, with some 2000 installed in 1984, and planning 200 a month in 1985, increased the accessibility of using cards, allowing transactions to be verified directly through the terminal by swiping magnetic cards and getting in touch automatically with the appropriate authorisation centre.[73] This further reduced training needs for sales assistants, minimising risks of processing errors and simplifying sales procedure, while also increasing security and convenience of using card and further increasing ways of detecting fraud.[74] Similarly to CARDLINK, PDQ terminals were also launched in 1987 in order to authorise transactions and collect data electronically, greatly facilitating card usage and help prevent fraud.[75]

Pulling these threads together, it is argued that the three levels of technological change: [1) design and features of the cards, 2) infrastructure supporting the monetary instrument, 3) devices to help market agents speed up transactions and detect fraud] and corresponding decision-making categories [1) Centralisation of control over the operations of the monetary instrument & monetary system, 2) Pseudo-centralisation of decision-making over changes to monetary instrument, its features, and its growth. 3) Centralisation/ decentralisation of actors/ features involved in dealing with monetary crime] reflect the internal dynamics and processes necessary to run an increasingly technologically complex monetary instrument. This results in the centralisation and control over the whole monetary system being diluted by diversifying the *actors* who can make decisions over particular elements of the monetary system. As a result, each of these branches of decision-making (and the actors involved in them) can themselves

[72] ibid. Page 2.
[73] ibid. Page 2.
[74] ibid. Page 2.
[75] Barclays, 'Barclaycard Annual Report 1987 PBB27'. Page 2.

be either centralised or decentralised, resulting in a plurality of actors being involved in shaping the growth, acceptability, and future of the monetary instrument. There is no longer one monopolistic guardian of trust, but many. This then has an impact on the attributes prioritised by the issuer of the monetary instrument. This is a departure from the previous case study, whose research on modernising some of the elements needed to make paper money, was only truly concerned in creating an inimitable banknote. It is worth remembering that the Bank of England chose to focus on scalability over security, and that the approach it chose to do so was to focus on a simple design that was easily forged. From what is available at the archives, the Bank of England did not concern itself in educating market agents on how to properly identify forged notes or provide tools or instruments that could easily to so. The Bank of England trusted in the quality, feel, and look of the watermarked paper, coupled with a design that was supposedly recognisable to the general public. The narrative explored in relation to Barclaycard point towards a careful consideration of scalability and security, with a stark increase in technology investment to fulfil these goals, whilst also remaining competitive against other actors issuing the same monetary instrument, a concern the Bank of England did not have. I will now look at some key external factors and events representing the circumstances in which Barclaycard was able to flourish at first, then become increasingly affected by government involvement.

1.5. External factors and government involvement in the rise of Barclaycard

Berger et al. emphasise that changes to a payment system are influenced by technological, financial, or regulatory innovations, which often overlap.[76] In conjunction to the internal processes and technological innovations mentioned above, recounted in this subsection are a few key events that had an impact on Barclaycard's scalability and profitability due to

[76] Allen N Berger, Diana Hancock and Jeffrey C Marquardt, 'A Framework for Analyzing Efficiency, Risks, Costs, and Innovations in the Payments System' (1996) 28 Journal of Money, Credit and Banking 696. 725.

direct government involvement or policy. Some intervention was positive, for example, Barclaycard's launch coincided with the Bank of England relaxing their rules on extended credit in 1967 allowing cardholders to repay only part of their outstanding bill each month rather than in full.[77] This intervention helped Barclaycard 's profits take off dramatically in the early 1970s.[78] In contrast, however, a report made in 1978 further reflects on the impact of government involvement on profits due to three negative interferences on the monetary system as a whole.[79]

Within 5-6 years of being launched, Barclaycard operations broke even, it enjoyed 3 years of profits until December 1973, then government raised the minimum payment rate for credit.[80] Indeed, on the 17th of December 1973 the Government introduced credit controls that had disastrous consequences on Barclaycard's profitability.[81] It took until 1978 for the payment rate to be diminished once again.[82] During this credit squeeze the minimum repayment level was raised to 15% or £6, resulting in cardholders using their cards less and late repayment increasing.[83] This was further amplified by the gradual introduction of the Consumer Credit Act in 1974, which although Barclays welcomed the much-needed protection it offered, it had to spend nearly £1 million to meet the act's requirements.[84] Finally, Barclaycard and Barclays were subject to a lengthy investigation from the Monopolies Commission from 1975.[85] According to newsletters and board director reports, the investigation was still ongoing until 1979 using up significant personnel, time and costs.[86] This subsection has shown that

[77] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). 20 Years of Barclaycard - Page 1.
[78] ibid. 20 Years of Barclaycard - Page 1.
[79] ibid. Barclaycard twelve Years On - Page 1.
[80] ibid. Barclaycard twelve Years On - Page 2.
[81] ibid. Barclaycard twelve Years On - Page 2
[82] Barclays, 'Barclays Archives Chronology 1966-1990' (n 49).
[83] Barclays, 'Barclaycard Circulars 29/1579 (2)' (n 50). 1974 - p166.
[84] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). Barclaycard Twelve Years On - Page 3.
[85] Barclays, 'Barclaycard Newsletter 1977 PBB27'. October - Page 2.
[86] Barclays, 'Barclaycard Newsletter 1979 PBB27' (n 60). April - Page 5.

government interference can be direct, intrusive, positive or negative. In contrast, the experience of the Bank of England explored in the previous chapter shows minimal direct intervention and a delegated and laissez-faire attitude towards the prosecution of forgery, and the management and operation of paper money. As Chapter 4 clearly emphasised, state action was less interventionist during that era. This subsection does however support Berger's argument of regulatory and financial influences on monetary instruments. A more detailed analysis of government interaction towards monetary instruments and systems will be explored in greater detail in Chapter 6.

1.6. Key Differences between the rise and acceptance of Bank of England Notes and Barclaycard

This section has highlighted the key factors underpinning Barclaycard's rise from exclusivity to widely accepted monetary instrument in England and Wales. To summarise, Barclays used their established position to introduce and forcefully market this new form of monetary instrument. Moreover, it was this perfect storm of internal and external circumstances that cemented Barclaycard as the first widely used credit card in England: from advantageous credit rules, support from senior management, willingness to shoulder losses, a reactive attitude to fraud and competition, technological innovation on both cards and general infrastructure, to aggressive marketing. Although the exogenous circumstances surrounding the introduction of Barclaycard and credit in the UK, primarily banking and competition driven, were not as threatening as that of Bank of England notes: potential war with France, shortage of bullion, looming financial calamity. It is argued that the introduction of a credit instrument was a question of when rather than if.

Some early comparison can be made between the approaches taken by the Bank of England and Barclays. It is worth noting that both banks were private institutions during their respective timeframes for the subject of this analysis. By looking at the factors leading to the outcomes observed in both these case studies, it is possible to determine some key differences and similarities arising between both.

As opposed to the Bank of England, Barclays had to push for the acceptance of credit cards amongst businesses and the wider public with little direct interference from government. Indeed, whereas a key factor behind the rise in popularity and acceptability of paper money in the 18th and 19th Century was due to necessity caused by the Restriction Period, Barclaycard achieved a similar outcome through various means of marketing. As opposed to paper money, there are fewer factors influencing the rise of Barclaycard that are directly related to an existing monetary instrument. The only interaction being: the guarantee by market agents that the prices for goods and services in cash would be the exact same for Barclaycard users, which was a key condition for accepting Barclaycard altogether. Likewise, there is a tight co-dependency with cheques for the majority of Barclaycard's first 30 years.

The decision-making processes for Barclaycard was still to a certain extent centralised, by virtue of decisions being under the remit of the Barclaycard department. It was still less monopolistic than the Bank of England, both in terms of launching new ventures, but also, in relation to technological standards being imposed on the card through VISA requirements. Contrary to the Bank of England, it seems that the sharing of practices and information was more common across industrial actors than in the previous case study. Focusing on card technology, the free access granted by the Bank of America is a good example of sharing

technological standards. As the following sections will attest, sharing information between various actors was a key initiative in fighting this monetary crime.

Both case studies follow a similar thread in relation to the acceptance and adoption of the monetary instrument, where there is an initial focus on demystifying the monetary instrument and encouraging it use. However, once the monetary instrument reaches an inflection point in relation to public acceptance through adoption by market agents, consumers, and government bodies, it reaches 'significant' level and thus systemic status resulting in the priority shifting to the other attributes: in particular security and scalability. It is worth noting that reaching that pivotal moment in the monetary instrument's evolution can vary in length of time and is dependent on internal and external circumstances. It is usually at this stage that the guardians of the monetary system are faced with the rising loss of monetary crime, and it is at this juncture that approaches and prioritisation of the attributes between case studies fork and the processes of doing so also diverge. Contrary to the Bank of England who prioritised scalability and accessibility of their notes, Barclays' focus was less on scalability but rather on establishing a balance between scalability and security by adopting a plurality of approaches and relying on multiple actors. The importance given to both attributes, shown through the number of individuals adopting Barclaycard, and the monetary value of losses incurred by fraud, was often represented by key data milestones set out in the various reports and newsletters published by Barclays.

The biggest departures from the experiences shared by both case studies are twofold: firstly, a drastic shift in improvements to the monetary system as a whole rather than a focus on the monetary instrument itself. Secondly, an evolution in the role and scope of the

centralisation in decision-making present across every aspect of the monetary system. In other words, the Barclaycard experience is hinting at a developing theme that a decentralisation of innovation in monetary technology within a monetary system maximises the opportunities and strategies to detect and combat monetary crime. The next section will explore this dynamic in more detail, analysing the rising threat of credit card fraud and begin to determine the impact of this particular monetary crime on technological innovation, and the adoption of credit cards by the wider public.

2. The Rising Threat of Fraud

2.1. Barclaycard: More than Plastic

This section will add weight to the importance of investing in the monetary system, rather than focusing on improving the monetary instrument, to combat crime by looking at the role of market agents and the different types of *fraud* affecting the card depending on its function. It will also add weight to the clear need for a taxonomy of monetary crime that would encompass the different activities that reacted and adapted to Barclaycard's own innovations and the instrument's different functions. A key difference arising here in relation to the previous chapter is that the preventive steps taken by Barclaycard were also spearheaded in-house but focused on the monetary system as a whole and did not rely on the prosecution of criminal activities as an indication of harm caused on the functioning of the instrument. In this instance, pecuniary losses caused by fraud were seen as the barometer. This section will also begin to highlight the key departure from the previous case study corresponding to the rising decentralisation of actors involved in combatting fraud, with centralised oversight from Barclaycard's authorisation centre. To explore these themes, this section will look at the decisions and situational guidance made by Barclaycard towards the various actors involved in processing transactions and the *procedures* to do so. As such, this section will take a particular

focus on the instructions given to market agents to accept payment by credit card and deal with fraudulent activities.

The use of credit instruments from the 1960s till the 1990s were primarily used as ways to pay for goods and services on credit at a limited number of market agents accepting this new form of 'plastic' money. The majority of fraud reported in Barclays' archives, and the steps taken to address this, actually stemmed from the variety of services *attached* to the possession of a Barclaycard. Yet, much of the literature looking at fraud and credit card use during this period has primarily focused on fraud *prevention* related to the card *itself*. For example, Levi et al. focused on the practical methods in which card fraud occurs, from false applications, theft in transit, or the criminal use of lost and stolen cards.[87] Although Levi correctly recognises that card fraud is not a unitary phenomenon,[88] the focus is still primarily on preventive measures on the evolving processes of card fraud, including cardholder verification and application fraud. The measures and the activities discussed are also directed towards both the instrument and their use as credit instruments. I would argue that this narrow interpretation of card fraud fails to properly acknowledge the monetary crimes associated with the card's other features, and which were the subject of most reports found in the archives. This highlights the rising complexity in which monetary instruments were used, and the different types of activities that undermined their functioning. The rest of this section will therefore have the objective to further highlight the various uses the card had during its rise in acceptance which will provide a better understanding on the complex interactions between fraud and Barclaycard's features, setting a benchmark in analysing the reactivity and adaptability of Barclaycard's security.

[87] Michael Levi, Paul Bissel and Tony Richardson, *The Prevention of Cheque and Credit Card Fraud* (Home Office Crime Prevention Unit Paper 26 1991).
[88] Michael Levi and Jim Handley, *Criminal Justice and the Future of Payment Card Fraud* (IPPR 2002).

2.2. Barclaycard: a new way to pay

During Barclaycard's first 20 years, using it as a mode of payment was not a rapid process compared to the relative speed of chip and pin and/or contactless that are common use today. The bank had both internal and external procedures to verify cardholder identify, obtain authorisation, and spot suspicious circumstances. The 1972 Sales Manual provides some insight as to the purpose of the authorisation procedure and the potential benefits for market agents. It was indicated that their co-operation was essential for the joint effort in catching 'rogues'.[89] For example, the sales manual clearly identified that it was the ignorance of the floor limit that was the major cause of fraud *enablement* and as such it clearly indicated that gaining authorisation was an "anti-fraud measure".[90]The next two subsections will focus on external steps taken by the Bank to minimise/ limit fraud losses and liability by looking at guidance that was regularly sent to market agents to inform them of the proper procedure to use and process Barclaycard transactions. Three of these manuals were present in the archives: one in 1966, 1980, and 1988.[91] The circulation of these manuals to market agents served two primary purposes within the wider monetary system. Firstly, it supported the merchant in dealing with cardholders by establishing the various procedures necessary for payment, refunds, and returns. This allowed consumers to trust and enjoy the benefits of Barclaycard in relation to its primary function as a credit instrument since all market agents accepting Barclaycard would follow the same processes. Secondly, whilst primarily instructive, it was explicitly stated that these 'basic' procedures should be strictly adhered to, and that by doing so, payments accepted by the company through a Barclaycard would be guaranteed.[92] This

[89] Barclays, 'Barclaycard Sales Manual 1159-0018'. Page 1.
[90] ibid. Page 3.
[91] Barclays, 'Brochures on Operating Barclaycard 1159-0033'.
[92] ibid. Barclaycard: Member Operating Guide 1966. Page 2.

guarantee underpinned the triangular trust relationships between market agents, consumers, and the Bank.

In its first guide in 1966, Barclays' 'member operating guide' focused on informing market agents what Barclaycard was, how it operated, and how to promote their sales. It is worth noting that it is the only guide out of the three that also served the purpose of demystifying Barclaycard's use and encouraging its adoption and acceptance by market agents. It is argued that the subsequent guides only dealt with sales procedures because Barclaycard had already become established within the financial system. For example, in the 1980 guide, no mention is given to what is Barclaycard,[93] whilst in the 1988 one, the fact that they are the largest provider of financial services is stated.[94] Barclaycard's original and primary purpose as a monetary instrument was described as "an all-purpose credit plan available to consumers, retailers, airlines, services and professional people in many fields."[95] Owning a Barclaycard automatically established a credit account for the cardholder *with* all the businesses and services who joined the scheme throughout the country.[96] It was stated that a Barclaycard holder "entitled them the privilege of purchasing on credit at any Barclaycard merchant member establishment."[97] Importantly, no money would change hands and no questions about *creditworthiness* would be raised with the customer.[98] Once a month a statement of account was received and only one payment was made for the all the purchases made with the Barclaycard, this repayment could be for the whole credit value or for a minimum percentage set by government institutions, which varied over the years.[99] Contrary to the guides of 1980

[93] ibid. Barclaycard-Visa: Merchant Procedure Guide 1980. Page 3.
[94] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 1.
[95] ibid. Barclaycard: Member Operating Guide 1966. Page 1.
[96] ibid. Barclaycard: Member Operating Guide 1966. Page 1.
[97] ibid. Barclaycard: Member Operating Guide 1966. Page 3.
[98] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). Credit Cards - Page 3.
[99] Barclays, 'Brochures on Operating Barclaycard 1159-0033' (n 91). Barclaycard: Member Operating Guide 1966. Page 1.

and 1988, the 1966 ‘member operating guide’ also provided an overview of the benefits for the merchant accepting Barclaycard.[100]

For the merchant, it was argued that a large number of cardholders would appreciate the convenience of using the card when shopping and that accepting Barclaycard would help secure the share of business from people who were newcomers to the area by displaying the logo and colours of Barclaycard.[101] Moreover, it was a way for Barclays Bank to ‘supplement’ merchant’s existing credit arrangement by facilitating credit facilities.[102] More importantly, the key feature of Barclaycard for merchants was to enable them to concentrate on their efforts of selling and servicing customers, whilst Barclays Bank would assume the burden of credit and collections.[103] This ‘service’ costed merchants an initial joining fee, imprinter fees, and a flat discount rate which was deducted from the total of the sales vouchers that were deposited in the merchant’s account with Barclays.[104] Every two to three days the merchant would have to pay their vouchers into the bank. As soon as the vouchers were paid into the bank they were credited in full to the merchant’s account at their own branch. All these credit cards vouchers were then sent to the Barclaycard centre to be ‘fed’ into their computer systems. At a predetermined point each month, a statement would be produced by the computer for every cardholder’s account showing their financial activity and balance.[105] The true appeal of Barclaycard was found at this stage and was not replicated in other monetary instruments at the time: an automated system of counting credit, calculating interest, and keeping track of

[100] ibid. Barclaycard: Member Operating Guide 1966. Page 1.
[101] ibid. Barclaycard: Member Operating Guide 1966. Page 2.
[102] ibid. Barclaycard: Member Operating Guide 1966. Page 2.
[103] ibid. Barclaycard: Member Operating Guide 1966. Page 2.
[104] ibid. Barclaycard: Member Operating Guide 1966. Page 2.
[105] Barclays, ‘Typescript on History of Barclaycard 1159-0036’ (n 4). Credit Cards - Page 4.

transactions, and an incredible flexible way to pay the balance at the end of each month.[106] Indeed, the consumers could pay "by virtually any means he so wishes."[107]

It is worth reflecting on the tone and language used in the guide as they align neatly with Barclays' objectives of scalability and accessibility; and to establish themselves as the first credit card service provider in the UK. Firstly, it highlights the relationship between customers and the acceptance of market agents of this new monetary instrument with words such as 'entitles', and 'privilege'.[108] Secondly, it emphasises the duty and responsibilities that the Bank would take regarding credit services: such as bearing the 'burden' or 'take over the problem' in relation to credit checking, sending out statements of account, or securing payment and meeting losses.[109] This approach had the clear aim of supplanting the existing credit arrangement with customers that were held and managed by the merchants themselves, a practice widely adopted before the 1960s. As such paying with credit was underpinned by the trust of both market agents and consumers towards this new monetary instrument. It further supports the role of market agents in supporting the acceptance and adoption of monetary instruments with the guidance and marketing push of the issuer. The next subsection will show the rising awareness of illicit and harmful activities in relation to the Barclaycard at the point of sale by doing a content analysis of the guides from 1966 and 1988.

2.3. Barclaycard: user guides indicating a rising awareness of fraud

It is possible to map out the Bank's rising awareness of fraud and the Bank's strategies to minimise losses by looking and comparing the evolution of the procedure to pay by credit

[106] ibid. Credit Cards - Page 4.
[107] ibid. Credit Cards - Page 4.
[108] Barclays, 'Brochures on Operating Barclaycard 1159-0033' (n 91). Barclaycard: Member Operating Guide 1966. Page 3.
[109] ibid. Barclaycard: Member Operating Guide 1966. Page 2.

between the 1966 and 1988 training manuals. By focusing on these external procedures taken by the Bank through the lens of market agents rather than on technological innovations towards the monetary instrument itself, it highlights and expands on the important fact that different types of *fraud* affected the card depending on its function or circumstance. This adds weight to the argument that linking money to specific types of criminal activities is a narrow interpretation of the complex relationships arising between both and the idea, following Levi, that fraud offences in relation to cards is not a unitary phenomenon. This subsection will focus on fraudulent activity at the *point of sale* for the purchase of goods and services on credit, usually through lost or stolen cards. It will highlight the market agent's responsibilities regarding unusual and suspected behaviours, cardholder verification by checking signatures, and the steps required to authorise these transactions.

Indeed, although the crux of these manuals was to explain the procedures to create a Sales Voucher, these formal steps also indirectly combatted fraud by focusing on the merchant's role to detect and prevent unusual and suspected activities, thus minimising the losses incurred by the Bank.[110] Indeed, the general process of buying with credit and how market agents processed these transactions remained relatively unchanged for decades. When a card was presented for payment of goods or services the merchant would fill in a Sales Voucher showing the type of goods sold and the total value of the sale.[111] This process also involved the use of an imprinter to capture the information from the Barclaycard and/or the Sales Voucher.[112] At some point in the transaction, the customer would be requested to sign the voucher and the signature would be compared with the one on the card to verify the identity

[110] ibid. Barclaycard-Visa: Merchant Procedure Guide 1980. Page 5.
[111] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). Credit Cards - Page 3.
[112] Barclays, 'Brochures on Operating Barclaycard 1159-0033' (n 91). Barclaycard: Member Operating Guide 1966. Page 4.

of the cardholder.[113] It was usually at this stage that the market agent would check for unusual or suspicious circumstances, and in certain circumstances the merchant would request authorisation from the Authorisation Centre.[114] If no illicit activity was identified by the market agent, the customer would be given a copy of the receipt and the corresponding goods.[115] These key components remained the same until the advent of technology ultimately took over the process of recording and authorising transactions, whilst also facilitating, and automating the detection of fraud at the point of sale. This marks the first instance in our case studies in which direct training from the issuer is created and provided to the market agents accepting the monetary instrument to combat the associated monetary crime. This approach expands on the three levels of technological change within the monetary system explored in the first section and focuses on the importance of investing in the monetary system, rather than focusing on improving the monetary instrument, to combat crime. The next paragraphs will now delve into greater detail towards the evolution and comparison of these guides and show Barclaycard's rising awareness of fraud.

In the 1966 'Member Operating Guide' the procedure to create a Sales Vouchers was as follows: 1) First the market agent had to write in the date, description of merchandise or service rendered and the total amount in the lower right-hand corner.[116] 2) Then the merchant had to check that the Barclaycard had not expired, obtain the signature on the sales voucher, and compare it with the signature on the Barclaycard.[117] It was at this stage that the merchant had the responsibility to check for any fraudulent activity. 3) Finally, the Barclaycard was

[113] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). Credit Cards - Page 3.
[114] Barclays, 'Brochures on Operating Barclaycard 1159-0033' (n 91). Barclaycard: Member Operating Guide 1966. Page 4.
[115] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). Credit Cards - Page 3.
[116] Barclays, 'Brochures on Operating Barclaycard 1159-0033' (n 91). Barclaycard: Member Operating Guide 1966. Page 4.
[117] ibid. Barclaycard: Member Operating Guide 1966. Page 4.

inserted with the sales voucher in the imprinter and the following information was 'imprinted': the cardholder's account number and card expiration, the cardholder's name, the merchant member's name, and number.[118]

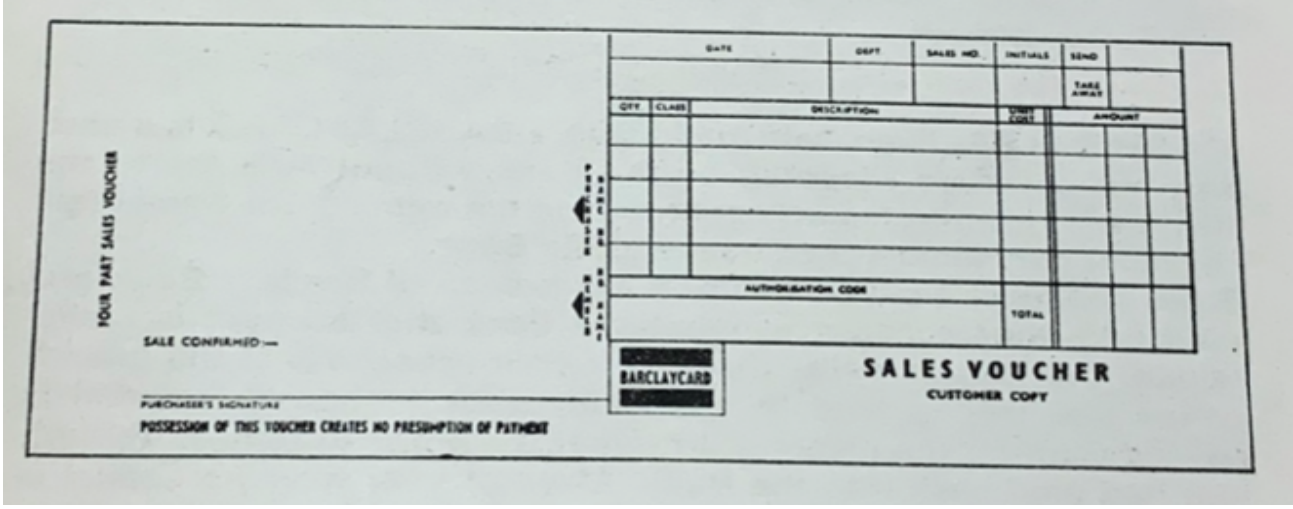


Figure 6: 1966 Sales Voucher Example from Member Operating Guide

Only two small sections of the 1966 guide dealt with "suspicious irregularities" and would require the merchant to ask for authorisation from the Barclaycard centre.[119] The instructions explained that occasionally a Barclaycard could be presented under suspicious circumstances indicating either a misuse of credit privileges or the attempted use of a lost or stolen card.[120] The examples provided were: "frequent purchases beyond normal needs, the purchase of an unusual number of the same article or in disregard of size, style and quality."[121] When this occurred, Barclaycard relied on the "co-operation of merchant members in telephoning the Authorisation Section to notify them of any suspected irregularity regardless of the amount of sale."[122] Moreover, the checks carried out by merchants in relation to stolen and cancelled card relied on periodical notices received from Barclaycard informing them of

[118] ibid. Barclaycard: Member Operating Guide 1966. Page 5.
[119] ibid. Barclaycard: Member Operating Guide 1966. Page 5.
[120] ibid. Barclaycard: Member Operating Guide 1966. Page 6.
[121] ibid. Barclaycard: Member Operating Guide 1966. Page 6.
[122] ibid. Barclaycard: Member Operating Guide 1966. Page 6.

the name of the cardholder, account number, and when the notice expired.[123] The instructions given to merchants when a person attempted to purchase goods with stolen or lost cards was to "mutilate the card if possible and telephone the Authorisation Section."[124]

There seems to be no indication as to what the merchant was expected to do after that, and what would happen to the individual when found. It is reasonable to assume that the Bank's awareness of monetary crime in relation to Barclaycard was at its lowest point at this stage which suggests that the Bank was originally only preoccupied with the misuse of the cards themselves, primarily by those using lost or stolen cards. Drawing from the sections above, it is clear that the 1966 guide was written when Barclaycard had not reached its inflection point requiring the Bank to focus more on security and deal with the increasing losses caused by crime.

In contrast, the 1988 guide provided a clear overview of the different types of *cards* that could be accepted by the market agent.[125] These corresponded to the classic Visa Card, the Premier Visa Card, and the Electron Visa Card.[126] Only the classic and premier Visa Cards were accepted, and similarly to the 1966 and the 1980 guide the procedure to make transactions with the instruments revolved around producing the Sales Voucher, capturing information with the imprinter, and making checks against the cardholder's signature. Yet, following on from the two previous operating guides, a slight variation on the procedure can be noted. The 1988 'approved method' consisted of 1) first placing the card face up in the imprinter, 2) then the

[123] ibid. Barclaycard: Member Operating Guide 1966. Page 6.
[124] ibid. Barclaycard: Member Operating Guide 1966. Page 6.
[125] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 4.
[126] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 5.

Sales Voucher was placed face up over the card, before operating it to capture card details.[127] 3) The Sales Voucher was then removed, and all necessary information was filled out using a ballpoint pen.[128] Contrary to the 1980 procedure, two key changes are also present: the details of the transaction were filled in *after* the Sales Voucher had been processed in the imprinter, and there was an extensive visual guide of the process. Another departure from previous guides is the amount of detail provided to market agents over how to check and identify fraudulent activity.[129] 4) The merchant would then ask the cardholder to sign the Sales Voucher and were instructed to "retain the Card and watch whilst the Cardholder signs in the box indicated."[130] No substantial change is present between 1966 and 1988 to the processes and mechanisms of preventing monetary crime, and paying with credit by filling out the Sales Vouchers. There is however a clear rise of awareness towards illicit and harmful activities to the card and an introduction of a more codified ways of dealing with them.

Indeed, the 1988 guide is the first instance of purposefully instructing market agents to look out for fraudulent transactions by checking the signature and other elements of the card. Indeed, the merchant was asked to rub their thumb over the signature strip to check that it had not been tampered with, and that the first four embossed digits of the Card number matched the four printed digits which appeared above it.[131] Mirroring the steps explained in the 'making a transaction' procedure, these checks are further repeated, with more visual cues, in the 'authorisation procedure' section.[132] In another first occurrence, extensive guidance is also provided to the merchant as to what to do when the authorisation department of Barclaycard

[127] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 8.1.
[128] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 8.1.
[129] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 8.2.
[130] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 8.2.
[131] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 8.2.
[132] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 9.

asked them to retain the Card rather than "the authorisation officer will give you further instructions."[133] First, the merchant would have to *politely* inform the customer *without causing embarrassment* that they would retain the card.[134] Then they were required to cut the card in half, though not in the presence of customers, and return it as soon as possible to the Authorisation centre with a brief note.[135] Finally, a reward was generally paid for the recovery of Cards being misused.[136]

Furthermore, when a card was presented under suspicious circumstances, the merchant was asked to take both the Card and the completed signed Sales Voucher, to the telephone, making sure the items purchased were not within the customer's reach.[137] When talking to an authorisation officer, if the merchant could not speak freely, they could tell that it was a "Code 10 call" and they would only be asked questions requiring yes or no answers.[138] Finally, if the transaction was denied, the merchant was asked to make a "mental note, or if possible a written note of the Cardholder's general appearance."[139] Likewise, they were advised not to call the police when a card subject to a warning notice was used, and were instructed to call Authorisation immediately.[140]

The content analysis of these guides, at different periods in Barclaycard's early years, has shown the rising awareness towards monetary crime and top-down guidance provided by private issuers to market agents. Overall, it is worth noting that the overall processes, and key

[133] ibid. Barclaycard-Visa: Merchant Procedure Guide 1980. Page 9.
[134] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 8.2.
[135] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 8.2.
[136] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 8.2.
[137] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 10.
[138] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 10.
[139] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 10.
[140] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 11.

components (sales voucher, imprinter, checks, and authorisation) of paying in credit have only been slightly refined over the two decades explored.[141] Likewise, it is suggested that the increasing length, and detail on how to process transactions captures the growing complexity and variety of transactions and monetary instruments being introduced at the time. From the 1980s it becomes clear that Barclaycard has shifted to a widely accepted monetary instrument and as such there is far less promotional material included in subsequent guides. Moreover, the gradual introduction of formal steps and guidance at point of sale on 1) identifying suspicious activity, 2) Obtaining authorisation, and 3) checking the signature, clearly indicates that Barclaycard were becoming increasingly aware of *how* their cards were being used for fraudulent transactions and were offering training to directly counter specific modus operandi to minimise such losses.

The Bank's strategy against this *particular instance of fraud* during this timeframe relied on three elements: market agents identifying unusual and suspicious circumstances, shop attendants checking signatures as a way to verify cardholder identity, and a centralised method of control over granting authorisation over transactions and how to deal with cards used in suspected transactions. This indicates two clear themes that are not well explored in the literature: 1) market agents not only playing an instrumental role in the acceptance and adoption of monetary instruments, but also being the first line of defence against monetary crime. 2) 'In house' approaches and monopoly over decision-making processes over monetary crime is not confined to the 19th Century. Barclaycard gave instructions on crime prevention to businesses, and they provided real-time situational guidance to merchants facing potential fraud. This last issue raises an interesting dichotomy in this case study: there is a noticeable decentralisation

[141] ibid. Barclaycard-Visa: Merchant Procedure Guide 1988. Page 9.1.

of actors involved in combatting monetary crime at different levels of the monetary system, both internally within the bank, and externally in relation to market agents. Yet the decision-making process and guidance towards certain types of illicit activity are still centralised and monopolised by Barclaycard. It does however clearly show that decentralisation and plural actors involved at different levels of decision-making in the monetary system provides a better opportunity to combat fraud. This contrast, and centralisation of decision-making can clearly be seen in Barclaycard's other functions as it adapted to fraudulent behaviours by gradually shifting from training people to spot suspicious behaviour, to technology to verify cardholder identity and obtain authorisation.

2.4. Barclaycard: Other functions

In addition to allowing to make purchases on credit, Barclaycard had three key other functions: cheque encashment, cash withdrawal/ advances, and serving as a cheque guarantee. By exploring these other functions, this subsection will add weight to the notion that fraud is not a unitary phenomenon and that different types of fraud required different approaches to be combatted. It will further emphasise the over-reliance on the signature as a method of prevention, and establish that similarly to market agents, bank clerks were also at the forefront of the fight against fraud. Indeed, contrary to the previous section, which focused on guidance provided to external actors, these first two functions were *not* operated by market agents but by Bank clerks and thus internal training and guidance was provided to combat suspicious activity. The exploration of these historical guides will further reiterate the centralised level of decision-making from Barclaycard *towards* decentralised actors (both internal and external) and to reposition the meaning of monetary crime to encompass the variety of activities being directed at the card's various functions.

From 1967 the card served as identification for cheque encashment at Barclays group branches in the UK, and by 1969 it was introduced at all clearing bank branches for customers of Barclays bank holding a Barclaycard.[142] Indeed, at that time, Barclays Bank customers could use their Barclaycard to cash cheques up to £50 in any major UK bank branch, or up to £100 a day at Barclays' branches.[143] In a cashier training manual from around 1987-1989, the importance of the overlap and relationship between cheques and Barclaycard was put to the fore.[144] It is worth noting that Barclaycard was in the unique position that it was not exclusive to Barclays' customers, with the floor limit changing depending on whether they were a Barclays' customer or not.[145] When encashing a cheque against a Barclaycard, the first step was for the individual to produce their own personal cheque book.[146] Then the cheque was completed in the normal manner and the customer signed the cheque in the presence of the cashier. It was stated in the training manual that by witnessing the customer's signature, the cashier was ensuring that the cheque belonged to the customer and had not been found, thereby preventing a fraudulent encashment.[147] Once complete, the customer would hand the cheque, cheque book and Barclaycard to the Cashier.[148]

The training manual then produced the most complete set of guidance for the steps necessary to inspect a Barclaycard dealing with one of its functions; with a seven-step process to follow when dealing with cheque encashment. 1) Checking that the signature strip hadn't been modified by: a) rubbing the thumb over the signature strip to check that no paper or strip had been placed over the original. b) Holding the card up to the light and twisting it slightly,

[142] Barclays, 'Barclaycard Sales Manual 1159-0018' (n 89). Page 1.
[143] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). Credit Cards - Page 9.
[144] Barclays, 'Cashier's Training Guide 0906-0003'. 4.2.
[145] ibid. 4.30R.
[146] ibid. 4.21.
[147] ibid. 4.32.
[148] ibid. 4.32.

as the original signature may have been erased and a second written over the top. c) Looking for signs of chemical treatment.[149] Then the card should be turned over and the following checks made: 2) name, 3) dates, 4) embossed numbers, 5) and that the hologram moved, 6) then the card was placed next to the cheque to ensure that the signatures were the same.[150] 7) Finally, the cashier had to check the Fraud Warning List.[151]

Once the checks on the Barclaycard were made, the cheque book was also examined.[152] The binding should be neat, and the stubs should also be examined as a fraudster would not take the time to complete the counterfoils and be more likely to tear out any completed ones.[153] Next, the frequency page should be examined to ensure that the chequebook was only used to make one encashment in any one day, and thus used as a precaution against fraud.[154] If there was anything suspicious, a photo should be taken, and the documents retained.[155] Indeed, when a suspicious person was identified in the bank, certain branches had surveillance cameras that needed to be activated by pressing on buttons positioned along the counter.[156] The camera would take two black and white pictures every second until the 'suspicion button' was released. Moreover, to ensure a clear and accurate picture of the suspicious person the Form 697C needed to be completed.[157]

[149] ibid. 4.33.
[150] ibid. 4.34.
[151] ibid. 4.35.
[152] ibid. 4.36R.
[153] ibid. 4.37.
[154] ibid. 4.38.
[155] ibid. 4.46.
[156] ibid. 4.42.
[157] ibid. 4.43R.

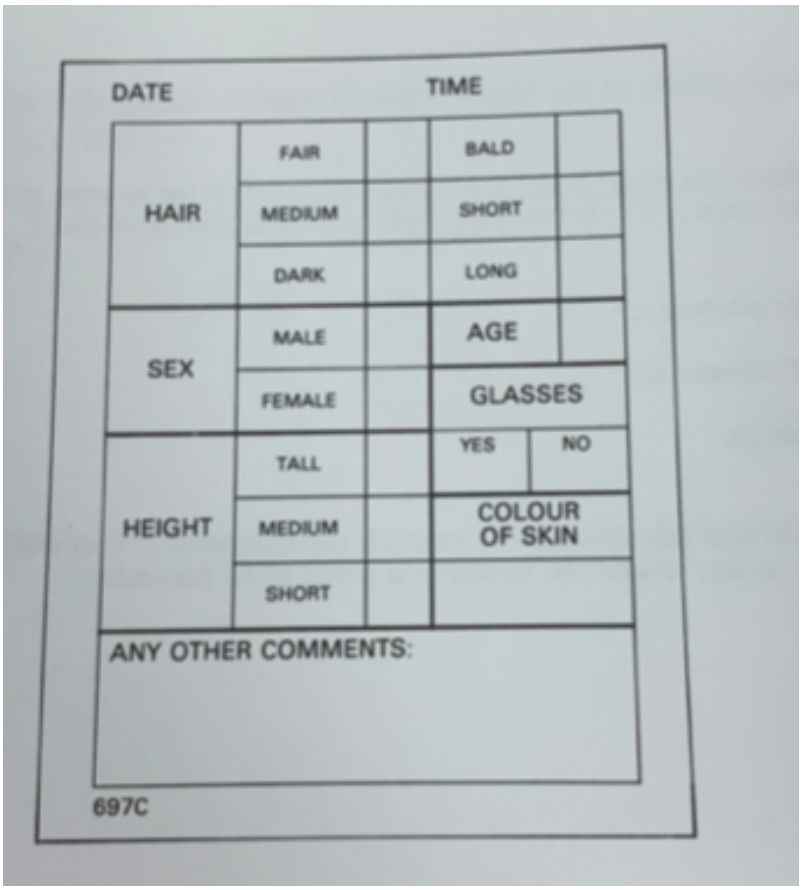


Figure 7: Form 967C

This expansive guidance to both the processes of carrying out the cheque encashment function, but also to look for suspicious activity and fraudulent cards, was similarly robust with the card's other function. The first Barclaycard Circular on the 24th June 1966 clearly stated the entitlement of card holders to withdraw cash in two instances.[158] In the first instance, any customer could use their Barclaycard as *identification* to withdraw cash from their current, deposit, or savings account.[159] Secondly, Barclaycard's also offered customers the ability to withdraw cash from the Card account: the cash advance function.[160] That is, to *borrow* some money from the Bank in cash.[161] Cash advances would be subject to the cardholder's credit limit and was only available at Barclays and in subsequent years at other UK VISA member

[158] Barclays, 'Barclaycard Circulars 29/1579 (1)'. 1966 - p10.
[159] ibid. 1966 - p13.
[160] ibid. 1966 - p11.
[161] Barclays, 'An Introduction to Barclays Bank Limited and to Your Branch 0155-0252'. Page 35.

banks.[162] The same checks as cheque encashment elaborated above should be carried out on the Barclaycard when it was presented for a cash advance.[163] A cash advance Voucher was then made and imprinted with the information of the card, and information regarding the amount of the transaction and the customer's signature was recorded by hand.[164] The signature on the voucher should then be checked to the Barclaycard to ensure that it agreed.[165] The voucher was then signed by the cashier dealing with the encashment and evidenced that all three copies of the voucher were legible, that the signature agreed, the card was valid, and the Fraud Warning List had been checked. Once satisfied, the voucher was stamped.[166] If a branch had a Cardsure telephone, then all cash advances should be verified through this process.[167] We will return to the role of technology in automating the authorisation process and thus minimising fraud, in the next section.

By looking at these historical training guides, it becomes clear that the Bank was clearly aware of the modus operandi of various methods of fraud and placed responsibility on the clerk to verify identity as a first step to stop fraud. It is worth highlighting the detail in which the training guides go in listing methods of altering a card. The issue then shifts from one of guidance to one of detectability. For instance, throughout the decades where these procedures slowly developed and modernised, the reliance on the signature and on personnel (both internal and external) has always been present. It is worth noting here that contrary to the Bank of England, extensive guidance was produced towards both internal and external actors in a hope to limit monetary crime. It is fair to assume that Barclays' increase in investment in technology

[162] Barclays, 'Typescript on History of Barclaycard 1159-0036' (n 4). Credit Cards - Page 9.
[163] Barclays, 'Cashier's Training Guide 0906-0003' (n 144). 5.3.
[164] ibid. 5.7.
[165] ibid. 5.8.
[166] ibid. 5.9.
[167] ibid. 5.10.

towards the 1980s in *automating* this authorisation and identification procedure shows that placing the burden of limiting fraud on a variety of decentralised actors, even with increasingly sophisticated and detailed frameworks of prevention, was not as effective in lowering the Bank's losses as they would have preferred.

A further observation worth drawing attention to is the integration and adaptation of institutional frameworks and procedures with emerging technologies. We extensively discussed the close relationship between coins and banknotes in the previous chapter, and how new monetary technologies can in the right circumstances integrate themselves into existing frameworks. This is a key parallel present in the early days of Barclaycard in relation to the cheques and accounts held at banks. The contemporary focus on digital payments, and contactless and mobile payments, has shifted public understanding on the close relationship between cards in relation to other media; as well as the *human* element of processing these transactions and protecting against monetary crime for the instrument's first 30 years. Yet the fundamental narrative of Barclaycard reflects a new monetary instrument enabling, and ultimately facilitating access to the *existing* monetary system. This observation begins to pave the way towards a clear *thread* permeating throughout monetary history, and clearly showing across my case studies, which is the *flexibility* of previous or existing monetary instruments in *integrating* new monetary technologies within their current framework. There is often no need to reinvent the wheel. As the literature review and the concepts chapter has made clear: one of the key challenges currently faced by cryptocurrencies is its suitability to be incorporated into existing frameworks. This is not solely confined to forms of regulations but also in the provision of financial services and in facilitating monetary transactions. A clear example of this is VISA mooting the possibility of processing certain cryptocurrencies within their

operating framework.[168] The next section will briefly look at the introduction of the cheque guarantee function and explore its narrative in fighting fraud.

3. The Narrative of the Cheque Guarantee

3.1. Conscious of Fraud: Introducing the Cheque Guarantee

This subsection will look at the implementation and decision-making process behind the cheque guarantee function implemented in 1974 making Barclaycard the first dual-purpose card in the UK. It will highlight two key developing themes in relation to monetary innovation: firstly, that a pluralist system of monetary instruments fosters *healthy* innovative competition, and secondly that implementation costs and financial concerns often play a crucial role in adopting new monetary technology. The first mention of the introduction of a Cheque Guarantee Card was submitted for discussion on 19th October 1972 and written by Mr Dale (JBD). The discussion revolved around introducing a separate card or making Barclaycard a dual-purpose card. However, the prevailing view was that the Bank would be put in a worse position for what seemed to be a minority demand.[169] The debate between both approaches would dominate the Bank's committee minutes in responding to the increase in interest for this facility.

A correspondence by Mr Taylor (DMT) on 22nd February 1973 stated that the other Banks were now in a position to replace their existing cheque cards by cards of uniform design in order to make them more recognisable in shops. The intention from the competitors would be to start introducing them from 1st January 1974. This greatly concerned Barclays as it

[168] VISA, 'Visa Introduces Crypto Advisory Services to Help Partners Navigate a New Era of Money Movement' *VISA* (8 December 2021) <https://www.visa.co.uk/about-visa/newsroom/press-releases.3149494.html>.
[169] Barclays, 'Papers Relating to Barclaycard Operations (1) 0080-2616' (n 51). Document 1.

indicated the clear stance that competitors were taking in relation to this development. For Mr Taylor (DMT) a dual role Barclaycard would be disastrous because it would: 1) offer merchants the easiest possible situation in which to dissuade customers from using a credit card, 2) place it at a disadvantage in competing with Access, 3) and there would be endless confusion on the difference of cheque limits, Barclaycard floor limits, and which retailers and banks would accept what piece of card. Mr Taylor (DMT) was firmly of the opinion that a separate cheque card should be issued centrally through the Barclaycard administration since they had the necessary facilities for embossing, issuing, and renewing. In terms of fraud prevention, they could use Barclaycard's existing systems for warning branches and merchants. Importantly Mr Taylor (DMT) was of the belief that they should not be stampeded into a decision because of the development from other banks schemes.[170] Indeed, Mr Bromley (AKB) responded to Mr Taylor's note by approving that on balance he was also in favour of a separate Cheque Guarantee card, primarily because not all customers would qualify for both a Barclaycard and CGC.[171]

This position then *reluctantly* shifted as the Bank undertook surveys on what customers wanted. A Note on 23rd February gave a brief overview of the market research undertaken by the Bank. It indicated that a minority of Barclays customers expressed a marked need for a cheque card service, and that this sentiment was rising.[172] A report was then written up by Mr Timblick (AJT) from the Barclaycard Department on 26th March 1973, weighting up the advantages and disadvantages of ways to incorporate a cheque card with Barclaycard. The paper concluded that joining-in with a *standard* cheque guarantee card scheme would be a non-competitive move. The range of services offered by Barclays would then be the same as other

[170] ibid. Document 6.
[171] ibid. Document 7.
[172] ibid. Document 8.

commercial banks, especially with the introduction of Access (Barclaycard's direct competition in the credit card market).[173] For a separate card, the Bank would be taking a reactionary step to their competitors, and may provide more protection for fraud, and avoid the confusion in shops about the purpose of each card. The disadvantages for a separate card would be that the initial costs would be much higher, both in terms of implementation and operating expenses, and it would not be seen as a competitive move, more of a defensive one.[174]

On the other hand, to extend the range of services which Barclaycard afforded by attaching to it a cheque guarantee facility could be interpreted as a competitive tactic, particularly since it would increase the contrast between Access and Barclaycard and only require a cardholder to carry one piece of plastic.[175] the main arguments for a dual purpose: 1) differentiation from competitors by having one card instead of two, cheque encashment would be retained on Barclaycard, 2) implementation costs would be small and annual operating expenses low, 3) it would be a very competitive move which the other banks could not match. The major disadvantage would be to: 1) offer merchants the easiest possible situation in which to persuade some customers to use their Barclaycard as a cheque card rather than credit card, and 2) the Bank taking on additional fraud losses.[176]

Despite this advantage, the Inspection Department was critical of the report written by Mr Timblick (AJT) and wrote on the 6th April 1973, that the Chief Inspector Mr Moy (TGM) was very concerned with the substantial losses as a result of fraud arising from cheque

[173] ibid. Report Page 10.
[174] Barclays, 'Papers Relating to Barclaycard Operations (2) 0080-2617' (n 55). Final Report on the Advantages and Disadvantages of A CGC Facility.
[175] Barclays, 'Papers Relating to Barclaycard Operations (1) 0080-2616' (n 51). Report Page 10.
[176] Barclays, 'Papers Relating to Barclaycard Operations (2) 0080-2617' (n 55). Final Report on the Advantages and Disadvantages of A CGC Facility.

guarantee against Barclaycard. The department remained unconvinced that the Bank should embark on this most expensive service.[177] The inspection's department overall comments on the introduction of a cheque guarantee service were that whichever method were to be adopted, it would be expensive both by way of fraud loss and initial and operating costs, which would then result in a loss ladder. Similarly, the report also surmised that market agents would be more prone to accept a cheque which is guaranteed and thus avoid the payment of commission to the Bank for the credit facility.[178] The Chief's inspector office then provided an analysis of possible losses due to fraud on the 19th April 1973. He deduced that cheque guarantee fraud would amount to around £100 000 per year by way of fraud. Interestingly, his projection was off, as it in the first year of cheque guarantee being introduced in 1974, the amount of fraud for cheque guarantee amounted to £164 000.[179]

Ultimately the decision was made to take the approach that would give the Bank the most competitive advantage, and thus the first dual-purpose card in the UK was introduced from 2nd September 1974.[180] Board minutes dated 29th March 1974 discussed the arguments set out in the various reports and agreed in principle that if a cheque guarantee card were to be introduced, it should be on the basis that the present Barclaycard would become a dual-purpose card.[181] Board minutes dated 2nd May 1974 approved the Board's decision to introduce Barclaycard as a dual-purpose card.

[177] Barclays, 'Papers Relating to Barclaycard Operations (1) 0080-2616' (n 51). Correspondence with Inspection Department Doc 1.
[178] ibid. Correspondence with Inspection Department Doc 1.
[179] ibid. Correspondence with Inspection Department Doc 3.
[180] Barclays, 'Papers Relating to Barclaycard Operations (2) 0080-2617' (n 55). Announcement and Procedures of the New Cheque Guarantee Service.
[181] Barclays, 'Cheque Guarantee Cards Reports 0574-1467'. Board Minutes 29th March 1974 Para 513.

Contrary to the introduction of Barclaycard itself, who relied on a small team to convince higher management to introduce this new instrument; the decision in this instance involved nearly all levels of Barclays and took over 2 years to implement as opposed to 6 months. The crux of the decision to add this function to Barclaycard rested towards gaining a competitive advantage, responding to other bank's actions, minimising fraud losses and opportunities, and taking a decision that would have small economic impact on initial expenses but high rewards in terms of revenue. This provides an interesting lens on the maintenance and innovation of monetary instruments throughout its rise in acceptance and shows the *factors* that influence change *after* it has reached systemic status. Decisions towards the instrument's future shift from being one of demystification and acceptance to one of competition and balance sheet to further improve accessibility and adoption. As board minutes and reports from inspection departments make clear, monetary crime was a *contributing* factor to this decision-making process in addition to competitiveness and implementation costs. The next subsection will now look at the direct correlation between the introduction of the cheque guarantee and the steps taken to tackle the sudden rise of fraud.

3.2. Fighting Fraud: The role of Technology

This subsection will explore the way Barclays responded to the rising instances of fraud related to the cheque guarantee function. By doing so, it will correlate the developing themes explored in the sections above. 1) the bank's awareness of different *types* of monetary crime affecting their instrument, 2) willingness to adapt and invest in the monetary system to tackle those losses through the use of new technologies, 3) awareness of the plural actors involved in limiting the spread of fraud. 4) a retention of control over the decision-making process over the management of fraud.

Throughout the various committee meetings and correspondence between general managers, fraud and its losses has always been a subject of concern and discussion.[182] For example, in a Barclaycard Committee in December 1981 the Divisional General Manager commented on the key issues facing the bank during that period: the large increase in both categories of fraud, the problems of containing those losses, the steps already being taken, and new suggestions being examined and evaluated.[183] Similarly to the various committee reports we have observed for the improvement of notes at the Bank of England, much of these discussions explored potential solutions and reiterated the rising losses incurred by the Bank due to the monetary crime. Especially after the introduction of the cheque guarantee, renewed debate on the level of fraud started gaining traction. Indeed, fraud was recognised as the most serious unresolved problem faced by the Bank. Prospective solutions were either costly or uncertain of success, but the Bank was committed to the concept of trying all feasible methods of control.[184] The problem was not peculiar to Barclays as other Banks' Cheque Guarantee losses were similar to Barclaycard's.[185]

Throughout this time, investment in technology did not stop, and a number of preventive measures were being explored.[186] Two major projects were mentioned: encapsulation of signature on cards before issue; and automated authorisation terminals in retail outlets.[187] The latter actually came to fruition a few years later with the advent of Cardsure and PINPOINT machinery in the mid 1980s to automate authorisation and the verification of transactions. The Bank's aim was to thoroughly research technological developments which

[182] Barclays, 'Barclaycard Strategic Plans 0080-2285'. Barclaycard Committee Wednesday 2nd December 1981. Section 2.
[183] ibid. Barclaycard Committee Wednesday 2nd December 1981. Section 2.
[184] ibid. Barclaycard Strategic Plan 1982/1986. Page 30.
[185] ibid. Barclaycard Committee 18th May 1981.
[186] ibid. Barclaycard Committee 18th May 1981.
[187] ibid. Barclaycard Committee 18th May 1981.

would offer prospects of improving both productivity and controlling fraud. If a case could be made for an approach, the Bank would seek rapid implementation.[188]

From 1984, the losses incurred from the cheque guarantee function became subject to renewed debate at Barclaycard's head office. It was stated in a report sent by R Kettell, assistant General Manager, that they had suffered losses of around £4.3 million pounds in respect to cheque guarantee fraud alone.[189] The discussions from the board echo the points made in the previous two sections in relation to the considerable degree of control that Barclaycard had over the merchant base over credit card operations.[190] This enabled them to educate retail staff, vary floor limits, impose sanctions, and get detailed information of where fraud was occurring and at which merchants.[191] However, these methods were deemed insufficient when dealing with cheque guarantee fraud because the Bank warrantied any payments up to £50 made to market agents with cheques guaranteed with a Barclaycard.[192] More concerningly, this was public knowledge.

Interestingly in reflecting on methods of prevention against the usual modus operandi of cheque guarantee fraud, R Farmer, head of fraud prevention at Barclaycard, noticed that cards were not altered, but rather the fraudster would merely copy the signature.[193] He attempted to address this rise in cheque guarantee fraud by trying to "frighten off the perpetrators by returning cheques in spite of the cheque guarantee".[194] To do so, all cheques received by London branches which were from cheque books which had been reported as stolen

[188] ibid. Barclaycard Strategic Plan 1982/1986. Page 30.
[189] Barclays, 'Barclaycard Cheque Guarantee Info and Stats 0036-0136'.
[190] ibid.
[191] ibid.
[192] ibid.
[193] ibid.
[194] Barclays, 'Barclaycard Cheque Guarantee Scheme and Computer Fraud 0036-0067'.

together with a Barclaycard were advised to call the Fraud Prevention Department directly and then directed on whether to accept payment and return the cheque.[195] As such the problem of controlling cheque guarantee fraud at the time revolved around four major issues: 1) the cheque guarantee was £50, and as such was subject to widespread abuse, 2) the retailer would in most instances not have the ability to obtain authorisation for the transaction. 3) contrary to Barclaycard's other functions, there was no formal agreement with the merchant, meaning that retailers who would not meet the criteria for accepting Barclaycard would still obtain the benefits of the cheque guarantee, 4) finally major retail chains, such as M&S, refused to co-operate with fraud prevention programmes involving authorisation.[196]

As such the fight against cheque guarantee fraud varies slightly from other types of fraud affecting Barclaycard. Indeed, the previous sections has made clear that communication with market agents was at the core of prevention: by providing increasingly better guidance on identifying lost and stolen cards, as well as clear guidance on how to detect suspicious activity and forged signature. This approach was supported by a centralised authorisation department who had a final say on whether transactions could be processed. This seems to be inverted in relation to the cheque guarantee, where the inspection department believed that fraud losses arising out of this function were coming from *external* actors. The need for constant authorisation and the introduction of automated technology doing just this step is a testament to the Bank's investment in technology and adaptability towards modus operandi of fraud of different types. Indeed, the common denominator between all functions' fight against fraud is the authorisation procedure, and as such it is not a surprise that technology was developed,

[195] ibid.
[196] Barclays, 'Barclaycard Cheque Guarantee Info and Stats 0036-0136' (n 189).

such as Cardsure telephones, that would facilitate and objectify this process rather than relying on subjective market agents.[197]

4. Conclusion

The key differences arising from the analysis of Barclaycard and Bank of England in relation to the approach taken by Barclays to combat monetary crime are: 1) a more proactive but internal form of dealing with fraud through extensive communication and guidance to market agents, and 2) an evolution in decision-making that encompasses the whole monetary system rather than the instrument itself. As chapter 3 discussed in length, Barclaycard is functionally different to a paper note as it does not fulfil all three monetary functions in its instrument. Yet, Barclaycard does serve as a media of transmission of the same unit of account that is stored in bank accounts. Importantly, it is reliant on the trust relationships between issuer, market agents, and customers, but also impersonal trust towards the functioning of the monetary system enabling the use of credit, consumer protection, and financial stability. The erosion of that trust was a consequence of fraud. The interplay between previous iterations of money, and other means of payment such as cheque, meant that card fraud remained the key activity undermining the stability of the credit card's monetary system. It could be argued that the separation of functions shifted the focus of monetary crime from forgery of the monetary instrument to its *use* for fraudulent activity. Thus, Barclays responsibility was to minimise the effect of activities that could threaten those trust relationships.

When analysing Barclaycard's approach to the security of the card, the importance of investing in the monetary system, rather than focusing on improving the monetary instrument

[197] Barclays, 'Barclaycard Annual Report 1987 PBB27' (n 75). Page 2.

itself to combat crime identified 3 levels of technological change affecting an instrument's security: 1) design and features of the instrument, 2) infrastructure supporting it (for example: guides, training books, authorisation department, computers, training of bank clerks, market agents, communication about lost and stolen cards), and the investigation department) and, 3) devices to help market agents speed up transactions and detect monetary crime. By looking at the Barclaycard narrative, a few key processes can be identified that had a contributing factor in limiting fraud: better communication with other actors, the implementation of more automated systems, researching ways to have the card itself more secure, and seeking the most economical way to tackle the various types of fraud affecting Barclaycard and its functions.[198] The forms of regulation employed by Barclays was still focused inwards, creating internal mechanisms and processes to deal with the rising threat of fraud. In contrast to the experience of the Bank of England in the 19th Century, there was not a reliance in statutory instruments to push for the functioning and protection of credit cards. Barclays relied less on deterrence and more on prevention to address activities that would undermine the card's functions and acceptance. Private actors in the credit card system (including Barclays' competitors) effectively maintained and regulated their own monetary system against monetary crime.

Moreover, the previous sections focusing on the different *functions* of the Barclaycard, its processes, and the types of fraud impacting those *specific* functions, highlights how the Bank was keenly aware of the different types of crime affecting their monetary instrument, their modus operandi, and the losses incurred because of these activities. *The awareness of different types of crime impacting a monetary instrument justifies moving away from an*

[198] Barclays, 'Barclaycard Strategic Plans 0080-2285' (n 182). Barclaycard Strategic Plan 1982/1986. Page 35.

understanding of crime associated with monetary instruments as a unitary phenomenon and supports the need for the use of a wider yet more specific term of monetary crime.

The rise in the decentralisation of actors present at different *levels* of the monetary system and the different types of decision-making process influencing the monetary instrument can be seen in the role and contribution of market agents and internal and external actors in both: 1) supporting the acceptance and adoption of monetary instruments and 2) as a first line of defence against suspicious activity and monetary crime, should not be overlooked. This is generally achieved with the guidance and marketing push of the issuer. Yet it is worth noting that this decentralisation of actors involved in the acceptance of the instrument and in combatting crime is still controlled centrally by the Bank in relation to specific procedures. The different categories of decision-making on specific elements of the monetary system shows that monopolistic tendencies of control towards specific aspects of an instrument is not confined to the 19th Century. Indeed, this chapter has shown the direct effect of the pluralisation of decision-making, actors, and investment in various technologies, in maximising the opportunities and strategies to fight monetary crime. Moreover, the gradual rise of decentralisation (at various levels) and importance of market agents for both an instrument's acceptance and in dealing with monetary crime, clearly supports the argument that money is a social fact underpinned by impersonal trust relations.

Flowing from this, one of the key findings arising out of this chapter's comparative analysis is the importance of decision-making and *competition* in fostering a reactive approach to monetary crime and monetary innovation. Although many notes were circulating during the same timeframe as the Bank of England notes, they did not possess the same weight and

standing in the nation's hierarchy of monetary instruments, and as such the Bank of England held a monopoly over the control of their instrument and were not challenged in their actions. Conversely, Barclaycard was faced by various competitors during its introduction, and this fostered technological innovation both in terms of maximising using plastic cards to make transactions, but also to deter monetary crimes. As such, pluralist monetary instruments foster healthy innovative competition, which echoes the current plethora of cryptocurrencies circulating in the present. Indeed, similarly to the Bank of England and its close association with coins and bullion, Barclaycard's close reliance and relationship with cheques indicates that previous or existing monetary instruments are flexible enough to integrate new monetary technologies. This historical perspective on this key notion is particularly important in relation to cryptocurrencies as their integration in current frameworks (monetary, regulatory, and financial) are at the core of current discourses. Likewise, this chapter has highlighted that monetary crime plays a contributing factor in the decision-making process of improving, adapting, and investing in monetary technology.

CHAPTER 6: CRYPTOASSETS AND DECENTRALISED INCONSISTENCY

Regulators are increasingly worried about the use of cryptocurrencies for illegitimate activities like money laundering, terrorist financing and tax evasion.[1] The problem is significant even though the full scale of misuse is arguably unknown especially as a plurality of cryptoassets are being issued, and the market cap continues to increase.[2] Cryptocurrencies and their underlying elements are a "monstrous topic".[3] The literature review has already highlighted the variety of topics and growing body of work related to cryptocurrencies and its elements: technology[4], blockchain[5], anonymity[6], the cryptoasset[7] itself. Moreover, the literature continues to explore the issues surrounding cryptocurrencies and money laundering[8]. The issue of anonymity and its enablement for money laundering must be seen as the formative challenge faced by the rise and adoption of cryptocurrencies and regulators have chosen to respond to this via Money Laundering Regulation (MLR) in order to impose due diligence duties on crypto service providers to avoid activities that might undermine the financial system.

[1] Robby Houben and Alexander Snyers, 'Cryptocurrencies and Blockchain- Legal Context and Implications for Financial Crime, Money Laundering and Tax Evasion' (European Parliament 2018) PE 619.024. 9.
[2] ibid. 9.
[3] ibid. 11.
[4] See: Marcel Morisse, 'Cryptocurrencies and Bitcoin: Charting the Research Landscape' (2015).
[5] See: Doug J Galen and others, 'Blockchain for Social Impact: Moving Beyond the Hype' (Stanford Business Center for Social Innovation 2018).
[6] See: Perri Reynolds and Angela SM Irwin, 'Tracking Digital Footprints: Anonymity within the Bitcoin System' (2017) 20 Journal of Money Laundering Control 172.
[7] Adam Hayes, 'The Socio-Technological Lives of Bitcoin' (2019) 0 Theory, Culture & Society 1.
[8] Angela SM Irwin and others, 'Money Laundering and Terrorism Financing in Virtual Environments: A Feasibility Study' (2014) 17 Journal of Money Laundering Control 50.

This is echoed by policymakers exploring whether current frameworks can "pull cryptocurrency users into the light."[9]

Although there is extensive literature on cryptoassets, money laundering, and regulation separately, this chapter aims to contribute to that debate by contextualising the scope of these discourses in relation to the historical threads and factors explored in the previous chapter to determine whether the *direction* of regulation is going down the right path: in particular the flexibility of existing regulatory frameworks, and the notion that decentralisation of decision-making within a monetary system encourages the opportunities to detect and combat monetary crime.

Previous chapters have dealt with the challenges arising between the rising acceptance of its monetary instrument and monetary crime in different ways: Chapter 4 focused on technological innovation of the monetary instrument, and the factors influencing a lack of action, rather than the widely discussed prosecutions of forgery. Chapter 5 dealt with the successful steps taken by Barclaycard to limit monetary crime through both technological innovations on the monetary system as whole and providing centralised guidance to decentralised actors: the market agents who were often at the forefront of the identification and fight against fraud. By drawing on these historical perspectives, this chapter will focus closely on the interactions between cryptoassets, monetary crime and regulatory approaches. It will come to the conclusion that the current direction of the regulation of cryptocurrencies is at risk of becoming even more fragmented because of the specific forms of regulation being introduced which focus unduly on specific instruments (stablecoins) and activities (money

[9] Houben and Snyers (n 1). 79.

laundering). The onus should be on developing a clear guidance and a coherent taxonomy in order to support cryptocurrencies' functioning and consumer protection (including against monetary crime more generally) and reorient existing regulatory frameworks to incorporate cryptoassets. Historical perspectives have highlighted how existing frameworks are sufficient and robust enough to adapt and change to new monetary technologies. There is no need to reinvent the wheel.

This chapter will therefore be separated into three sections: the first will look at the taxonomic confusion arising from decentralised actors trying to define cryptoassets and crypto asset providers to include them under the remit of MLR. The second section will compare the two regulatory proposals for the regulation of cryptoassets: MiCA and HMT's consultation to determine whether it will result in further fragmentation and overregulation of cryptoassets. The third section will historically contextualise a proposed regulatory framework by drawing on experiences of regulatory uncertainty, implementation costs, and the potential consequences of regulatory oversight.

1. Cryptoassets' Current Regulatory Framework

1.1. Prevention through taxonomy

This section will focus on the legal context of cryptoassets and their implications for financial crime.[10] This section will echo recent reports from policy actors in arguing for a clear taxonomy of what constitutes cryptoassets. This is becoming increasingly necessary in order to identify the extent to which financial crime are caught by existing legislation.[11] From an EU context, the meaning of financial crime mirrors the one developed for this thesis which:

[10] ibid. 11.
[11] ibid. 11.

"includes inter alia crimes against the integrity of the financial sector, such as money laundering and insider dealing, and crimes against the financial interest of the Union, such as fraud."[12] Similarly to this project, situating financial crime within an understanding of cryptoassets echoes the approach taken by Chapter 3 in contextualising monetary crime in relation to money and moneyness. This maps onto the reposition of monetary crime being advocated for this project and underlies the importance of a clear understanding of the different elements underpinning their definition. The importance of the right taxonomy cannot be underrepresented, it determines whether a token and corresponding activities, illicit or not, fall under current regulatory frameworks and enforcement by regulatory bodies.

Historical perspectives on Barclaycard have shown how decentralised actors maximises the opportunity to detect and combat monetary crime. This is achieved because decision-making on various elements of the monetary systems is no longer in the hands of a centralised authority. The current range of policy actors, both national (FCA, BoE, HMT), supra-national (EU), and international (FATF) clearly indicates a move in that decentralised direction. In the case of cryptocurrencies and monetary crime, regulator attention has focused on establishing a clear taxonomy of cryptoassets in order to encompass the plurality of tokens being introduced and to catch tokens that would facilitate monetary crime. This section will show that this decentralised approach is slowly pushing regulators to align on a clearer definition with little fragmentation between interpretations. Yet, this drive towards a homogenous approach reveals a system that is aiming to categorise rather than regulate. The crypto monetary system is being divided and fragmented into existing legislation that do not overlap, creating further legal uncertainty. This is at odds with the historical importance of having a strong regulatory

[12] ibid. 13.

relationship between existing forms of money and emerging technologies. Yet what is keenly apparent is that since its introduction in 2009, we are only starting to see *proposals* for regulation, whereas traditional forms of money today have strong civil and criminal protection that have arisen out of historical context and developments. This makes it difficult to establish a clear taxonomy, and determine whether to reorient existing frameworks, or create bespoke legislation.

For banknotes, there are various provisions protecting the notes themselves, and criminal activities directly related to them.[13] For example, it is a criminal offence to reproduce and forge Bank of England notes under section 18 of the Forgery and Counterfeiting Act 1981.[14] Likewise, since Bank of England notes are also copyrighted, it is also a civil offence to copy or reproduce the work without consent or licence from the Bank of England under section 16 of the Copyright Designs and Patents Act 1988.[15] Finally, the Banking Act 2009 establishes Bank of England Notes as legal tender in England and Wales. Even during the midst of the Restriction Period, the Bank Notes Forgery Act 1801 (41 Geo 3 c 57) was introduced in order to protect the type of paper manufactured and its various elements from forgery. Later, The Banknotes (Forgery) Act 1805 (45 Geo 3 c 89) was also introduced to facilitate the prosecution of those in possession and uttering forged notes.

For credit cards, the Fraud Act 2006 covers the criminal offences related to the appropriation of funds through fraudulent means. Moreover, the banks' activities are regulated by the FCA and need authorisation in order to trade and issue credit cards and must adhere to

[13] European Central Bank, 'REPORT ON THE LEGAL PROTECTION OF BANKNOTES IN THE EUROPEAN UNION MEMBER STATES' (ECB 1999). 35.
[14] Forgery and Counterfeiting Act 1981. S 18.
[15] Copyright Designs and Patents Act 1988. S 16.

the Financial Services and Markets Act 2000 and the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 (RAO). More importantly, individuals making payments through credit cards are protected under section 75 of the Consumer Credit Act 1974[16], making the creditor jointly and severally liable with the supplier. Moreover, separate regulatory regimes exist governing the provision of specific payment services. The Payment Services Regulations 2017 cover payment transactions such as credit transfers, card payments, and the issuance of credit cards, by payment services such as banks, and their customers. The issuance of electronic money is regulated by the Electronic Money Regulations 2011, for which the FCA is the responsible regulator. Due to the nature of cryptoassets, much of the regulatory clarification has stemmed from the FCA in England and Wales.

1.2. From exchange to unregulated tokens

The 2018 EU report on the impact of cryptocurrencies on financial crime clearly identified money laundering and the finance of terrorism as its primary concern for three reasons: 1) money laundering, terrorist financing and tax evasion are at the forefront of the EU's efforts on combating financial crime and the EU is clearly taking the approach to address cryptocurrency issues via anti-money laundering (AML) legislation. 2) Leaving theft aside, money laundering, terrorist financing and tax evasion are probably the three types of financial crimes that are likely to be the most associated with cryptocurrencies and blockchain. 3) The acknowledgement that some crimes simply cannot be committed at this stage via cryptocurrencies such as forging transactions on the blockchain.[17] The approach by institutional actors has been to identify and define the scope of existing cryptoassets and service providers in order to be able to impose compliance requirements which would prevent

[16] Consumer Credit Act 1974. S 75.
[17] Houben and Snyers (n 1). 13.

monetary crime and increase consumer confidence. Yet 'labelling' the plurality of cryptoassets is no easy task!

The UK's first approach to clarifying a definition of cryptoassets was set out in the UK Cryptoassets Taskforce in 2018.[18] Cryptoassets were defined as "a cryptographically secured digital representation of value or contractual rights that uses some type of Distributed Ledger Technology (DLT) and can be transferred, stored or traded electronically."[19] Within this overarching category the Taskforce[20] identified three sub-categories which are set out in the table below. After further consultation[21], the FCA issued a policy statement[22] further clarifying their taxonomy of cryptoassets and splitting them into **regulated** and **unregulated** cryptoassets:

[18] HM Treasury, FCA, and Bank of England, 'Cryptoassets Taskforce: Final Report' (HM Treasury 2018).
[19] ibid. 2.10.
[20] HM Treasury, FCA, and Bank of England (n 18). 2.11.
[21] FCA, 'Guidance on Cryptoassets - Consultation Paper' (FCA 2019) CP19/3.
[22] FCA, 'Guidance on Cryptoassets - Feedback and Final Guidance to CP 19/3' (FCA 2019) PS19/22. 2.25.

<table>
<tr><th>Crypto Taskforce</th><th>FCA Policy Statement</th></tr>
<tr><td rowspan="2">Security tokens: which amount to a ‘specified investment’ as set out in the Financial Services and Markets Act (2000) (Regulated Activities) Order (RAO). These may provide rights such as ownership, repayment of a specific sum of money, or entitlement to a share in future profits. They may also be transferable securities or financial instruments under the EU’s Markets in Financial Instruments Directive II (MiFID II).</td><td>Security tokens: this category refers to those tokens that provide rights and obligations akin to specified investments as set out in the RAO, excluding e-money. We have now specifically removed e-money from the definition of a security token, to create a separate category. These remain within the regulatory perimeter.</td></tr>
<tr><td>E-money tokens: this category refers to any token that reaches the definition of e-money. These tokens are subject to the e-money regulations (EMRs) and firms must ensure they have the correct permissions and follow the relevant rules and regulations. This category formerly sat within the utility tokens category. These tokens fall within regulation.</td></tr>
<tr><td>Exchange tokens: which are often referred to as ‘cryptocurrencies’ such as Bitcoin, Litecoin and equivalents. They utilise a DLT platform and are not issued or backed by a central bank or other central body. They do not provide the types of rights or access provided by security or utility tokens, but are used as a means of exchange or for investment.</td><td rowspan="2">Unregulated tokens: this category refers to any token that does not meet the definition of e-money, or provide the same rights as other specified investments under the RAO. This includes tokens referred to as utility tokens, and exchange tokens</td></tr>
<tr><td>Utility tokens: which can be redeemed for access to a specific product or service that is typically provided using a DLT platform.”</td></tr>
</table>

Table 2: UK Cryptoasset Taxonomy

From this early taxonomy it becomes clear that Bitcoin, and similar tokens, fall outside the perimeter of the FCA but the tokens that fall under the definition of e-money under EMR[23] are now labelled as e-money tokens, previously sitting within the utility tokens category.[24] As such, the utility and exchange tokens that fall outside the scope of the FCA, including most form of cryptocurrencies, are now called unregulated tokens as per the FCA latest guidance on cryptoassets.[25] Yet recent advances in money laundering regulation, in particular the EU Fifth Anti-money Laundering Directive (5AMLD), has taken steps to incorporate cryptoassets under

[23] Electronic Money Regulations 2011 SI 2011/99.
[24] FCA (n 22). Para 2.25.
[25] ibid. Para 2.25.

its scope. This reflects the rising concern over the facility of using the pseudo-anonymity features of cryptocurrencies to launder money, a theme that was explored in the literature review.

The key issue arising out of this taxonomy is the fragmented legislative framework applying to different facets of crypto's monetary system. Regulating money has three core objectives: maintain financial stability, facilitate money transmission and innovation, and consumer protection (through regulated activities and monetary crime). This echoes HMT's most recent assessment of the risks posed by cryptocurrencies: risk to financial stability and market integrity, risks to consumers, and risks to competition.[26] This results in cryptoassets broadly fitting withing 4 monetary regulatory frameworks: money transmission laws, financial investments, monetary crime prevention through the regulation of market agent activities, Common Law.

1.3. 5AMLD as prevention to monetary crime

UK AML requirements are principally contained in the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 (MLR). The Money Laundering and Terrorist Financing (Amendment) Regulations 2019 (the MLR Amendment) made an amendment to these provisions by transposing the EU's Fifth Money Laundering Directive into UK Law. The 5AMLD expanded the existing regime to cover virtual currency exchanges, custodian wallet providers, and the meaning of virtual currencies. This meant that businesses would need to carry out customer due diligence on prospective clients.[27]

[26] HM Treasury, 'UK Regulatory Approach to Cryptoassets and Stablecoins: Consultation and Call for Evidence' (HM Treasury 2021). 3.7.
[27] Brett Hilis and Nicole Cheung, 'Registration of Cryptoasset Businesses under the UK AML Regulations – Don't Let It Be Your Cryptonite!' (*Reed Smith Client Alerts*, 5 May 2020) <https://www.reedsmith.com/en/perspectives/2020/05/registration-of-cryptoasset-businesses-under-the-uk-aml-regulations>.

HMT consulted on how the UK should transpose 5AMLD into UK Law[28] and came to the conclusion that it should go further than 5AMLD by employing the much wider term 'cryptoassets' instead of 'virtual currency' which would enable the MLR Amendment to cover the tokens identified by the Cryptoasset Taskforce.[29] Moreover, its definition of 'cryptoassets exchange provider' also went further than 5AMLD as it included within its scope exchanges that were not purely peer-to-fiat providers.[30] Moreover, the Financial Action Task Force (FATF), the world's leading regulator against illicit behaviour, also updated its terminology. They adopted changes to their Recommendations, which are considered the global AMT/CFT standard in October 2018, to clarify that they apply to financial activities involving virtual assets as well as related service providers.[31]

[28] HM Treasury, 'Transposition of the Fifth Money Laundering Directive: Consultation' (HM Treasury 2019).
[29] Hilis and Cheung (n 27).
[30] ibid.
[31] Robby Houben and Alexander Snyers, 'Crypto-Assets - Key Developments, Regulatory Concerns and Responses' (European Parliament 2020) PE 648.779. 46.

5AMLD	MLR Amendment	FATF Recommendations
Virtual Currency: A digital representation of value that is not issued or guaranteed by a central bank or a public authority, is not necessarily attached to a legally established currency and does not possess a legal status of currency or money, but is accepted by natural or legal persons as a means of exchange and which can be transferred, stored and traded electronically.	**Cryptoassets:** A cryptographically secured digital representation of value or contractual rights that uses a form of distributed ledger technology and can be transferred, stored or traded electronically	**Virtual Asset:** A digital representation of value that can be digitally traded, or transferred, and can be used for payment or investment purposes. Virtual assets do not include digital representations of fiat currencies, securities and other financial assets that are already covered elsewhere in the FATF Recommendations.
Virtual Currency Exchange Providers: Providers engaged in exchange services between virtual currencies and fiat currencies.	**Cryptoasset Exchange Provider:** A firm or sole practitioner who by way of business provides one or more of the following services, including where the firm or sole practitioner does so as creator or issuer of any of the cryptoassets involved: **(i)** exchanging, or arranging or making arrangements with a view to the exchange of, cryptoassets for money or money for cryptoassets, **(ii)** exchanging, or arranging or making arrangements with a view to the exchange of, one cryptoasset for another, or **(iii)** operating a machine which utilises automated processes to exchange cryptoassets for money or money for cryptoassets;	**Virtual Asset Service Provider:** Any natural or legal person who is not covered elsewhere under the Recommendations, and as a business conducts one or more of the following activities or operations for or on behalf of another natural or legal person: **i)** exchange between virtual assets and fiat currencies; **ii)** exchange between one or more forms of virtual assets; **iii)** transfer of virtual assets; **iv)** safekeeping and/or administration of virtual assets or instruments enabling control over virtual assets; and **v)** participation in and provision of financial services related to an issuer's offer and/or sale of a virtual asset.
Custodian Wallet Provider: An entity that provides services to safeguard private cryptographic keys on behalf of its customers, to hold, store and transfer virtual currencies.	**Custodian Wallet Provider:** A firm or sole practitioner who by way of business provides services to safeguard, or to safeguard and administer: **(i)** cryptoassets on behalf of its customers, or **(ii)** private cryptographic keys on behalf of its customers in order to hold, store and transfer cryptoassets.	

Table 3: Further Comparative Taxonomy

Under 5AMLD, 'obliged entities' that are engaged in exchange services between virtual currencies and fiat currencies would have to comply with the same requirements as banks and

other financial institutions.[32] Yet there are a number of key crypto-players that fall outside 5AMLD's scope; leaving blind spots in the fight against money laundering and the finance of terrorism.[33] According to the two EU Commission reports those include:

- platforms that only offer crypto-to-crypto (i.e. virtual to virtual asset) exchange services,[34]
- trading platforms that facilitate the transfer of crypto assets as an intermediary,[35]
- Specific wallet providers (hardware and software wallet providers do not safeguard keys on behalf of their customers and so don't fall under the remit of 5AMLD),[36]
- persons that are active in the participation in and provision of financial services related to an issuer's offer and/or sale of crypto assets,[37]
- Issuers or offerors of cryptoassets.[38]

Under the MLRs and its amendment, any firm undertaking one of the specified cryptoasset activities is required to satisfy the FCA and must show that they have robust systems and controls in place to cover each of the following areas: risk assessment, customer due diligence (CDD), transaction monitoring, record keeping, and suspicious activity reporting (SAR).[39] For the FCA to grant the authorisation of the regulated activity, they need to be satisfied that the firm takes their responsibilities to prevent their business being used to launder the proceeds of crime seriously.[40] New cryptoasset businesses that intend to carry on a cryptoasset activity must be registered with the FCA before any activity can be carried out.

[32] ibid. 47.
[33] ibid. 48.
[34] Houben and Snyers (n 1). 5.3.4.
[35] ibid. 5.3.5.
[36] ibid. 5.3.6.
[37] Houben and Snyers (n 31). 52.
[38] ibid. 53.
[39] Therese Chambers, 'Unstable Coins: Cryptoassets, Financial Regulation and Preventing Financial Crime in the Emerging Market for Digital Assets' (*FCA News*, 6 March 2020) <https://www.fca.org.uk/news/speeches/unstable-coins>.
[40] ibid.

Yet, the FCA has had to push back the original deadline of 21 January 2021 to the 1st of April 2022 for firms engaging in crytpo regulated activities to become registered. According to CoinDesk, more than 100 crypto firms applied for registration with the FCA, yet to date (March 2022) 33 have been approved, and more than 60 have been rejected or have withdrawn their applications.[41] As such firms wishing to engage in any activity related to cryptoassets or the provision of crypto services must follow the same AML procedures as 'traditional' financial institutions. Yet this represents a facet of crypto's monetary system, and not all market agents will be localised in the UK or have similar oversight.

1.4. Common Law: the last line of defence?

The previous subsections have clearly highlighted a thread permeating through this project, the idea that there is a plurality of actors involved in shaping the monetary system, and the increasingly visible role of market agents being at the frontline of detecting and combating monetary crime. Indeed, by imposing certain providers to specific requirements, regulatory bodies are in effect providing a preventive framework to address monetary crime. This hasn't been done through investment in technology because cryptocurrencies' private and cryptographic nature does rarely allow it to change. Hence, the development in technology doesn't concern the instrument itself, but similarly to Barclaycard, focuses on the underlying technology allowing access for crypto users to interface with service providers. Yet another key theme permeating throughout this thesis is the notion that current regulatory and judicial frameworks are robust and flexible enough to incorporate emerging technologies. Mr Justice Bryan supported this developing theme by authoritatively stating that Bitcoin could be seen as property and thus subject to the law of property in *AA v Persons Unknowns*.[42]

[41] Jamie Crawley, 'UK's FCA Extends Temporary Registration Deadline for Select Crypto Firms' *Coindesk* (30 March 2022) <https://www.coindesk.com/policy/2022/03/30/uks-fca-extends-temporary-registration-deadline-for-select-crypto-firms/>.
[42] *AA v Persons Unknowns* (2019) EWHC 3556. [55].

As we have touched upon in the literature review, Fox has already expertly outlined that for both traditional forms of money[43], and for cryptocurrencies[44], traditional property regimes do apply to these different forms of monetary assets. More recently, the pivotal guidance provided by the UK Jurisdictional Task Force issued a Legal Statement on cryptoassets and smart contract to create clarity and argue on the inherent flexibility of English Common Law rather than depending on "often cumbersome, time-consuming and inflexible process of legislative intervention".[45] The Statement endorsed a particularly wide definition of cryptoassets. In its view, the principal novel and characteristic features of cryptoassets are: (a) intangibility; (b) cryptographic authentication; (c) use of a distributed transaction ledger; (d) decentralisation; and (e) rule by consensus.[46]

The analysis as to the proprietary status of cryptocurrencies was considered in *AA* and was found to be compelling and was adopted by the court.[47] The Legal Statement clearly laid out that English property law should not be confined to 'choses in possession' and 'choses in action'.[48] According to Mr Justice Bryan, "the conclusion that was expressed was that a cryptoasset might not be a thing in action on a narrow definition of that term, but that does not mean that it cannot be treated as property."[49] Indeed, the Legal Statement concluded that although cryptoassets are certainly not choses in possession, due to their intangibility, they could in principle either be choses in action, under a specific interpretation of the case law, or

[43] David Fox, *Property Rights in Money* (1st edn, Oxford University Press 2008).
[44] David Fox, *Cryptocurrencies in the Common Law of Property* (1st edn, 2018).
[45] UK Jurisdiction Taskforce, 'Legal Statement on Cryptoassets and Smart Contracts' (2019). 3.
[46] ibid. 31.
[47] *AA v Persons Unknowns* (n 42). [57].
[48] UK Jurisdiction Taskforce (n 45). 71- 84.
[49] *AA v Persons Unknowns* (n 42). [59].

a separate third kind of property.[50] The judge also agreed with the legal statement in stating that certain cryptocurrencies met the four criteria set out in Lord Wilberforce's classic definition of property in *National Provincial Bank v Ainsworth*[51] as being definable, identifiable by third parties, capable in their nature of assumption by third parties, and having some degree of permanence.[52] Moreover, the English courts have effectively treated other types of cryptocurrencies as property in previous decisions: *Vorotyntseva v Money-4 Ltd (T/A Nebus.com) and others*[53], where Birss J granted a worldwide freezing order in respect of a substantial quantity of Bitcoin and Ethereum. In *Liam Robertson v Persons Unknown*[54] where Moulder J granted an asset preservation order over cryptocurrencies.[55]

Recourse to the courts, and reliance on property doctrine should be a last resort. From the various regulatory regimes explored above, there is still a degree of taxonomic confusion and legal uncertainty on what is a cryptoasset, and the extent to which crypto service providers should be incorporated within existing frameworks and subject to stringent control in order to prevent monetary crime. This is further complicated by the evolving guidance from decentralised actors trying to limit monetary crime. As a result of the fragmented, and targeted regulation currently being pushed for cryptocurrencies, there have been recent calls by Vandezande[56], and a recent European Parliament report[57] by Rosa Maria Lastra, to level the playing field between forms of money. Vandezande in particular proposes a two-fold approach

[50] George Morris, 'What Is the Legal Status of Cryptoassets and Smart Contracts?' (*Simmon + Simmons*, 10 December 2019) <https://www.simmons-simmons.com/en/publications/ck400ievr65o00b44el9cfb4p/what-is-the-legal-status-of-cryptoassets-and-smart-contracts->.
[51] *National Provincial Bank v Ainsworth* (1965) 1 AC 1175.
[52] *AA v Persons Unknowns* (n 42). [59].
[53] *Vorotyntseva v Money-4 Ltd (T/A Nebus.com) and others* (2018) EWHC 2596 (Ch).
[54] *Liam Robertson v Persons Unknown (unreported)* (2019) CL-2019–000444.
[55] *AA v Persons Unknowns* (n 42). [60].
[56] Niels Vandezande, 'Virtual Currencies under EU Anti-Money Laundering Law' (2017) 33 Computer Law & Security Review 341.
[57] Rosa Maria Lastra and Jason Grant Allen, 'Virtual Currencies in the Eurosystem: Challenges Ahead' (European Parliament 2018) Monetary Dialogue.

whose feasibility and applicability is supported by historical perspective. Firstly, accept that cryptocurrencies should be differentiated (for example as a means of payment or as investment opportunities).[58] That cryptocurrencies have their own hierarchy (again based on acceptability and adoption by market agents), and that this framework should incorporate a notion of proportionality to exempt virtual currencies which pose little risk, from financial regulation.[59] The second is that cryptocurrencies could become aligned with payment services, financial investments, and e-money regulations, resulting in bringing into line existing legislation, and the protection they afford to current forms of money, to cryptocurrencies. The next section will look at the only two proposals in circulation at time of writing aiming to regulate the use and abuse of cryptoassets, or more precisely stablecoins, as they are currently deemed to be posing a threat to financial stability, *in context* with the threads identified through historical comparison. Following this, historical perspectives supporting Vandezande assertion of proportionality and differentiation of monetary instruments will be drawn upon to add weight to his approach.

2. Contrasting approaches to stablecoins: from overregulation to measured interference

2.1. MiCA: A step in the wrong direction?

This section will explore whether the EU's approach to the regulation of cryptoassets has taken a wrong turn due to concerns over further fragmentation and overregulation. It will then explore the UK's recent proposal on the regulation of stablecoins to see whether HMT proposal is more attainable and proportionate to systemic cryptoassets, thus opening the possibility of broadening the scope of regulation of cryptoassets in the UK to align it with

[58] Vandezande (n 56). 441.
[59] ibid. 441.

payment regulations. The first few subsections on MiCA will show that the creation of a bespoke piece of regulation for the market of cryptoassets is a short-term solution to a wider problem of legal clarity in the regulation of monetary instruments as it fails to account for the complexities of overlapping monetary systems. It is argued that this approach further fragments the regulatory framework applicable to cryptoassets and raises the risk of excessive regulation. Engaging with MiCA and the HMT proposal, and the limited literature surrounding these recent proposals is necessary because although the UK will be able to take its own approach (and as we will see it already has!), it is with the caveat that market agents intending to do business with the EU will have to adhere to MiCA.[60] Moreover, it offers a clear indication of the regulation strategies and direction of both the UK and the EU in relation to the emergence of cryptoassets which will enable to draw similarities and differences with historical perspectives.

Hansen identifies three key developments in the last two years, each reinforcing the other, resulting in the introduction of MiCA and its wide range effects on the crypto landscape. 1) The finding in 2018[61] that cryptoassets do not fall under EU law to a large extent, while raising consumer protection and money laundering risks.[62] 2) The implementation of the 5AMLD at national levels has not been as homogenous as desired, further fragmenting the crypto sector.[63] 3) The global stablecoin project initiated by Facebook: Libra[64] indicated to the EU Commission that corporations were now working on blockchain fuelled initiatives and

[60] Werner Vermaak, 'MiCA Guide' (*Sygna Blogs*) <https://www.sygna.io/blog/what-is-mica-markets-in-crypto-assets-eu-regulation-guide/>.
[61] *See Executive Summary in* Houben and Snyers (n 1). 9.
[62] Patrick Hansen, 'New Crypto Rules in the European Union – Gateway for Mass Adoption, or Excessive Regulation?' (*SLS Blogs*, 12 January 2021).
[63] ibid.
[64] *See for example* Rory Cellan-Jones, 'Libra: Facebook's Digital Coin' *BBC News* (London, 21 June 2019) <https://www.bbc.co.uk/programmes/w3csymsf> accessed 28 June 2019.

action was needed to prevent regulatory loopholes.[65] As such, if fully implemented, MiCA would provide a certain level of legal certainty, remove fragmented national regulations, and provide the ability for cryptoassets to enter the EU market from a single point of entry.[66] Yet, the Commission's bespoke approach goes against academic[67] and market agent[68] suggestions concerning the overall regulation of cryptocurrencies and has received lukewarm response by actors in the crypto landscape.

2.2. MiCA: The wide scope of the proposal

The proposal seeks to provide legal certainty for cryptoassets not covered by existing EU legislation and address the rise of the fragmented approach to the regulation of cryptoassets currently prevailing across member states.[69] Yet the *scope of the proposal* seems to indicate the opposite and that if fully implemented the regulation of cryptoassets will be further fragmented. It has four main objectives: 1) legal certainty, 2) support innovation, 3) instil appropriate levels of consumer and investor protection and market integrity, 4) and ensure financial stability.[70] To address these, the grounds used by the Commission to submit the proposal are threefold: 1) Consumer protection and removing obstacles to innovation, 2) fragmentation, 3) and financial stability.[71] It is worth noting that the key thrust behind the introduction of the proposal within the space of two years arose out of the national fragmentation of implementing both the FATF recommendations and transposing the 5AMLD into national law. And yet, further adding to this fragmentation, the regulation expressly

[65] Hansen (n 62).
[66] Gergely Szalóki, 'Crypto-Assets to Be Covered by Financial Regulation in the EU' *Schonherr* (Hungary, 15 February 2022) <https://www.schoenherr.eu/content/crypto-assets-to-be-covered-by-financial-regulation-in-the-eu/>.
[67] Niels Vandezande, *Virtual Currencies: A Legal Framework* (1st edn, Intersentia 2018).
[68] Sandali Handagama, 'Europe's MiCA Crypto Rules Are Coming Soon. Here's Why They Matter' (*Coindesk Insights*, 2 November 2021) <https://www.coindesk.com/policy/2021/11/02/unpacking-europes-looming-mica-crypto-regulation/>. 2.
[69] EU Commission, 'REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Markets in Crypto-Assets, and Amending Directive (EU) 2019/1937' (European Commission) 2020/0265. 10.
[70] ibid. 2.
[71] ibid. 147.

excludes several *types* of cryptocurrencies under Article 2 (2). It does not apply to cryptoassets that *qualify* as financial instruments, 2(2)(a) E-money, 2(2)(b) deposits, 2(2)(c) structured deposits, 2(2)(d) and securitisations 2(2)(e). Furthermore, the Commission is also proposing to widen the scope of the Markets in Financial Instruments Directive (MiFID II) to include financial instruments based on DLT.[72] Despite this, the scope of the proposal neither applies nor addresses the blockchain underlying cryptocurrencies, the anonymous feature of cryptoassets, the mining of cryptocurrencies, DLT more generally, nor CBDCs. As such this piece of legislation seems to be filling some very specific gaps, in particular in relation to stablecoins, rather than taking a strong and harmonious approach to the market in cryptoassets.[73]

MiCA therefore defines 4 types of cryptoassets under Article 3(1):

1. *Crypto-assets:* a "catch-all" category defined as a digital representation of value or rights which may be transferred and stored electronically, using distributed ledger technology or similar technology. (Article 3(1)(2))
2. *Utility tokens:* cryptoassets which are intended to be issued for non-financial purposes to provide digital access to a good or service, available on DLT, and is only accepted by the issuer of that token. (Article 3(1)(5))
3. *Asset-referenced tokens:* cryptoassets with a stable value by referring to the value of several fiat currencies that are legal tender, one or several commodities or one or several crypto-assets, or a combination of such assets. (Article 3(1)(3) (aka a stablecoin)

[72] ibid. 2.
[73] Firat Cengiz, 'What the EU's New MiCA Regulation Could Mean for Cryptocurrencies' (*LSE Blogs*, 5 July 2021) <https://blogs.lse.ac.uk/europpblog/2021/07/05/what-the-eus-new-mica-regulation-could-mean-for-cryptocurrencies/> accessed 20 March 2022.

4. *electronic money tokens:* cryptoassets with a stable value by referring to the value of a fiat currency that is legal tender. (Article 3(1)(4) (aka a stablecoin)

2.3. MiCA: The overregulation of stablecoins

Although the introduction of a regulatory framework at a supranational level is a momentous and welcomed first step for the regulation of cryptoassets, the EU Commission's concern over the rise of stablecoins has shifted the focus of the proposal away from 'traditional' cryptoassets to limiting stablecoins' rise and use within the union.[74] It will be argued that the overregulation and heavy-handed approach towards stablecoins is unproportionate and a knee-jerk reaction to fears associated with a systemic global coin such as libra. This approach will lead to an effective ban of stablecoins within the EU due to the various obligations and unreasonably high thresholds imposed by the proposal. The three main regulatory strategies put forward by the Commission to deal with the challenges of cryptoassets focuses on bespoke legislation, regulating them under EMD, or limiting their use within the EU.[75] However, independently the Commission found that these options did not adequately cover the risks posed by a global stablecoin as they would still be able to undermine financial stability, monetary policy, and monetary sovereignty.[76] The Commission therefore decided to merge the first two options to address this issue.[77] This is problematic because this narrow fixation detracts from the wider objectives sought by the proposal and thus leads to more uncertainty and fragmentation of regulatory frameworks surrounding cryptocurrencies.

Hansen is concerned that this excess regulation towards the two categories of stablecoins will effectively ban stablecoins within the EU due to the various obligations and

[74] EU Commission (n 69). 8.
[75] ibid. 17.
[76] ibid. 8.
[77] ibid. 8.

thresholds imposed on current stablecoins.[78] A very important distinction between stablecoins and other cryptoassets within the proposal is whether the European Banking Authority (EBA) considers a stablecoin to be 'significant', based on specific requirements.[79] For example, E-Money Tokens (EMT) must adhere to the overlapping requirements of 'traditional' e-money regulation in addition to the EMT specific requirements under MiCA such as owning capital funds of at least 3% of the average amount of the reserve assets under Article 41(4). This "bespoke" framework to regulate "significant" stablecoin issuers will force them to comply with stronger capital, investor and EBA supervisory requirements.[80]

Market agents directly involved in providing cryptoassets services such as CoinDesk, were similarly less impressed with the scope and direction of the proposal. There was a desire that the regulation proposed within the MiCA could fit into the currently existing regulation of capital markets as well as to the payments industry.[81] In two recent articles, CoinDesk clearly stated that the EU's approach to stablecoins was unproportionate going so far as stating that "the framework devotes a full 26 of its 168 pages to a subcategory it calls "asset-referenced tokens.""[82] Moreover, they maintain that an example of such a stablecoin "has not been issued, and likely won't be anytime soon."[83] CoinDesk argues that this type of asset actually references the original vision of libra, which has now been watered down to be a simple dollar-backed stablecoin.[84] Yet, as we have seen, the proposal argued that a restriction on stablecoin issuance could potentially be justified given the risks to financial stability but CoinDesk argued that this option "would not be consistent with the objectives set at EU level to promote innovation in

[78] Hansen (n 62).
[79] EU Commission (n 69). 9.
[80] Vermaak (n 60).
[81] Szalóki (n 66).
[82] Handagama (n 68).
[83] ibid.
[84] ibid.

the financial sector." [85] This dichotomy is particularly relevant as commentators have argued that the legislation lifts the barrier of entry for small and medium crypto asset providers.[86]

2.4. MiCA: High market entry requirements

The wide range of compliance, regulatory, and administrative requirements, and the costs associated with this, will make it difficult for new entrants in the crypto system. Moreover, the narrow definition of 'utility' tokens might have the unintended effect of severely limiting the innovation of Decentralised Finance (DeFi). Hansen argues that the high costs of creating a whitepaper for example could prove insurmountable for small-medium market agents wishing to enter the market.[87] Moreover, the proposal makes it a legal obligation under Article 4(1) for issuers of cryptoassets to be legal entities (4(1)(a)), issue a white paper and submit it to the regulatory authorities, although the submission will be merely declaratory (Article 7(1)) and the regulatory authorities do not enjoy the power to authorise or reject crypto projects, other than stablecoins. (Article 7(4)) Nevertheless, Article 4-12 now creates a regulatory and legal hurdle for issuers of cryptoassets that goes against the 'do your own research' (DYOR) attitude commonly attributed to the crypto landscape.[88] As such the proposal raises the entry barriers to the crypto market by undermining the egalitarian access to liquidity that is usually associated with new cryptoassets.[89]

Similarly, although its implementation across member states will take up to 4-5 years, the proposal's "stringent compliance requirements for companies could pose an existential threat to crypto niche markets like DeFi."[90] Indeed, Hansen argues that the regulation of utility

[85] ibid.
[86] Cengiz (n 73).
[87] Hansen (n 62).
[88] Cengiz (n 73).
[89] ibid.
[90] Vermaak (n 60).

tokens as defined by Article 3(5) is too narrow as it would prevent the use of non-financial blockchain projects within the economy due to regulatory hurdles.[91] Because of this, the future establishment of DeFi projects and decentralised token issuances would never be able to comply with the standards of MiCA.[92] This is important because the DeFi ecosystem is the crucial driver of innovation in the crypto space.[93] It is worth looking next at the scope of services that falls within the proposal and how this relates to monetary crimes.

2.5. MiCA: Further fragmentation and absence of monetary crime provisions

The scope of activities and providers that a subject to the stringent requirements explored above has been set out in Article 3. The EU should be commended for aiming to cast a wide net in defining these providers and align its terminology with other incentives trying to 'catch' those offering services that might subject to criminal activity. However, building on the scope of cryptoassets that fall outside the scope of the proposal, this approach might lead to further regulatory fragmentation and lack of overlap with existing provisions, in particular when it concerns monetary crime. The proposal identifies two 'types' of entities that can be involved in providing services associated with cryptoassets.

1. *issuer of crypto-assets:* means a legal person who offers to the public any type of crypto-assets or seeks the admission of such crypto-assets to a trading platform for crypto-assets. (Article 3(6))
2. *crypto-asset service provider:* means any person whose occupation or business is the provision of one or more *crypto-asset services* to third parties on a professional basis.
3. *Crypto-asset services* is further elaborated under Article 3(9)(a) to (h) covering a wider range of activities including the custody and administration of crypto-assets on behalf

[91] Hansen (n 62).
[92] ibid.
[93] ibid.

of third parties, or the exchange of crypto-assets for fiat currency that is legal tender, covering the two main institutions dealing with customers of cryptoassets: Cryptoasset Exchange Providers (CEP) and Custodian Wallet Providers (CWP).

Due to its unregulated position, crypto consumers would not be able to traditionally turn to the authorities in cases of monetary crime, such as of fraud, cyber-attack, theft, or accidental loss of funds.[94] This proposal addresses this caveat to a certain degree by subjecting CEPs to consumer protection, transparency, market abuse, and governance standards[95] under Article 1 (a) to (e). It is argued that this is not a complete protection against monetary crime *for* the consumer however, as it only makes cryptocurrency exchanges responsible for the loss of consumer assets because of fraud, cyber-attack or negligence, which is far less protection awarded under s. 75 of the Consumer Credit Act 1974 in the UK. The proposal's main concern is still focused on complementing anti-money laundering provisions, building upon the gradual implementation of 5AMLD.

Consideration (8) clearly states that legislation should be future proof and be able to keep pace with innovation and technological developments.[96] The proposal further adds that: "such legislation should also contribute to the objective of combating money laundering and the financing of terrorism."[97] As such, the proposal seems to be at least interested in monetary crime, yet, MiCA does not *directly* address anti-money laundering (AML) and Combating Financing of Terrorism (CFT) risks. It merely aligns its definitions with that of *virtual assets* and *virtual asset provider* set out in the in the recommendations of the Financial Action Task

[94] Cengiz (n 73).
[95] ibid.
[96] EU Commission (n 69). 17.
[97] ibid. 17.

Force (FATF)34.[98] This leaves the proposal in a similar situation as the requirements set out in 5AMLD whereas the onus is on CEP and CWP to be at the front line of detecting and limiting monetary crime. As the previous chapter has shown this is not novel but the concern is the plurality of definitions and actors involved in protecting those adopting cryptocurrencies *with little dialogue between them*. As we have explored throughout this section, this lack of engagement with money crime prevention is further complicated by a number of factors: 1) the bespoke approach taken by the proposal rather than re-orientating existing pieces of legislation. 2) Its heightened compliance, regulatory and administrative requirements making entry into the EU crypto market less accessible. 3) Its heavy-handed approach and fixation on stablecoins, and 4) its rather limited but also fragmented scope in relation to types of cryptoassets and elements of the cryptocurrency monetary system requiring overlap with various other pieces of legislation.

2.6. MiCA: A Decentralised enforcement model

Despite these various shortcomings, there is one element of the proposal that needs to be brought to the fore. The enforcement model adopted by the regulation is decentralised with centralised elements and follows EU competition law approaches.[99] National authorities will employ national procedures and civil and criminal remedies when enforcing the regulation. However, the ECB and the ESMA will retain significant centralised supervisory and investigative powers.[100] Yet Cengiz argues that the decentralised approach at member state level will lead to forum shopping which will have to be addressed by the EU Commission down the line.[101] Despite this, this enforcement approach should be welcomed. Although the proposal labels 'competent authorities' as those who will regulate this sector at a national level, as we

[98] Vermaak (n 60).
[99] Cengiz (n 73).
[100] ibid.
[101] ibid.

have seen in the previous chapter, the onus will actually rest on market agents, in this case CEP and CWP, to implement and adopt these regulations *with the help and support* of the regulatory agency. This is to be embraced as this decentralised approach has historically shown to maximise the opportunities to detect and combat monetary crime with the correct guidance and support from a centralised authority. It will also enable the whole enforcement model to adapt to the crimes arising out of cryptoassets that are not limited to money laundering and the finance of terrorism.

There are many positive and negative aspects that can be drawn out from the proposal. It is an ambitious first step into the regulation of cryptoassets that does not involve an outright ban. Although, ironically, due to the recent sustainability issues raised over the mining of cryptocurrencies, the proposal suggested to ban Proof-of-Work (PoW) cryptocurrencies that used excessive energy consumption for their 'mining'. This would have *prima facie* banned Bitcoin within the EU, but this was rejected by the European Parliament's Economic and Monetary Affairs Committee in March 2022.[102] The Committee voted in favour of an alternative provision that would require the EU Commission to come up with a proposal aimed at reducing the high carbon footprint of cryptocurrencies.[103] At its core, the Commission's concern does still revolve around the rise of stablecoins as a monetary system able to undermine financial stability, monetary policy and monetary sovereignty. The UK has an opportunity to learn from the shortcomings of this proposal as the HMT is currently reviewing the approach it will take to deal with stablecoins.

[102] Pascale Davies, 'Europe Rejects Proposal Limiting PoW Cryptos Such as Bitcoin but Sets Draft Rules for Sustainability' *Euronews.next* (14 March 2022) <https://www.euronews.com/next/2022/03/14/europe-to-vote-on-limiting-pow-crypto-mining-used-by-bitcoin-and-ethereum>.
[103] Sandali Handagama, 'EU's Sweeping Crypto Regulations Package One Step Closer to Ratification' (*Coindesk Insights*, 14 March 2022) <https://www.coindesk.com/policy/2022/03/14/eus-sweeping-crypto-regulations-package-one-step-closer-to-ratification/>.

2.7. HMT: A step in the right direction?

The UK is, at time of writing, still reviewing the responses from the call for evidence submitted in March 2021. As such, the report only provides general guidance on the *direction* that the UK would like to take in relation to the regulation of stablecoins. I will briefly touch on the similarities and differences between both approaches as the UK has chosen to focus solely on stablecoins rather than cryptoassets more generally. The key difference arising out of the UK proposal is that it is suggesting a piecemeal approach to regulating the industry as threats emerge or become more significant.[104] This method has been the historical approach taken by UK governments in dealing with monetary innovation and is thus not surprising to see it adopted in relation to cryptoassets and stablecoins more specifically. This means that unregulated exchange and utility tokens (such as Bitcoin and Ether) and algorithmic stablecoins (if adopting UK taxonomy) would remain out of the scope of the authorisation regime.[105] Yet, the guiding principles and objectives of the regulation set out in MiCA and HMT's call for evidence are broadly similar: Protecting financial stability and market integrity, delivering robust consumer protections, and promoting competition and innovation.[106] Both strategies share similar objectives but take drastically different approaches. Indeed, The UK wishes to "avoid applying disproportionate or overly burdensome regulation to entities particularly where end users are aware of risks or the activities do not give rise to financial stability risks."[107] As the subsections above have explored, the EU approach would encourage further fragmentation and the overregulation of stablecoins. The HMT approach to cryptoassets would instead take a narrower focus and place cryptoassets within the remit of payment services

[104] Anna Burn, 'HMT Sets out UK's Approach to Regulating Stablecoins; Other Cryptoassets to Follow?' (*Ashurst Blogs*, 14 January 2022) <https://www.ashurst.com/en/news-and-insights/legal-updates/hmt-sets-out-uks-approach-to-regulated-stablecoins--other-cryptoassets-to-follow/>.
[105] ibid.
[106] HM Treasury (n 26). 2.1.
[107] ibid. 2.1.

performing as currencies or quasi-currencies.[108] This is more in line with academic and market agent suggestions.

From a definition standpoint, the UK proposal expands on the definitions set out by the FCA and establishes, similarly to MiCA, two new sub-categories of stablecoins under the term of *stable tokens*: 1) stable tokens that are linked to a single fiat currency. 2) Stable tokens that are linked to assets other than a single currency (such as gold or multiple currencies).[109] Similarly, it identifies key participants or entities involved in facilitating the use and issuance of stable tokens:[110] *issuers or systems operators*, responsible for managing the rulebook of a system, the infrastructure, burning and minting coins; *cryptoassets exchanges*, enabling consumers to exchange tokens for fiat money or other tokens; *wallets*, which may provide custody of tokens and/or manage private keys. Along with exchanges, these are often the main consumer interface.[111] It is worth noting that the UK proposal is still relatively vague on the exact definition of these market agents whereas MiCA has provided detailed guidance on the type of actors falling within its scope, and the type of activities counting as *crypto-assets services* under Article 3(9).

2.8. HMT: Systemic stable tokens to fall under payment services regulations

The biggest departure from MiCA and the most welcomed, is how the UK envisages to reorient payment regulations to apply to certain types of **systemic** stable tokens. Notably, it suggests "that tokens which could reliably be used for retail or wholesale transactions are subject to appropriate regulation."[112] In other words, these tokens would fall under the scope

[108] Burn (n 104).
[109] HM Treasury (n 26). 3.19.
[110] ibid. 3.2.
[111] ibid. 3.2.
[112] ibid. 3.15.

of *existing* regulatory frameworks under the Electronic Money Regulations 2011 and Payment Services Regulations 2017.[113] According to the report, these would "provide powers to the FCA and PSR to regulate and supervise firms engaged in relevant payment activities."[114] In addition, the Banking Act 2009 and Financial Services (Banking Reform) Act 2013 would provide the Bank of England with the power and responsibility to regulate systemically important payment systems and the service providers to those payment systems.[115] Likewise, the approach will draw on broader elements of financial services regulation to protect consumers.[116] On the subject of monetary crime, The UK proposal takes a similar approach to MiCA, whereas the proposal recommends the implementation of financial crime requirements and MLR but there is no direct engagement about what these are, and how they would be enforced.

This approach clearly echoes the main arguments this project has been highlighting through historical comparison: that there should be a *proportionate* approach to different types of cryptoassets based on their impact on the financial system, which in this case is whether they have reached a systemic threshold. Moreover, existing legislation and payment regulations are flexible and robust enough to incorporate new monetary technologies as long as guidance from regulatory institutions (FCA, PSR, BoE (FPC), HMT) take a centralised and top-down approach of decision making towards these new instruments. The key indicator in both proposals seem to focus on whether such a stablecoin would reach systemic status. It is therefore worth highlighting the meaning of *systemic* between both approaches.

[113] ibid. 3.12.
[114] ibid. 3.12.
[115] ibid. 3.13.
[116] ibid. 3.14.

In the UK proposal, the criteria for *systemic* is set out in 3.31 of the proposal and echoes the requirements set out for payment services in the Banking Act 2009. This would include: "current or likely volume and value of transactions, nature of transactions and links to other systems, as well as substitutability and use by the Bank of England in its role as monetary authority."[117] In the context of stable tokens, this would likely include user base, transaction volumes, and avenues for acquisition of customers through a widely used platform for example.[118] In MiCA, Article 39 sets out the criteria in which the EBA would determine a stablecoin to be 'significant', thus making it systemic.[119] These criteria correspond to: the size of the customer base of the promoters of the asset-referenced tokens, the value of the asset-referenced tokens or their market capitalisation, the number and value of transactions, size of the reserve of assets, significance of the issuers' cross-border activities and the interconnectedness with the financial system.[120]

As we have discussed previously, under MiCA's thresholds most of the relevant stablecoins on the market such as Tether, USDC would currently count as "significant" and therefore have to meet the stringent requirements set out in the EU proposal.[121] Hansen argues that no issuer on the market would be able or willing to comply with all those obligations and apply for EU licences, effectively zoning out certain stablecoins from the EU market.[122] In the UK, the government suggests taking a more flexible approach in assessing whether a stable token has reached systemic status. Moreover, this status would also apply to specific service providers or core entities that form part of a stable token chain, that would pose systemic

[117] ibid. 3.31.
[118] ibid. 3.32.
[119] EU Commission (n 69). 11.
[120] ibid. 11.
[121] HM Treasury (n 26). 3.2.
[122] Hansen (n 62).

risks.[123] For example, issuers or system operators that reach systemic status, as well as critical service providers as defined under the BA 2009, would be subject to both regulation by the Bank of England and its Financial Policy Committee (FPC); and enhanced requirements grounded in the Principles for Financial Market Infrastructures (PFMIs), against which they would be required to produce an annual compliance self-assessment."[124] In practice, this would mean that for asset-linked tokens (the second sub-category of stable tokens), significant capital and prudential requirements would be required.[125]

Although narrower in scope than the EU proposal, the UK's suggested approach offers renewed hope in the government's willingness and flexibility of incorporating existing frameworks to emerging technologies. However, this is achieved in very rare circumstances, and only after a stable token has reached systemic status, it adds weight to the argument that payment regulations can be re-orientated to deal with cryptoassets more generally. As the consultation builds steam, and fixation on stablecoins boils down, it will not be surprising to see cryptoassets gradually being incorporated under *this* approach, thresholds being more flexible and proportionate, and thus cryptoassets more generally moving away from unregulated tokens, to yet another instrument circulating within our monetary landscape, whose market agents are appropriately regulated. This project's historical comparison with other monetary instruments across heterogenous contexts not only shows that this is feasible but recommended.

[123] HM Treasury (n 26). 3.36.
[124] ibid. 3.33.
[125] ibid. 3.34.

3. Establishing a Regulatory Threshold

3.1. Historical perspectives on a proportionate framework

Historical perspectives add weight to the notion that plurality of instruments can circulate and be subjected to a proportionate regulatory framework, including when affected by monetary crimes. A key indicator of regulatory attention seems to arise when a monetary instrument has reached systemic status. The previous two analytical chapters have clearly engaged with the underlying factors relating to these instruments reaching that level of acceptance and adoption, and how this in turn had an impact on monetary crime. At its core, echoing the understanding of monetary crime underpinning this project, regulatory intervention has historically been based on an instrument's perceived impact on financial stability. For example, a key theme arising in relation to the criminalisation of activities related to banknotes during the Restriction Period was an instrument's perceived impact on the State and the Bank's ability to control it. We have further alluded to this theme in relation to the hierarchy of money explored in Chapter 3 and the lack of action taken in relation to copper coins. This proportionate approach is further evidenced in archival material from the BoE Archives. A legal opinion from January 6th, 1886, sought by the Bank of England, clarified, and reiterated the Bank's position in relation to Flash notes, or imitations notes.[126]

These notes were made to 'parody' Bank of England notes and paper instruments more generally and usually did not serve for payment, but for actions or entitlements.[127] Although not 'money', the Bank sought clarification on whether they could bring proceedings against an

[126] See Jack Mockford, '"They Are Exactly as Banknotes Are": Perceptions and Technologies of Bank Note Forgery During the Bank Restriction Period, 1797-1821' (PhD Thesis, Hertfordshire 2014). Who dedicates a chapter on these 'flash' or 'imitation' notes and their social perception.
[127] See also Amanda Lahikainen, 'Currency from Opinion: Imitation Banknotes and the Materiality of Paper Currency in Britain, 1782–1847' (2017) 40 Art History 104. for a great overview of these notes.

engraver identified to be in possession of those banknotes, and the plaques used to create them.[128] It is worth noting that this was of particular importance for the Bank, as most of the prosecutions that they brought for forgeries did not concern those who actually made the forged notes. This was important for the Bank because it believed the circulation of notes that looked very similar to genuine bank of England notes undermined its stability. The opinion clearly stated that because the reasonable person who could read would be able to discern the difference between the general appearance of both *types* of notes, the Bank of England should "not take any steps against the man who was supposed to be making a plate from which Bank of Engraving Notes can be printed."[129] It further argued that individuals that would still try and pass on these notes as Bank of England notes would be liable and had been successfully tried for obtaining or attempting to obtain money by false pretences.[130] This clearly shows that during the 19th Century, there was a clear awareness of the impact of different instruments on financial stability, and more importantly, that a proportionate and measured response was taken against those varied instruments.

3.2. Regulatory uncertainty will remain after implementation

Moving away from regulatory attention caused by possible disruptions to the financial system, legal tender has traditionally been the tool in which a sovereign government would recognise and accept a specific *money of account* and its varying mediums as the way in which individuals and legal persons could use for the disposition of obligations and taxes. Although this is not the approach taken by the UK nor the EU for cryptocurrencies, this *status* has legal ramifications and generates legal certainty by way of forcing acceptance of specific monetary instruments. Yet, even after Bank of England notes became legal tender in 1844, the issue of

[128] Bank of England, *Secretary's Department: Legal Opinions and Cases M5/554* (Bank of England Archives 1821) 554. 208.
[129] ibid. 209.
[130] ibid. 210.

acceptance was still hotly debated. In particular a key question that arose in which the Bank of England sought legal opinion for, was whether "a tender by the Bank of England of its own Notes is a legal tender and can be enforced against a creditor."[131] The Attorney General Sir R.E.Webster made the distinction behind the meaning of 'issue' between the Banking Department as opposed to the Issue Department.

This is key in beginning to illustrate the impersonal trust relationships arising out of the circulation of banknotes and the role of acceptance of monetary instruments. Webster held at the time that 'issue' by the Issue Department meant "the original making and giving out of the notes as part of the authorised amount of "issue" by putting it into circulation as against the securities of coin or bullion held by that department."[132] On the other hand, issue from the Banking Department was akin to the paying out of the note to or for a customer in the same way as any other Bank which gained possession of the note.[133] As such Webster understood the ambiguities behind the use of *issue* in the legal tender act as "compelling the acceptance of" rather than "circulation".[134] This pivotal moment in the interpretation of legal tender of paper money resulted in the current accepted understanding of acceptance under legal tender rules. This provided a clear indication that individuals *had* to accept one or more Bank of England Notes from Bank clerks without reference to the place of original issue of such notes from the Issue Department and that they had to take the notes so paid.[135] Yet legal tender laws are not the only cause of legal uncertainty, the overlap and fragmentation of regulatory frameworks that apply to money and the activities undermining it, is further complicated by the implementation of regulation concerning the issuer's behaviours and responsibilities.

[131] ibid. 239.
[132] ibid. 241.
[133] ibid. 242.
[134] ibid. 247.
[135] ibid. 242.

This can be exemplified by Barclaycard's experience and perception of the implementation of the Consumer Credit Act 1974 (CCA). The introduction of the CCA had dramatic consequences for credit providers. This is akin to the situation being faced by cryptoasset service providers today where forms of regulation are being proposed to regulate their operations in ways that seem more draconian than those proposed in the 1970s. Looking at the communications from managers and directors within Barclays can provide perspectives on their sentiment, adaptability, and how they responded to this form of social control. The introduction of the CCA was not well received by banking institutions.

An agenda meeting of the Barclaycard Committee on 23rd November 1978 looked at the practical implication of the Consumer Credit Act 1974, with a particular focus on section 75. The key issue arising out of section 75 from Barclaycard's perspective was that "claims by cardholders for damages for consequential loss could amount to many times the value of the credit card transaction."[136] It reminded the Bank's liability for breach of contract by a merchant where payment for goods or services between £30 and £10 000 had been made by Barclaycard.[137] The Bank's response to this was to seek insurance cover of up to £1 million which had been obtained with great difficulty. It also discussed issues of liability concerning cards issued before 1977.[138] The Bank believed that the Act only covered cards issued after July 1977 (date of implementation of section 75), whereas the Office of Fair Trading (OFT) considered it applied to all cards. According to an annex to the agenda item discussed above, the OFT had been putting pressure on Barclays to accept liability for those cards before 1977

[136] Barclays, 'Barclaycard Committee Meeting Papers 1978 Concerning Monopolies Commission 0415-0657'. The Connected lender liability.
[137] ibid. Consumer Credit 1974 – Section 75.
[138] ibid. Consumer Credit 1974 – Section 75.

which resulted in the Bank accepting liability pre-1977 up to the credit transaction only.[139] This tension between the OFT and Barclaycard is correlated in a 1977 Barclaycard Newsletter.[140]

Indeed, from its inception all the way up to 1985, there was a constant push from banking institutions to the OFT and the Department of Trade and Industry (DTI) to change certain clauses of the CCA concerning credit cards. Barclays said that lobbying[141] might be necessary but that seeking a change in the Law was 'formidably difficult'.[142] This change was ultimately not successful as section 75 remains in force today. However, what is intriguing is the role of banking institutions in pushing for a change in the law to take into account developments in monetary technology; further supporting the idea of existing frameworks being amended to incorporate developments in technology. On 13th December 1985, members of the newly formed Association for Payment Clearing Services (APCS) wrote to the OFT and HM Treasury to ask for an amendment to the CCA that would secure transactions made under a debit card to have the same treatment as cheques supported by a cheque guarantee card.[143] HMT responded favourably to the proposition and to put "EFT-POS [electronic fund transfer at point of sale] transactions, effected by means of a plastic card operating on a current account, in a similar position as a transaction effected by means of a cheque."[144] However, Barclays observed as early as 19th November 1985 that adopting this approach would close the door to further negotiation on the provisions in the CCA regarding credit cards.[145]

[139] ibid. The Connected lender liability.
[140] Barclays, 'Barclaycard Newsletter 1977 PBB27'. 2.
[141] Barclays, 'Impact of Consumer Credit Act on Project Decimal 0341-0012 (1)'.
[142] Barclays, 'Papers Relating to Barclaycard Operations 0080-2557'. 9.
[143] Barclays, 'Banking Law Reform with Bank Comments 0036-0104'. Consumer Credit Act: EFTPOS.
[144] ibid. Consumer Credit Act: EFTPOS.
[145] ibid. Banking Law Reform – EFTPOS and Consumer Credit.

The report on the impact of the CCA on Project Decimal (the project that eventually led to the first debit card being introduced in the UK) looked in detail at the controversy caused by the CCA and EFT POS. It shows how current regulatory steps would be unable to encompass the breadth and scope of the agreements required for this new technological innovation, in particular when imposing onerous documentation for certain regulated activities. Indeed, a debit card would involve a 'multiple' agreement under the Act, comprising regulated debtor-creditor agreements (such as bank overdrafts on current accounts), debtor-creditor-supplier agreements (related to drawings on the account when the card is used at Barclaycard merchant) and credit token agreements (provision of credit in connection with the use of a credit token). The debtor-creditor-supplier agreement is not exempt from documentation, nor can it be severed from the debtor-creditor agreement (which is exempt from documentation). As a result, the agreements required for the functioning of a debit card would have to comply with all the documentation requirements of the Act, which would be difficult, or even impossible in practice to observe.[146] This is similar to stringent obligations now being proposed for stablecoins.

As such, engaging with historical perspectives on the implementation, consequences, and costs to monetary regulation has not been explored in depth before from the perspective of those service providers. It has shown that social regulation over activities relating to the operation of a monetary instrument has real financial consequences that not every firm or institution is able to face. As the previous two analytical chapters have shown, plural and overlapping monetary systems *are necessary* to foster healthy innovation and competition. Although this might not materialise in new monetary instruments, it can take the form on

[146] Barclays, 'Impact of Consumer Credit Act on Project Decimal 0341-0012 (1)' (n 141).

improvements on the financial system or benefit the consumer. The piecemeal approach favoured by UK regulators may give the crypto industry breathing room to adapt and innovate, even for those tokens that reach systemic status.

4. Conclusion

This chapter's main contribution has been to contextualise current approaches to the regulation of cryptoassets and monetary crime to historical perspectives. It first looked at the taxonomic uncertainty currently affecting regulator's guidance on the different meanings of cryptoassets, and the scope of activities that are included within the remit of regulatory bodies to limit monetary crime. Getting this definition right is crucial. As previous case studies have shown conceptual certainty over a monetary instrument's functions promotes regulatory stability and the identification of activities that might undermine the trust relationships underpinning its monetary system. From the onset, cryptoassets, and its different iterations, differ from previous case studies as they do not belong to the same unit of account. Yet, rising acceptance on their use as a more efficient and secure mode of transmission, has further advanced the debate towards regulatory incorporation. The central role of trust remains as key indicator on the functioning of the relevant monetary system, and the tension between scalability, acceptance, and accessibility permeates throughout the different timeframes explored. This is mirrored throughout this project where I have been advocating for a repositioning of the meaning of monetary crime that function in relation to understandings of money and regulation.

By doing so, the first section highlighted the fragmented and granular regulatory approach being introduced for cryptoassets for the prevention of money laundering and monetary crime. As a result, the focus of regulation seems to be gravitating towards curtailing

a specific offence rather than taking a wider view to monetary crime, which previous case studies proactively acknowledged. Yet, this chapter has also shown that money laundering can be analysed and compared through the lens of monetary crime as it undermines the trust relationships enabling the wider acceptance, and thus scalability of cryptocurrencies, to systemic level. By looking at the implementation of the 5AMLD and of recent court cases on Bitcoin, it found that conceptual uncertainty remained, even after decentralised actors, which proved highly successful in combatting monetary crime during Barclaycard, were in a position to start gravitating towards a common definition. By drawing from the findings of previous chapters on the benefits of decentralised decision-making and actors in combatting monetary crime, this chapter added historical weight to Vandezande's two step approach to the regulation of cryptoassets, focusing on reorienting current regulatory frameworks to encompass virtual currencies. Thus, it is argued that due to the increase in plurality of monetary systems that are likely to coexist in the future: the use of existing frameworks, rather than centralised and private forms of regulation, will be better equipped to deter and prevent the advent of harmful activities that might undermine financial stability more generally.

The contrasting approaches to regulation put forward by MiCA and HMT's consultation drew from the experiences of previous case studies to provide new perspectives on current legal uncertainty. By doing so, the chapter sided favourably with the UK's piecemeal and adaptive approach, which echoes the cycle of innovation seen in previous case studies. The EU's decentralised yet centralised approach to oversight is to be commended. Yet MiCA would foster further fragmentation and overregulation of specific types of cryptoassets and stifle innovation. A key thread throughout the thesis has been *the robustness and flexibility of existing regulatory frameworks*, and the HMT approach expressed openness in incorporating certain cryptoassets within payment services regulation, which historical perspectives have

shown that this is not only feasible but recommended. Ultimately, it found that the current direction of the regulation of cryptocurrencies is at risk of becoming even more fragmented and overregulated, severely limiting the ability of these decentralised actors to combat monetary crime.

CONCLUSION

This thesis original contribution has been to offer historical perspectives on the current challenges facing cryptoassets. It identified three key threads permeating throughout this project's analysis: monetary crime, decentralisation, and the importance of viewing money as a part within a monetary system. It also identified key factors underpinning the relationships behind the rise and acceptance of monetary instruments. Historical responses to emerging forms of money and monetary crime have largely been fragmented and inconsistent across time. Although this can be explained in part by the factors and context of each timeframe, what is apparent is that responses have been varied, adaptive and reactionary. Although each have used existing regulatory and institutional frameworks to combat activities that undermine their functioning, there has never been a clear framework in place to identify the types of activities that can cause harm to financial stability.

This thesis has also highlighted the rapid growth in technological change affecting money and the gradual division of its key economic functions across monetary instruments. It has shown the importance of trust in the social relations underpinning money and how criminal activity can threaten that relationship. By framing its analysing in relation to an understanding of monetary crime derived from concepts of money and regulation, it has enabled the use of this definition of monetary crime as a lens to identify similarities and differences between monetary instruments, and the activities that undermine their stability. The monetary crimes analysed in each case study: forgery, fraud, and money laundering, explored the different factors in which trust is undermined by those activities and how corresponding actors have

reacted to face those threats and maintain the stability of *their own monetary system*. The Bank of England focused on deterrence in order to discourage individuals from forging notes and uttering them in circulation. The cornerstone of paper money's acceptance was based on impersonal trust in the issuer, the note being genuine, and market agents accepting this new form of money for payment. Barclays reactively innovated their monetary system, and the various actors contained within it, in order to maintain trust in using plastic cards and minimise the losses incurred by the Bank. Fraud posed a threat to the trust relationships between every actor involved in card transactions, further highlighting the significant guidance provided to market agents. Finally, money laundering by means of cryptocurrencies, undermines both the financial system more generally, but also the accessibility and adoption in this new form of medium. This historical comparison has demonstrated how trust has gradually shifted from monetary instrument to monetary system and how impersonal trust relationships are present throughout monetary innovation.

As such, the experience in the literature and in the archives have shown that the use of criminal law should only be understood as a tool within a wider toolkit of social control employed by government to deal with emerging issues. Both an understanding of this approach and a clear taxonomy of monetary crime within this toolkit might facilitate dealing with injurious behaviours that might have an impact on financial stability, might not be on the statute books, and suggest different approaches to regulation best suited to address these challenges. Indeed, the awareness of different types of monetary crime impacting a monetary instrument justifies moving away from an understanding of crime associated with monetary instruments as a unitary phenomenon and supports the need for the use of a wider yet more specific term in relation to monetary crime.

The historical analysis of the challenges of formative forms of money in England and Wales from the 19th Century and Barclaycard's early experience has highlighted the first stages of a monetary instrument's narrative into acceptance and adoption. It has particularly highlighted how there is an initial focus in demystifying the monetary instrument and encouraging their use through various means. As both the early years of both case studies have shown, once an inflection point is reached in relation to public, business and market agents, and government *acceptance and adoption*, the instrument reaches systemic status and priority shifts to *scalability and accessibility*, and/or *security*. It is the balancing act between these attributes that represent the most contrasting approaches between each case study. The Bank of England focused on scalability, Barclaycard successfully focused on balancing both.

Indeed, due to monetary instruments becoming increasingly complex, centralisation of control does not favour competitive and preventive decisions, and it is argued that decentralised actors and decision-making processes can improve the overall security of the monetary system and thus promote financial stability. Throughout my case studies, by contrasting the support from management, the issuers' approaches to increasing losses, and their reactiveness to monetary crimes, this thesis identified three different types of centralisations:

- Centralisation of control over the operations of the monetary instrument & monetary system,
- Pseudo-centralisation of decision-making over changes to monetary instrument, its features, and its growth,
- Centralisation/ decentralisation of actors/ features involved in dealing with monetary crime.

Bitcoin represents the result of this slow departure of centralisation of control over monetary instruments. The differences between Bank of England notes and Barclaycard clearly showcases the developing erosion of control over monetary instruments by the state and financial institutions, echoing the narrative and literature by authors such as Desan. Indeed, the role of the state has shifted, and their focus is more on consumer and financial system protection rather than monetary creation and control. Yet this represents a new challenge for legislators as a plurality of actors now underpin and protect the monetary system. Communication needs to be improved between these actors, market agents, and consumers to maintain trust and stability within the financial system. This is particularly important as the historical case studies have shown that co-existence with different monetary instruments is possible and healthy in promoting security. Yet a degree of monopolistic control does remain over specific procedures or elements of the monetary instrument as recent approaches by the EU Commission have hinted at.

This thesis has also indirectly challenged the traditional orthodox theory of money and highlighted the importance of consumers and market agents in accepting monetary instruments for payment on top of/ in addition to the state. The rise of decentralisation (at various levels) and importance of market agents for both an instrument's acceptance and in dealing with monetary crime, clearly supports the argument that 'money' is a social fact underpinned by impersonal trust relations. Barclaycard has shown the importance of investing and educating market agents as they often are the first line of defence against monetary crime. This represents the successful thread of investing in the monetary system rather than focusing on improving the monetary instrument to combat crime. Indeed, this thesis has made the case that this pluralisation of decision-making, actors, and investment in various technologies, maximises the opportunities and strategies to detect and combat monetary crime.

To conclude, the key thread arising out of historical perspectives is the overlap and close relationships between previous or existing monetary instruments. Each historical case study has shown how flexible existing frameworks are to integrate new monetary technologies. There is a significant overlap, reliance, and coexistence between emerging and 'previous' forms of money. This adds weight to the approach mooted by Vandezande: firstly, accept that cryptocurrencies should be differentiated. That cryptocurrencies have their own hierarchy, and that this framework should incorporate a notion of proportionality to exempt virtual currencies which pose little risk, from financial regulation. The second is that cryptocurrencies could become aligned with payment services, financial investments, and e-money regulations, resulting in bringing into line existing legislation, and the protection they afford to current forms of money, to cryptocurrencies. This would be a welcomed turning point for the current regulatory fragmentation of money.

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Appendix 1: Data regarding Forgery Prosecutions in relation to changes in design

Year	Total Prosecuted	Total Convictions	Capital Convictions	Convictions for possession	BoE Old Bailey	Old Bailey FORGERY	Old Bailey COINING	Old Bailey TOTAL	Costs	Changes in Design
1783	0	0	0	0		1	0	1		
1784	2	2	2	0		4	0	4		
1785	0	0	0	0		1	0	1		
1786	0	0	0	0		1	0	1		
1787	0	0	0	0		1	0	1		
1788	1	1	1	0		0	0	0		
1789	1	0	0	0		2	0	2		
1790	0	0	0	0		1	0	1		
1791	0	0	0	0		0	0	0		
1792	0	0	0	0		0	0	0		
1793	0	0	0	0		0	0	0		
1794	0	0	0	0		1	0	1		
1795	0	0	0	0		1	0	1		
1796	0	0	0	0		3	0	3		
1797	2	1	1	0		3	0	3	1538	
1798	12	11	11	0	9	7	1	8	4130	
1799	15	12	12	0	3	2	0	2	5705	
1800	44	29	29	0	1	0	4	4	12753	
1801	54	34	33	1	6	0	3	3	11349	Watermark
1802	63	44	32	12	8	2	3	5	15618	
1803	9	8	7	1	1	3	5	8	3861	
1804	25	21	13	8	9	6	1	7	6148	
1805	28	24	10	14	4	3	3	6	9873	
1806	10	9	0	9	3	1	4	5	2849	
1807	45	40	16	24	4	2	4	6	11844	
1808	34	32	9	23	1	3	0	3	8136	
1809	68	52	23	29	6	1	6	7	16414	Serial Number and dates
1810	29	26	10	16	3	0	2	2	8070	
1811	33	24	5	19	12	7	8	15	7236	
1812	64	52	26	26	24	0	15	15	15752	
1813	65	58	9	49	32	2	28	30	15306	
1814	47	44	5	39	23	1	26	27	10952	
1815	63	58	7	51	21	2	12	14	13818	
1816	120	104	20	84	25	8	5	13	25971	
1817	142	127	32	95	35	1	13	14	29910	
1818	260	227	62	165	26	0	31	31	19892	
1819	228	193	33	160		1	16	17	31400	
1820	404	352	77	275		0	38	38	50292	
1821	239	221	41	180		1	25	26	31460	
1822	16	16	16	0		2	4	6	2692	Improved Watermark
1823	7	6	6	0		0	5	5	1189	
1824		5	5	0		1	2	3	539	
1825		2	2	0		1	0	1		
1826		22	18	4		1	0	1		
1827		24	24	0		1	2	3		
1828		10	10	0		3	3	6		
1829		13	13	1		5	1	6		

Restriction Period	Data from Government Committees	BoE Data on Old Bailey Cases	Data from Old Bailey Online Searches	No Data Available	Technological Innovation