MONEY, CREDIT AND REGIONAL DEVELOPMENT: COMPLEMENTARY LOCAL CURRENCIES AND THE PROVISION OF SMALL BUSINESS CREDIT

by

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i. ABSTRACT

The aim of this investigation is to understand the contribution complementary local currencies can make to regional development through the provision of credit to small businesses. Complementary local currencies have been studied by researchers for nearly forty years. Often researchers highlight an implicit relationship between these schemes and regional development and the three themes of sustainability, even though recent research suggests that contributions are limited. More recently there has been growing interest in supporting small businesses with complementary local currencies. This thesis first considers money and credit on an ontological level, which allows a deeper theoretical understanding of what money is as a fundamental concept. It draws on heterodox and Post Keynesian economic scholars that highlight "credit, and credit alone, is money" (Innes, 1914: 159). With this basis it is able to

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critically analyse complementary local currencies, identifying a dichotomy between schemes that apply a commodity and a credit understanding of money. This crucial difference is often overlooked by academics and practitioners, however it appears to have a significant impact on the ability of complementary local currencies to operate and scale up. Heterodox perspectives have not been fully considered within geographies of money and regional development literature, which the application within the context of complementary local currencies provides an initial insight into how these opposing monetary theories can be considered within a spatial context.

Empirically, half of the study is dedicated to an under-researched complementary local currency called Sardex, based in the region of Sardinia, Italy. A case study has been produced that applies heterodox perspectives and geographies of money and credit to understand how credit is created and then used by small businesses. It goes on to consider the initial contributions that Sardex has to the three themes of sustainability in the context of regional development. The second part of the study turns to schemes in the UK that are analysed through the application of opposing ontological understandings of the role of money and credit within regional spaces. It considers the influence of these opposing perspectives on the ability to scale the schemes and provide initial contributions to regional development. Finally, the insights from the first three chapters are applied through Participatory Action Research techniques to form a credit-based complementary local currency in Birmingham and consider its initial contributions to regional development.

The contribution of this research centres on how the models implemented by complementary local currencies can be used to understand money and credit within

a regional spatial context. The recognition that money within the dominant economy is credit-based, provides a starting point for the development of more effective complementary local currencies and also has lessons for broader analysis of the role of money and credit in regional development. The research provides theoretical insights alongside practical suggestions for policy makers and complementary local currency schemes. The aim is to support the sharing of the good practice identified within Sardex that is operating a financially viable complementary local currency and making initial contributions to a series of regional development objectives.

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1. INTRODUCTION

Over the past forty years, there has been a series of economic experiments to develop currencies within local spaces. Termed ‘complementary local currencies’ (Williams et al, 2001; Blanc, 2011), they have been observed at a range of spatial scales worldwide: from community to regional initiatives, and have taken a range of forms (Seyfang and Longhurst, 2013a). There is a significant body of literature exploring the three dominant models: Local Exchange Trading Systems (LETS) (Greco, 1994; North, 1999; Williams, 1996c; Cooper, 2013), timebanks (Cahn, 2000; Seyfang, 2004) and Convertible Local Currencies (CLCs) (Ryan-Collins, 2011; Graugaard, 2012; North, 2014b). Researchers have identified limited uptake and failures to scale beyond committed demographics (Dittmer, 2013). Outlined within the Masters thesis that preceded this research, I participated within the development of the CLC: Birmingham Pound, and identified similar shortcomings (Bowles, 2017).

Complementary local currencies have been considered as an alternative to dominant understandings of the financialised global economy and its accompanying social constructions and discourses. Scholars have considered them within an expansive framework of applications and objectives, including: social revolution (Bowring, 1998), alternative understandings of value and work (Seyfang, 2003; Gibson-Graham, 2006), a response to financialisation (Leyshon and Thrift, 2007) or a transition to sustainability (Seyfang, 2001; Seyfang and Longhurst, 2013b). Over the past ten years, technological and social innovations have supported the development of new currency schemes, including Sardex within the region of Sardinia, Italy (Littera et al, 2014; Motta et al, 2017) and cryptocurrencies like Bitcoin (Nakamoto, 2008; Eyal, 2017). Although there has been renewed public and media interest (BBC News, 2021; The Guardian,

2021), they have received limited attention from economic geographers interested in complementary local currencies.

The lack of successes of the three dominant models have created negative perspectives, with Dittmer (2013: 11) stating practitioners “would improve [their] chances of contributing to enduring advances towards socio-ecological transition by working for government-centred reform of the monetary system instead of feeding the hype of local currencies against better knowledge”. Although Dittmer (2013) outlines the shortcomings of these models, Sardex applies an alternative approach in which credit is provided within the complementary local currency to small businesses in Sardinia. It has demonstrated an ability to scale, with over 3200 businesses conducting €43million-worth of transactions within the local currency in 2014 (Iosifidis et al, 2015; Dini and Kioupkiolis, 2019). Cryptocurrencies have also demonstrated scalability, with their market capitalisation reaching $2 trillion in 2021 (CoinMarketCap, 2021).

Alongside innovations in complementary local currencies, there has been theoretical developments in understanding the ontological nature of money and credit. Anthropologists (Humphrey, 1985; Graebar, 2011) and social scientists (Ingham, 1996) have challenged the hegemonic discourses of money and credit within orthodox economics (Dodd, 1994; 2016). Furthermore, heterodox economists, led by Post Keynesian scholars, have provided significant insights in how money is created and circulated within the modern economy (Wray, 1992; Kelton, 2020). On a basic level, orthodox economists consider money to be an ideologically-neutral commodity-based substance in which the quantity is controlled externally to the economy by a central bank (Lucas, 1972; Friedman, 1980). In contrast, anthropologists, social scientists and heterodox economists argue that money is created as a social relationship between

individuals, institutions and the state when credit is extended within the economy (Ingham, 1996; Graebar, 2011; Wray, 2015). A significant turning point came in 2014 when the Bank of England (2021) released ‘Money Creation in the Modern Economy’ (McLeay, Radia, & Thomas, 2014) that confirmed the perspectives of heterodox economists. Furthermore, the Covid-19 pandemic has seen governments supporting their economies using money created as credit, resonating with a Post Keynesian perspective: ‘Modern Monetary Theory’ (Wray, 2015; Kelton, 2020).

Due to the increasing severity of economic, social and environmental issues, there are calls for a more sustainable development (Brundtland Commission, 1987; United Nations Sustainable Development Goals, 2015) framed within these three themes (Alhaddi, 2015; Purvis et al, 2019). Complementary local currencies have been considered alongside local or regional development (Seyfang, 2001; Seyfang and Smith, 2007) and often are associated within the three themes of sustainability. Studies have previously investigated their ability to meet economic and social challenges such as developing alternative economies (Helleiner, 2000; Mock et al, 2013), supporting alternative lifestyles (Bowring, 1998) and social exclusion (Seyfang, 2002). They have a strong association with environmental issues (Seyfang and Longhurst, 2012), with stated objectives such as community carbon reduction (Seyfang, 2009) and localising supply chains (Michel and Hudon, 2015). However, researchers have identified limited contributions (Dittmer, 2013; Marshall and O’Neill, 2018) and an inability to create financially viable structures or scale (Cooper, 2013; Bowles, 2017). Over the past decade there has been an observed shift of focus for complementary local currencies from individuals to small businesses (Ryan-Collins, 2011; North, 2014b). There is limited research into the contribution the innovative model applied by Sardex and cryptocurrencies can have on regional development.

The aim of this investigation is to consider the contribution complementary local currencies can have on regional development through the provision of credit to small businesses. It will consider ontological developments in understanding money and credit to provide a theoretical lens for studying complementary local currencies within a framework of economic geography. First, it devotes two chapters to a case study on the Sardex complementary local currency to consider how it provides credit to small businesses and identify initial contributions to regional development and the three themes of sustainability. Second, it reviews the ability of complementary local currencies within the UK to provide credit to small businesses and consider any initial contributions to regional development. Finally, it uses Participatory Action Research (PAR) techniques to analyse the formation and impact of a credit-based complementary local currency scheme that I have been directly involved within in Birmingham, UK.

1.1. Why research the ability of complementary local currencies to provide credit to small businesses?

Over the past three decades, social scientists have been providing a conceptual challenge to the orthodox understandings of money and credit (Dodd, 1994; Ingham, 1996; Evans, 2009). Anthropologists have argued that the basis of neoclassical economic understandings of the monetary system and the development of money from barter (Schumpeter, 1954; Samuelson, 1958) is a myth that lacks historical evidence. Graebar (2011) outlines two historically accurate constructs of money that are evident throughout history: commodity and credit. Orthodox understandings revolve around the concept of money as an ideologically-neutral commodity, an item that is scarce

and has intrinsic value, whose quantity is controlled external to the economy by an active central bank (Schumpeter, 1954; Friedman, 1980). Post Keynesian economists, alongside social scientists more generally, recognise money as credit, created internally within the economy by commercial banks and supported by trust and social relationships, with a passive central bank (Aretis and Sawyer, 2006b). These broadly opposing perspectives have been termed the ‘endogenous-exogenous monetary dichotomy’ (Wray, 1992; Sieroń, 2019).

Hegemonic societal discourses promote an understanding of money that is associated with an orthodox exogenously-created commodity-based perspective (Positive Money and The Guardian, 2017; Bindewald, 2018). Money is perceived as a commodity that needs to be first deposited with a commercial bank from the central bank before it is lent to borrowers, simply known as ‘deposits create loans’ (Rogers, 1989) or ‘loanable funds theory’ (Fontana, 2003). In government finances, it is believed that money needs to be first taxed or borrowed, before it can be spent (Kelton, 2020). The perspective was most potently observed in the 2017 UK election in which the Conservative Party leader Theresa May stated, “there is no magic money tree” (BBC Question Time, 2017), indicating a notion of a scarce commodity-like money. Since 2008, quantitative easing and the financial response to Covid-19 appear to support the claims of a credit-based endogenous money position as promoted by Post Keynesian researchers, which has been developed into one specific perspective termed: ‘Modern Monetary Theory’ (Bresser-Pereira, 2020; Schlotmann, 2020). They argue money is actually created at the point credit is extended by commercial banks, and any deposits from savers or the central bank are an afterthought, simply known as “loans create deposits” (Rogers, 1989). Governments spend first through creating credit between themselves and the central bank and taxes are an afterthought (Wray, 2015). This perspective

would indicate that in fact there is a magic money tree, as money is created in response to the demand for credit and limitations are in fact within the resource availability where too much money creation would result in inflation (Wray, 2015). These developments are creating a landscape in which money and credit is being challenged on an ontological level.

Money and credit have been significantly explored within the economic geography literature (Pollard, 2003), with Lee (1999: 207) stating that “money is the most geographical of economic phenomena”. Scholars highlight the need for money to have spatial framing (Martin, 1999), emphasising the spaces in which it is produced and regulated to allow its circulation, and recognise it as a tool in which nation-states impose power (Agnew, 2010). Economic geographers challenge the perspective that money is ideologically neutral, highlighting how it is a mechanism in which societal values and norms are transmitted (Leyshon and Tickell, 1994; Lee, 1999). The acceptance of a type of particular money for payment relies on the development of a ‘community of belief’ (Lee, 1999; Harvey, 2006), who in turn accept the associated social constructions and discourses of that money. Although economic geographers provide significant theoretical contributions in the study of money and credit (Pollard, 2003), there is a recognition that in the recent decade its study has largely receded from discussion (Christophers, 2015). On an ontological level, Post Keynesian scholars have made initial attempts to integrate a spatial and regional framing within their challenges of dominant neoclassical commodity-based perspectives of money (Chick and Dow, 1988; Rodríguez-Fuentes, 1998; Fuentes, 2006). However, there has been little integration of Post Keynesian within economic geography, with dominant neoclassical ontological understandings of money largely central to analysis within the discipline, often considered an accepted truth for which criticisms can be built upon

(Martin, 1999; Christophers, 2011b; 2011c). Pollard (2003: 431) describes these as “theoretical legacies” within the discipline, with neoclassical economics still occupying a hegemonic role in shaping discussion of the role of money and credit within regional development in economic geography.

Small businesses are the focus of this thesis for three reasons. Firstly, they are a key focus within economic geography for understanding access to credit and regional development (Clark and Wrigley, 1997; Mason and Harrison, 2001). Secondly, there is a growing recognition of their importance in the themes of sustainability, with them for instance providing 95% of all private sector employment (Cohen and Winn, 2007; Lewis et al, 2015) and their inclusion in the United Nations Sustainable Development Goals (2015). Finally, there is increased attention on small businesses within the complementary local currency field. LETS and timebanks were largely tailored towards individuals and operated peer-to-peer mechanisms of exchange (Lang, 1994; O’Doherty et al, 1999). CLCs such as the Bristol Pound (2021) were developed in response to criticisms that LETS and time banks were unappealing to small businesses (Dittmer, 2013). Local currency innovators believed that developing schemes that included small businesses may support scalability (Ryan-Collins, 2011; Cato and Suárez, 2012; BBC News, 2020). These perspectives developed within economic working groups of Transition Towns (2021), whose focus on the themes of sustainability and regional development.

The central focus of research and public policy within the complementary local currency field over the past ten years has been on the Bristol Pound-type CLCs (North, 2014b; Nesta, 2019). The sector appears to be undergoing change, schemes are largely voluntary and their ability to develop financially viable structures in response to reduced grant availability is unclear (Bowles, 2017; Bristol Post, 2020a). Recent

technological innovations have led to the creation of cryptocurrencies, such as Bitcoin, but there are limited insights about their implications for small businesses (Scott, 2016; Eyal, 2017). This research will use developments in ontological understandings of money and credit as a theoretical lens to consider the effectiveness of complementary local currencies.

Heterodox perspectives of money suggest exploring complementary local currencies that are based on credit. The WIR (2021), Switzerland has sustained a Business-to-Business (B2B) complementary national currency called the 'WIR Franc' since 1934 (Stodder, 2009; Stodder and Lietaer, 2016). The model uses an internal system of credit to support transactions in the complementary currency between small businesses. Company data stated that in the last publicly reported year of 2005 there were £1.6billion-worth of transactions between their 65,000 members (Stodder, 2009). A similar model termed Corporate Barter Networks (CBNs) developed within Western economies in the 1980s (Oliver and Mpinganjira, 2011; Kaikati and Kaikati, 2013) and also uses a complementary currency to support transactions between small businesses (Healey, 1996). CBNs have received limited attention with economic geography especially within the UK, even though Healey (1996) estimated the size of the industry to include 280,000 businesses transacting over £6billion in 1993. The model of complementary currency applied by these schemes have been described as 'B2B mutual credit systems' (Motta et al, 2017) but are often not limited to specific spatial scales like complementary local currencies.

Economic geographers have provided significant insights into the spatial nature of money, with Martin (1999: 6) stating, "financial systems are inherently spatial". The issues associated with small businesses have been studied through a spatial lens, with researchers highlighting the withdrawal of financial services from local spatial

scales (Hall, 2013; Lee and Drever, 2014). However, these “theoretical legacies” of neoclassical economics within the discipline lead researchers to consider the lack of credit available to small businesses within regional economies to be associated with the uneven distribution and of extraction of deposits by financial institutions in search of higher returns within core regions and financial centres (Seyfang, 2000; Leyshon and Thrift, 2007).

Post Keynesian theories of endogenous money demonstrate that banks do not lend deposits, but in fact create new money as loans when credit is demanded by households and small businesses (Wray, 2012). Post Keynesian economists have provided an initial application of how to understand this process within regional economies, with Rodríguez-Fuentes (1998: 68) stating “the matter is no longer how a fixed amount of credit is divided between regions, but how credit is created regionally”. Economic geographers have yet to fully digest these perspectives of money and credit when studying regional development and the last comprehensive review of the topic found neoclassical economics was the dominant analytic framework (Dow and Rodriguez-Fuentes, 1997). A complementary local currency that creates money as credit provides an initial insight into how this process functions within the dominant monetary system.

In 2009 Sardex launched a complementary local currency using a B2B mutual credit system model in Sardinia (Littera et al, 2014; Sartori and Dini, 2016). Its founders aimed to replicate the successes of the WIR and have had significant success in scaling the model in the region of Sardinia and replicating it across other Italian regions. Sardex supported annual transactions worth €43million between 3200 companies in Sardinia by 2014 (Dini and Kioupkiolis, 2019). It is receiving increased research interest with studies considering social entrepreneurship (Dini & Kioupkiolis,

2014), economic development (Melis & Guidici, 2014) and social impact (Motta et al, 2017). The successes of CBNs, WIR and Sardex suggest exploring the potential of applying the B2B mutual credit system model within complementary local currency schemes in the UK.

Complementary local currencies that can provide credit to small businesses are relevant to regional development and the economic theme of sustainability. Economic geographers highlight that small businesses often struggle to access affordable credit, an issue that appears to be spatially determined (Appleyard, 2011; 2013; Zhao and Jones-Evans, 2017; Degryse et al, 2018). Research suggests that further regionalisation of financial systems, modelled on German regional banks, may be required to adequately meet the credit needs of small businesses (Dovern et al, 2010; Flögel and Gärtner, 2018). There has been little academic or practitioner consideration of whether complementary local currencies in the UK can contribute to closing the access to finance gap experienced by small businesses or featuring within the 'jigsaw' of provision that is observed at local spatial scales (Henry et al, 2014). The focus on small business credit resonates with direction of travel within the complementary local currency sector, from community-based peer-to-peer models towards business orientated models (Dittmer, 2013).

Access to credit is also associated with a transformation to a more sustainable and low carbon economy (Campiglio, 2016). Local currencies schemes are concerned with regional development, but a role for credit has not been considered. Credit can allow the implementation of interventions and improve environmental performance of households and small businesses (Fuller et al, 2009). The Green Deal was a failed UK policy intervention that aimed to provide credit to households and small businesses to make energy efficiency improvements and that could be repaid from energy savings

(Rosenow et al, 2013). An ‘energy efficiency gap’ considered to be between the energy efficiency technologies available to small businesses and the level of uptake in the market has been related to the availability of credit, among other factors (Scleich and Gruber, 2008; Dietz, 2010; Allcott and Greenstone, 2012).

Credit is also considered a crucial element on an economy-scale for a transformation to a low carbon economy, with some estimates stating an additional $1-2trillion per year to 2050 needed to reorganise energy, transport and the built environment (Energy Transitions Commission, 2020). A notion of a ‘green finance’ is now within researcher and policymaker discourse, with the hope of attracting the relevant funds for investments in a low carbon economy (Zhang et al, 2019). There has been a linking of green finance to wider monetary policy, including mandating central banks with an objective to reduce carbon emissions (Campiglio, 2016; Campiglio et al, 2018; Monnin, 2018). A central policy of Modern Monetary Theory is using money created as credit by central banks for the economy-scale low carbon investments required, associated with the ‘Green New Deal’ (Bloomfield and Steward, 2020; Galvin and Healy, 2020). This thesis considers whether credit created by complementary local currencies targeted towards small businesses can contribute towards regional development and sustainability objectives.

1.2. Where did this investigation come from?

When I decided to pursue a Doctorate of Philosophy (PhD) I participated in the development of the Birmingham Pound (2018a). The aim of the scheme was to support regional development through economic localisation. It attempted to replicate the perceived successes of the Bristol Pound, which was considered to be the most

successful UK scheme. I had also spent time understanding the development of cryptocurrencies and their associated blockchain technologies. My involvement with the Birmingham Pound allowed me an initial insight into complementary local currencies on a theoretical and practical level. It provided me with experience of the potential model options currently available to currency practitioners within the UK and a platform to experiment with innovative ideas.

The failure of the Birmingham Pound was analysed within my earlier Masters research (Bowles, 2017). Whilst pursuing this PhD I visited the ecovillage of Cloughjordan, Ireland for the Blockchain and Sustainable Communities Event (2016). On my journey, I introduced myself to a person on the train that was also on the way to the conference. He explained that he was an employee and researcher of a complementary local currency scheme called Sardex, based in Italy, something I had not heard of prior to that encounter. The train journey was short, but he was able to briefly introduce the key theoretical notion of Sardex: “that all money is credit, whilst not all credit is money” (inspired by Ingham, 1996). The conference began the following day and the person on the train turned out to be Associate Professor Paolo Dini, who was chairing the conference and had written academic articles on Sardex (Motta et al, 2017; Dini & Kioupkiolis, 2019). He believed that local currency practitioners did not understand money on a theoretically fundamental level, which is reflected in the models that were being applied within local spatial scales.

The theoretical insights provided by Associate Professor Paolo Dini inspired the development of a credit-based complementary local currency in the city of Birmingham. It would take into account that if money is credit, a complementary local currency should be structured to facilitate the creation of credit. Through engagements with the wider UK complementary local currency sector at conferences and events, it

became clear that B2B mutual credit systems are underexplored both theoretically and practically. Bristol Pound had considered the model through a European-funded project with Sardex termed ‘DigiPay4Growth’ (European Commission, 2017). The scheme they developed: ‘Prospects’, did undergo a significant amount of development but was not successfully launched. Prospects had a publicly accessible promotional video and received a brief mention within Marshall and O’Neill (2018). Lack of interest in the successful WIR and Sardex schemes amongst the UK complementary local currency practitioners, alongside the failure to launch Prospects, raised the initial need for this investigation.

After further investigation of B2B mutual credit systems, I proposed that the Birmingham Pound pursue the model. Over a period of three years from 2017, there was the development of a credit-based local currency in the city. My role as a volunteer with the Birmingham Pound eventually evolved into a cofounder of a commercial startup called Credex Network Ltd applying a B2B mutual credit system. This PhD will analyse the journey that was undertaken to develop this credit-based complementary local currency through application of insights gained through research on Sardex through the application of Participatory Action Research (PAR) techniques. Credex Network Ltd was later relaunched as Parity Network Ltd and from January 2020 operated a credit-based complementary local currency with twenty five small businesses in Birmingham until its failure in early-2021. My dual roles as a researcher and practitioner have provided valuable insights, whilst posing positionality challenges that are discussed within the methodology. The Birmingham Pound was aiming to be a non-profit structure such as a cooperative, whereas Parity Network Ltd is a commercial business in which I own an equity stake and hope to one day profit from my involvement.

The PhD thesis will detail the theoretical and practical journey that has been undertaken since that train journey to Cloughjordan, Ireland. It outlines the application of heterodox understandings of money and credit to the development of a complementary local currency within the UK. It provides an initial introduction to how heterodox economic theories can be understood and applied within a spatial and regional context. It therefore devotes half of the thesis to a case study to analyse Sardex: its theoretical basis, how it creates credit, its benefits to small businesses and its contribution to regional development within Sardinia, Italy. The second half of the thesis is devoted to UK complementary local currency schemes: their theoretical basis, their ability to offer credit to small businesses and their potential impacts on regional development. The development of Parity Network Ltd is then studied using PAR techniques in an attempt to disseminate the theoretical findings of this research within a real-world context.

1.3. Structure of Research

The investigation has four objectives that are outlined below:

i. *Understand the Sardex complementary local currency through the lens of heterodox economic theories and geographical perspectives of money and credit. To consider how the local currency is created in response to the demand for credit and how it is used by small businesses.*

ii. *Establish whether Sardex and its credit-based complementary local currency has initial contributions towards regional development. To establish how the scheme is sustaining positive economic, social and environmental outcomes.*

iii. *Review complementary local currency schemes within the United Kingdom and their ability to provide credit to small businesses. Understand how the schemes provide credit and their initial contributions to regional development.*

iv. *Apply the findings from the first three objectives through Participatory Action Research to develop a complementary local currency in Birmingham, UK employing endogenously-created credit-based model. To understand the barriers, opportunities and initial contributions to regional development.*

The **literature review** explores the theoretical understandings of money and credit to allow an ontologically grounded investigation. It considers the developments within economics and social science over the past thirty years, highlighting the commodity versus credit perspectives of the ontological nature of money. It examines geographies of money and credit and how these are currently considered within a framework of regional development, alongside the connection of the three themes of sustainability: economic, social and environmental. It then highlights the three dominant complementary local currency models: LETS, timebanks and CLCs, alongside providing an overview of the less researched B2B mutual credit systems and cryptocurrencies. It identifies where complementary local currencies have been considered in relation to regional development by economic geographers and to three themes of sustainability. It concludes with limitations of the current literature and emerging questions.

The **methodology** begins by exploring how the ontological differences between commodity and credit money have implications for the research philosophy. It identifies that although orthodox perspectives of money have a greater association with a positivist research paradigm, money and credit are in fact social constructions that better suit a social constructionist paradigm. It considers my own positionality and

how this affects research design. It outlines the qualitative data collection techniques that were used to obtain data for this research that is structured in two distinct parts. The first is the investigation of Sardex, Sardinia which is structured as a case study and required two visits to conduct fieldwork. Sardex company stakeholders; managers, employees, external project leaders were interviewed to understand the scheme and its current development. These insights were triangulated through interviews with eighty business users in Sardinia to understand how they use Sardex. Secondly, it is a review of complementary local currency schemes within the UK. I interviewed past and current scheme managers of complementary local currencies, alongside attending sector conferences and events and triangulating insights with interviews with sector experts. Whilst conducting my research, I was implementing initial findings to a B2B mutual credit system within Birmingham in an attempt to consider initial contributions to regional development, which is explored using PAR techniques.

The **first results chapter** considers the theoretical and practical implications of the Sardex scheme and forms the first part of the case study. It demonstrates that the complementary local currency can be understood through applying heterodox monetary theories and geographies of money and credit, providing an initial introduction into the relationship between these parallel disciplines. Through this it establishes why Sardex is successful in comparison to schemes that receive larger amounts of public and research interest. These insights allow the consideration of how the local currency is created in demand for credit and how it is used by small businesses. The **second results chapter** forms the second part of the case study and considers the contributions the B2B mutual credit system employed by Sardex has towards the three themes of sustainability in the context of regional development. It

demonstrates the initial contributions Sardex is having on a range of sustainability objectives within economic, social and environmental themes. It establishes that Sardex is positively contributing on a range of issues including: localisation of economic activity, supporting traditional high street spaces, provision of credit to small businesses, addressing extreme poverty through multistakeholder partnerships, supporting disadvantaged demographics and supporting investments in energy efficiency and renewable energy technologies. These are all objectives that have been highlighted by researchers as relevant aspirations for complementary local currency schemes in challenging the dominant financial and monetary systems

The **third results chapter** reviews the ability of schemes within the UK to offer credit to small businesses. Through review of the individual schemes, it demonstrates the endogenous-exogenous monetary dichotomy has affected their structure and ability to provide credit to small businesses. It first considers the dominant exogenously-created commodity-based Convertible Local Currencies (CLCs) and innovative schemes including localised cryptocurrencies. It highlights that the sector has largely failed to obtain a financially viable business model through interviews with the Bristol and Totnes Pounds. It confirms the growing academic consensus that the sector's impacts within the UK are limited. It considers the ability of commodity-based local currencies to provide credit through analysis of a Bristol Pound business loans initiative, demonstrating parallels in the way money and credit are understood within wider analysis of regional development. Secondly, it considers the application of endogenously-created credit-based models through interviews with scheme managers of Prospects, Open Credit Network (2021) and four Commercial Barter Networks (CBNs). It demonstrates that these complementary local currencies create money as credit, which has similarities to how Post Keynesians argue money is

created within regional economies (Dow and Rodriguez-Fuentes, 1997). The insights from both commodity and credit based schemes are triangulated using interviews with small business finance and local currency experts. It considers initial contributions these different models have to regional development through the provision of credit to small businesses. The **final results chapter** applies the findings from the first three chapters to a practical complementary local currency scheme applying the B2B mutual credit system model in Birmingham. It uses PAR techniques to allow analysis of my personal involvement in a scheme that began as the Birmingham Pound and evolved into a commercial business called Parity Network Ltd. The scheme eventually launched an endogenously-created credit-based complementary local currency in January 2020. This chapter considers how observations in the field relate to theoretical understandings of the role of money and credit within regional spaces. It considers initial contributions the development of Parity has towards regional development.

The **conclusions** bring together the findings of the four results chapter and outlines the original contribution made by the research. The chapter outlines the implications for geographies of money and credit and potential directions of travel to consider Post Keynesian perspectives within future studies. It then considers the theoretical implications and outlines the implications for practitioners and policymakers in using complementary local currencies to support regional development through providing credit to small businesses.

1.4. Summary

The introduction provided an overview for this study. It highlights two consistent threads that are evident within this thesis. Firstly, complementary local currencies can

be used as a framing to demonstrate that the understandings of money and credit are contested. The dichotomy in perspectives of money and credit have affected the basic assumptions in creating complementary local currencies. Secondly, this contestation affects how researchers consider the role of money and credit within regional development. This specifically affects the ability of complementary local currencies to support the themes of sustainability, an objective widely considered within the sector, but also has implications for broader analysis of the role of money and credit within regional development studies. The next chapter will consider the academic literature to provide theoretical grounding for this study.

2. THEORIES OF MONEY, CREDIT AND SPACE

The aim of this chapter is to provide an initial literature review of money and credit, drawing specifically on economics, sociology and anthropology, which it then considers in the context of geographies of money and credit. It provides a theoretical grounding for the next literature review chapter that will specifically focus on complementary local currencies.

2.1. The Nature of Money and Credit

Money and credit have been contested for centuries. Since the 1990s they have become a greater subject of debate. The initial section of this chapter explores the different theoretical perspectives through a comparison between orthodox and heterodox economics and their understandings of money and credit.

2.1.1. Orthodox Economic Understandings

Classical economist Smith (1776) considered money an evolution from barter, believing it acted as an ideologically-neutral medium of exchange for trading commodities. Smith (1776: 21) stated the “propensity to truck, barter and exchange” was a fundamental human quality that predated the state. Money was considered ‘neutral’, as market forces determined the most exchangeable commodity, e.g. tobacco, gold. Smith (1776) referenced Aristotle’s Politics (350 BC: 9), who described “barbarous nations” practising barter. Smith (1776) and Aristotle (350 BC) highlighted the ‘double coincidence of wants’ issue: where two individuals held commodities

neither of them wanted. Barter has high transaction costs, issues of divisibility of differing commodities and requires negotiation of relative value. Classical economists believed the introduction of a third commodity overcomes these issues (Goodhart, 1998). Orthodox economists constructed models in which free markets eventually allocated a widely accepted commodity for replacing barter within transactions (Menger, 1892; Kiyotaki and Wright, 1989; 1993). The allocation of this commodity was considered through an ontological notion of natural equilibrium, or Smith's (1759; 1778) 'invisible hand'.

Smith (1776) referenced Hume (1752a; 1752b) who believed gold or silver was the most effective commodity for transactions, believing money needed intrinsic value, to be a physical substance with finite divisibility. Hume (1752a) criticised the creation of paper-credit by banks that was unbacked by a commodity. He created the 'price-specie flow mechanism' model that represented a gold standard. Under this mechanism, a change in the amount of gold-backed currency in circulation would result in a proportional change in the price of goods and services. Hume (1752b) considered the quantity of money within the economy as irrelevant or neutral to economic output. The role of money was considered to be merely transactional, a perspective that became associated with the concept of 'metallism'. Knapp (1924) developed metallism when outlining his own opposing perspective of the State Theory of Money or 'chartalism'. Under chartalism, the metal content of money is irrelevant as it is created through the monopoly position of the state determining an acceptable means of payment for taxes and liabilities. Knapp (1924: 40) stated, "we have already declared in the beginning that money is a creation of law...that it is a creation of the legislative activity of the State, a creation of legislative policy". The state decides the

money accepted for payment, which can be an intrinsically worthless token. Chartalist perspectives were rejected by classical economists in favour of a metalist approach.

Karl Marx recognised the importance of money within economic relationships. A central observation of capitalism: “M-C-M [or] money used to buy commodities, including labour power, in order to sell the result of their combination for more money than was originally expended” (Morris, 1967: 405). Marx believed money masked or veiled the underlying social relationships within the production of commodities. Money represented or constituted the embodiment of abstract labour that allowed other commodities to be measured against it (Marx, 1872). Marx hoped to study the ‘real economy’, a set of supposedly objective concrete forces, hidden superstructures or rules (Williams, 1973). Marx did not believe money evolved from barter, but did take a metallist commodity money perspective.

“The Marxist conception, in brief, is that the social nature of money is such that gold, by reason of its physical attributes, fits the social requirements best” (Morris, 1967: 413). Marx believed that credit instruments were used to increase the velocity of ‘real’ money in circulation, something he associated with ‘fictitious capital’ (Marx, 1894). Credit instruments allow capitalists to first purchase commodities to be transformed into final commodities for sale within the market. Marx believed the limit of the amount of credit that could be produced was inherently linked to the reserves of commodity money the issuing institution held. “The size of the hard cash reserve fund establishes basic limits, which are to a material extent the result of institutional arrangements, on the size of the credit superstructure which may be erected on the hard cash base” (Morris, 1967: 416). Although credit instruments could emerge in simple historical commodity production arrangements, Marx suggested that their proper economic application was within capitalist commodity production.

Knapp (1924) influenced Keynes (1930) in A Treatise on Money where he believed money was created by a state as a unit of account, means of payment and mechanism to pay debts. “The state, therefore, comes in first of all as the authority of law which enforces the payment of the thing which corresponds to the name or description in the contracts. But it comes in doubly when, in addition, it claims the right to determine and declare what thing corresponds to” (Keynes, 1930: 4). Keynes recognised a range of potential monetary structures; from the metallist commodity money through to chartalist state-created money. Alternative types of money relate to the ability of private parties to agree what would be accepted as payment for debts. Keynes (1930) identified a role for commercial banks where a unit of account allocates debits and credits on balance sheets, termed ‘book-money’. He recognised that book-money was government-sanctioned money created by commercial banks. This type of money did not need to be linked to gold, it could be issued as paper-credit, as it was acceptable as payment for taxes or debt. Keynes’ work resonated with the perspectives of Alfred Mitchell-Innes who considered anthropological studies of banking practices and concluded that money was credit, extended from one party to another. Innes (1914) stated the position within his influential The Credit Theory of Money and summarised, “credit, and credit alone, is money” (1914: 159).

Keynes (1935) was critical of classical perspectives that considered money a veil to economic exchanges within supposed equilibrium. He disagreed that the quantity of money in circulation had a neutral effect on economic transactions. Money provided a medium of exchange, a store of value and a standard of deferred payment. The supply and demand for money affected the interest rate, which directly affected investment, demand and employment levels within the economy (Keynes, 1935). These notions would undermine the concept that money was a neutral commodity. The three roles

of money led Keynes (1935) to identify further demands than just transactional: speculative and precautionary. His famous concept of the ‘liquidity preference’ came from the speculative and precautionary demands for money. Individuals hold money as a store of value as the future is uncertain, interest rates may rise or fall, resulting in investment or repayment opportunities (Johnson et al, 2001).

The development of the Bretton Woods system, the postwar gold standard, aimed to reduce the speculative demand for money (Keynes, 1935). The international monetary system formed in 1944 used capital controls, a central role for the state and fixed exchange rates. Keynes’ original proposal was a supranational credit-based currency called the ‘Bancor’ that would record debits and credits between trading nations (Hudson, 2010). It would be an international ‘book-money’ without intrinsic commodity-like value and no speculative quality (Keynes, 1943). The Bancor proposal was rejected in favour of using a US Dollar linked to gold as the global standard for payments (Steil, 2013). Western nations' currencies would be fixed to the US Dollar, in turn this would be exchangeable for gold. The need to assign intrinsic value to the US Dollar was reflective of a metallist understanding of money.

Schumpeter (1954) was largely critical of Keynesian perspectives in his own works on the cycles of capitalist economies. He believed economic processes could be solely analysed through exchange of goods and services, further strengthening the belief that money merely had a neutral technical role to facilitate transactions. Schumpeter (1954: 277) outlined, “so long as it functions normally, [money] does not affect the economic process, which behaves in the same way as it would in a barter economy: this is essentially what the concept of Neutral Money implies. Thus, money has been called a ‘garb’ or ‘veil’ of the things that really matter”. Schumpeter (1954) believed

that an automatic gold currency is part and parcel of a laissez-faire and free-trade economy.

2.1.2. Neoclassical Economics

Neoclassical economics further ingrained the ontological belief of the naturalistic tendencies of free market capitalism. The discipline used a positivist perspective to study supposedly objective economic relationships in its central proposition: General Equilibrium Theory (Arrow–Debreu, 1954). According to this theory, individuals participating within a free market would rationally pursue their own self-interest, creating equilibrium. General Equilibrium Theory provided the frameworks that neoclassical economics was constructed upon, ontologically based in positivism. Friedman (1953: 146) coined the term of 'Positive Economics' and believed, "[i]ts performance is to be judged by the precision, scope, and conformity with experience of the predictions it yields. In short, positive economics is, or can be, an 'objective' science, in precisely the same sense as any of the physical sciences". Neoclassical economics considered money as a technicality, a neutral medium of exchange, drawing on the perspectives of Hume (1752a; 1752b) and Menger (1892). The function of money was to reduce transaction costs for individuals essentially participating within barter. Samuelson (1958: 55) stated that "even [in] the most advanced industrial economies, if we strip exchange down to its bare essentials and peel off the obscuring layer of money, we find trade between individuals and nations largely boils down to barter".

Milton Friedman and colleagues at the University of Chicago developed criticisms of the dominant Keynesian monetary policies. They focused their attention on the

quantity of money in the economy, originally proposed by Hume (1752b) through the theoretical framework of the ‘Quantity Theory of Money’ (Friedman, 1958). The Chicago economists provided a challenge to Keynesian perspectives, appointing them the title of ‘monetarists’. Milton Friedman developed his theories through studying the history of monetary policy in the United States (Friedman and Schwartz, 1963). Monetarists believed that the quantity of money was directly proportional to nominal indicators in the economy, such as price levels, wage costs and exchange rates. An increase of the quantity of money in the economy by the central bank would increase these nominal prices. The concept of the neutrality of money was central in the theory. An increase in money supply affects nominal prices due to inflation and does not reflect changes in the ‘real economy’. Monetarists believed that an increase in the quantity of money did not affect supposed ‘real variables’, like Gross Domestic Product (GDP), employment and consumption (Lucas, 1972; 1980).

Monetarists believe money is an exogenous variable, whose quantity is determined by the supply of a scarce commodity, such as gold, or creation of reserves by the central bank external (Wray, 2001). Within this framework, loosely known as the ‘loanable funds theory’, the central bank controls the quantity of money in circulation through the deposit of reserves to commercial banks (Robertson, 1940; Tsiang, 1989). These deposits are considered a commodity in which loans to individuals and businesses can be made against. Fontana (2003: 294) summarises this “traditional view of the money process: according to the classical loanable funds theory, the creation of additional bank credit requires the use of additional resources”. Additional money creation requiring additional resources results in a perspective where there is a limited amount of money available to borrowers (McKinnon, 1973). This limited amount of money comes from the savings of individuals within commercial banks (Tsiang, 1980).

Further money creation would affect nominal indicators through inflation, as all prices would rise in proportion to one another. The development of these approaches were further framed as natural certainties that could be understood without ideological interpretation. Friedman (1980) for instance argued; “as a scientific doctrine, the Quantity Theory of Money (like the law of gravity) is ideologically neutral.” The prescription of the monetarists was that central banks should create a dependable amount of money each year, so that markets would know what resulting level of inflation to expect (Friedman, 1971). Monetarism has become interchangeable with metallism, with scholars such as Davidson (1999) using the term in place of metallism when considering money neutrality; “Can money be neutral even in the long run? Chartalism vs Monetarism” (1999: 196).

The interest of conservative politicians in monetarism shaped the political movements of Ronald Reagan and Margaret Thatcher. Both governments eventually applied policies that were directly the result of neoclassical and monetarist interpretations of the economy and monetary systems (Pepper and Oliver, 2001; Backhouse, 2002). Margaret Thatcher (1983) demonstrated a monetarist perspective by stating, “[t]he state has no source of money, other than the money people earn themselves. If the state wishes to spend more it can only do so by borrowing your savings...there is no such thing as public money. There is only taxpayer’s money”. Money within the dominant classical and neoclassical understandings is considered an object, substance or commodity - drawing on metallism. The invisible hand of the market decided the most efficient commodity. The perspective resonated with the ontological belief that equilibrium within markets was a natural phenomenon (Lewis et al, 2020). Monetarists believed the quantity of money was an exogenous variable, controlled by central banks through the level of deposits with commercial banks. These perspectives

are largely the dominant discourses of money within society. Over the past three decades there has been a growing challenge to these perspectives and discourses.

2.1.3. Heterodox Economic Understandings

Neoclassical and monetarist accounts have been undermined by anthropological evidence from historical and contemporary pre-industrial societies. Anthropologists have failed to find evidence of barter within these societies (Grierson, 1977). Humphrey (1985: 48) stated, “no example of a barter economy, pure and simple, has ever been described, let alone the emergence from it of money...all available ethnography suggests that there never has been such a thing”. Where direct exchanges of commodities took place, these practices were ceremonial to build relationships and reciprocity, rather than pursuing maximum gain for the individuals involved (Polanyi, 1971; Dalton, 1982; Gregory, 1982). Dalton (1982) contrasted reciprocal exchanges versus profit maximisation through barter by highlighting Christmas ceremonies. “Such reciprocal gift-giving is a material expression of an enduring social relationship. Exchanging Christmas gifts celebrates kinship and friendship” (1982: 182). Economic anthropologist David Graebar popularised these perspectives in: Debt: The First Five Thousand Years (2011). In a chapter he termed, ‘The Myth of Barter’, he identifies two historical types of money: commodity and credit.

Although commodity money is the foundation of neoclassical economics, Graebar (2011) believed it was rare within human history. Commodity money and by extension barter, which he termed ‘swaps’, was only used in low trust environments: exchanges with unknown communities, long distance trade or in societal collapse. Graebar (2011; 2012) detailed how favours between individuals preceded the development of credit

money, a notion he terms ‘social currencies’. Graebar (2011) uses the following analogy:

> *“Say, for example, that Joshua were to give his shoes to Henry, and, rather than Henry owing him a favour, Henry promises him something of equivalent value. Henry gives Joshua an IOU. Joshua could wait for Henry to have something useful and then redeem it. In that case Henry would rip up the IOU and the story would be over. But say Joshua were to pass the IOU on to a third party-Sheila-to whom he owes something else. He could tick it off against his debt to a fourth party, Lola-now Henry will owe that amount to her. Hence, money is born, because there is no logical end to it” (Graebar, 2011: 46).*

IOUs circulated within local communities as long as there is trust in the issuing party. The anthropological observations confirm the perspectives of Mitchell-Innes who believed that “credit, and credit alone, is money” (1914: 159). Mitchell-Innes (1914) believed that if Henry gave Joshua a gold coin instead of an IOU, they would still be in the same position. The gold coin is a promise to pay something equal to the value of a gold coin at a later date, it is merely a widely accepted IOU. “In this sense, the value of a unit of currency is not the measure of the value of an object, but the measure of one’s trust in other human beings [to accept it as payment]” (Graebar, 2011: 47).

Anthropologists detail the use of credit within the first urban civilisation: Mesopotamia (3500 BC). Money was an accounting tool between tradespeople, inscribed on clay tablets (Ganßmann, 2012; Renger, 2012). The tablets “did not simply record a promise to pay the original lender, but was designated ‘to the bearer’ - in other words, a tablet recording a debt of five shekels of silver could circulate as the equivalent of a five-shekel promissory note-that is, as money” (Graebar, 2011: 214). Once debts were

repaid, the tablets were smashed. Traders were able to create their own credit arrangements based on trust without the need for these early-state structures to enforce payments (Garfinkle, 2004; Widell, 2005). The development of gold coins or bullion was a later incarnation which Graebar (2011) links directly to the development of empires, such as Rome, and the Greek city-states between 800BC-600AD (Rowan, 2013). He describes how states created local ‘markets’ for goods in which they had a monopoly, to allow mercenaries to spend their earnings. These state market structures are a polar opposite to the notions of the development of natural free markets outlined by the classical economists (Smith, 1776).

Anthropologists directly connect the development of coinage to the imposition of power structures and state hierarchies (Peacock, 2003; von Reden, 2020). Coins or bullion needed to contain a certain level of precious metals as mercenaries were often hired from outside of the territories controlled by the states. When they returned to their communities, the bullion could be exchanged at the value of its precious metal content. However, the value of the coins within the territories controlled by the state exchanged for higher values than the embodied metals (Graebar, 2011). Even in periods when states debased their bullion money with non-precious metals, they maintained their value within their territories. The precious metal element of the coinage supported long distance trade, with the bullion taking on a metallist role outside of the spaces they controlled. The exchange of coins for higher value than their base metals within state-controlled spaces, was because they could be used to pay taxes, fines or debts (Graebar, 2011). The state played a central role in supporting the value of coinage, with Peacock (2003: 22) outlining: “different notions of value sometimes complemented each other: for example, state guarantees of nominal value made coinage more acceptable in most economic transactions, even those in which the state

was not involved". The notion reflected the role of the state in the designation of the value of the money being exchanged, as outlined by Knapp (1924).

The collapse of these empires from 600 AD and the onset of the dark ages in Europe resulted in the collapse of coinage (Grierson, 1959). Societies reverted back to credit systems that were prevalent throughout human history. The unit of measurements of coinage were still used within written credit and debt arrangements, even though coins were no longer in circulation (Schofield and Mayhew, 2002). An example of the use of a currency after the collapse of these empires was the pound sterling in Britain (Feavearyear, 1931). Originally it was a unit of weight for grain under the Romans, a fact Keynes (1982: 239) had also noted; "all weight standards of the ancient and also of the mediaeval world...have been based on either the wheat grain or the barley grain". In the dark ages it was still used as a unit of account in credit arrangements (Weale, 2000). No grain changed hands, but acted as a unit of account that both parties could use to understand the value being exchanged. Other scholars have pointed to the importance of mediaeval legal institutions for further supporting the development of credit money around an accepted unit of measurement. A relatable value was needed to assess the level of compensation required for victims of injury or theft (Grierson, 1977; Peacock, 2003; Graebar, 2011).

Similar to the clay tablets of Ancient Mespotamia, credit arrangements were recorded on 'tally sticks' (Grandell, 1977; Apostolou and Crumbley, 2008). The origin of tally sticks is unknown, with some archaeologists believing the Ishango Bone from the Upper Palaeolithic (18,000 BC) represents an early tally stick (Huylebrouck, 2019). Wray (2018) when discussing the development of credit instruments dating back 10,000s years, states, "Where did money come from? We do not know, and will not know...because money pre-existed writing". Tally sticks are made from wood or bone

with simple notches cut into the stick and then split in two. “Each party to a transaction kept one half of each tally stick, and the accounts were audited by fitting the two pieces together to determine if they would tally...it was furthermore impossible to falsify either half of the tally without detection” (Apostolou and Crumbley, 2008: 61). Mitchell-Innes (1913) highlighted the importance of tally sticks: “for centuries, how many we do not know, the principal instrument of commerce was neither the coin nor the private token, but the tally”. Tally sticks provided an unfalsifiable accounting tool for credit and debt arrangements using a mutually recognised unit of account, such as a pound of grain or silver. Once debts were repaid, the tally stick was destroyed.

In the UK, King Henry I formalised tally sticks as a means of payment for taxes in 1100 (Lee, 1971). He would first create tally sticks as a method of paying subjects to complete the tasks required by the crown (Apostolou and Crumbley, 2008). As he was the most trusted individual within the kingdom, this IOU would circulate as money. Wray (2016: 4) states, “anyone with a debt to the King needed a tally stick (any tally stick as long as it was issued by that King) to pay taxes”. They demonstrate the chartalist nature of money, as the wooden or bone sticks have no intrinsic value or substance. Tally sticks were used to form the Bank of England in 1694 (Bank of England, 2019) and were accepted as payment of taxes by the UK Government up until 1826. In 1717 the UK Government had tasked Sir Issac Newton to establish a gold standard for its paper notes (Weale, 2000). Some perceived intrinsic value was needed to support long distance trade and the Empire (Fay, 1935). However, a development that demonstrates a chartalist perspective was the creation of a Virgina Pound in 1755 the North American colony (Grubb, 2015; 2017). British colonies were not permitted to mint coins or create gold-backed paper notes, as that was a monopoly for the King of England (Wray, 2016). Short of currency, the colonial government of

Virginia issued a paper note, the Virginia Pound, as an IOU and used it to fund colonial expenses. In the same act that created paper notes they also created new taxes that could only be paid in those notes. The new taxes match exactly the amount of new currency and date of their redemption (Grubb, 2015: Table 2).

The colonial government spent the newly created money to finance its colonial operations and then accepted it as payment for taxes later in the year. To demonstrate the complete reversal of traditional orthodoxy: each year the Virginia colonial government would order all of the redeemed paper notes to be burnt. Grubb (2016: 21) outlined, "...notes removed via tax payments did not sit long in the treasury before being burned". In opposition to orthodox narratives, taxpayers only had money because the state created it as credit to be later redeemed as tax and burnt. This final step is similar to Joshua and Henry, where once Henry had something useful for Joshua, "in that case Henry would rip up the IOU and the story would be over" (Graebar, 2011: 46). The historical observations made by anthropologists and economic historians demonstrate a predominantly chartalist perspective of money. These systems do not require currency to be backed by precious metals, even if they use precious metals as a unit of account. State structures create demand for intrinsically worthless objects through requiring them for payment of taxes. Money is created as an IOU on clay tablets, tally sticks or notes and then when redeemed through taxes are destroyed, repaying debt owed. Money is considered within heterodox understandings to be a 'function'; to provide liquidity within an economic exchange in the form of credit, opposed to neoclassical perspective in which it is a commodity 'substance' in its own right.

2.1.4. Heterodox Critiques of Neoclassical Economics

Wray (2012) states "the story told about the origins and evolution of money is designed to shed light on the 'nature' of money. The orthodox story draws attention to money as a transactions-cost-minimising medium of exchange. By contrast, the heterodox tradition focuses on money as a complex and important institution" (2012: 2). A metallist perspective of money as a neutral commodity lays the foundation for an individualistic free market without state structures or a social dimension to transactions. A chartallist perspective grounded within anthropological evidence, lays the foundation for a communitarian or state-centric model of money and credit-based within social relationships (Graebar, 2011; 2012).

Since the 1980s there have been further theoretical challenges to neoclassical ontological understandings. Hahn (1982: 1), when discussing money and General Equilibrium Theory believed "the most serious challenge that the existence of money poses to the theorist is this: the best [neoclassical] model of the economy cannot find room for it". Graupe (2017) conducted analysis of key academic economics textbooks and found that the dominant theories of "Walras, Schumpeter and Menger who all present 'money' as a simple fact of experience, which is so self-evident, that it does not require any discussion" (2017: 123 - *translation in Bindewald, 2018*). Wray (2012) believes the issue centres in the epistemological foundations of economics. He draws on the economic anthropologist Stanfield (1986) who outlined a formalist-substantivist philosophical debate (Polanyi and MacIver, 1944; Balan, 2012). Formalist methods used abstract models of individuals making rational profit-maximising decisions within a framework of scarcity. These pre-created models provided the assumptions that adherents aimed to confirm with observations (Elardo and Campbell, 2006). "Historical detail can then be added to the picture; mental gymnastics ensure that historical 'facts'

are consistent with the basic neoclassical view of the world" (Wray, 2012: 5). Substantivists first conducted observations of the society in which economic transactions were embedded and then constructed theory.

Sociologists further criticised the neoclassical perspective of money as an ideologically neutral unit of account. Dillard (1987) considered money as an institutionalised factor of the power relations of capitalism, challenging the perspective as a neutral medium of exchange (Ganßmann, 2012). Dillard (1987) believed money maintains the privately owned means of production. Businesses are central to the capitalist system and their main aim, and in some cases legal duty, is to maximise the accumulation of money to their owners. Workers legally do not have access to the means of production and instead exchange their labour in return for money. Dillard (1987) believed that money is therefore an institution of capitalism, a viewpoint that resonated with Polanyi (1957). It plays a different role under a capitalist system than it did under pre-capitalist societies, feudalism or communism, similar to Marx's perspectives (Morris, 1967). Dodd (1994) provided a critique of the orthodox perspectives and highlighted a lack of an epistemological basis to the methodologies of studying money. Dodd (1994) believed that greater analysis of money was needed before the creation of monetary theories. In a departure from the supposed ideologically neutral economic analysis, he believed the role of the researcher in constructing their own realities of money should also be taken into consideration. Dodd (1994) raised the notion that circuits of exchange of money had temporal and spatial features, recognising that individuals held money knowing that it could be exchanged again within the network.

In a significant contribution, Ingham (1996) outlined the case for money as a social relationship. Drawing on the work of Lawson (1994), Ingham (1996: 509) stated that, "mainstream economics does not possess an adequate *ontological* theory of money"

grounded in accepted sociological theories such as critical realism (Lawson, 1994). Ingham (1996) outlined a similar case to Dodd (1994), where he argued that neoclassical models of money merely reduce it to a medium of exchange between abstract rational economic agents. “[A]nalysis is radically ahistorical and asocial in the sense that particular forms of economic organization are deemed to be epiphenomenal or merely ‘contextual’; complex social structures, banks, productive enterprise, etc, is reduced to purely abstract exchange relations between rational maximizing agents” (Ingham, 1996: 512). Ingham (1996) believed “the partial break with economic ‘classicism’ in the first part of the century, most notably by Keynes was, to some extent at least, an attempt to make sense of new, or more widespread forms of bank and state credit money in which, to some at any rate, the ‘social’ basis of money was blatantly obvious” (1996: 509). Ingham (1996) highlighted the observations that Keynes made in regards to the creation of money as bank entries or ‘book-money’. It bore greater relevance to the chartalist perspective of money: “the production of state-credit money is in principle the same process as bank-credit money” (Ingham, 1996: 522).

2.1.5. Heterodox Economics

Heterodox understandings centre on the notion that states and commercial banks create money as credit. Rogers (1989) details a comparison: a neoclassical perspective is that deposits make loans, whereas a (Post) Keynesian perspective is that loans make deposits. In layman's terms: the former is where deposits of commodity money by the central bank or savers allow an extension of loans to firms and households, the latter is where commercial banks create money in response to

demand for loans which the central bank accommodates through providing adequate reserves. Margaret Thatcher considered the state as a receiver of commodity money from individuals. Conversely, the Colonial Government of Virginia issued money as credit, which was redeemed later as tax. Wray (1992) outlines the theoretical basis of these opposing perspectives as the 'endogenous-exogenous monetary dichotomy'. Within neoclassical models, money is structured as a commodity whose supply is determined externally to the economy by the central bank. Whereas, Post Keynesian perspectives argue money is created internally to the economy by governments and commercial banks as credit. Ingham (2004) summarised the development of Post Keynesian thinking: "money is a social relation of credit and debt denominated in a money of account" (2004: 25).

Credit created by commercial banks can only be used if it is trusted by all parties within the exchange. Ingham (2004: 25) states; "monetary societies are held together by networks of credit/debit relations that are underpinned and constituted by sovereignty". These parties are more than just the commercial bank and its customers, but a wider 'multinodal financial network' including sovereign governments acting as regulators, as described by Agnew (2005; 2010) in his analysis of currency regimes. The perspective that money is created within the credit-debt relationships between borrowers and banks has also been further described through Monetary Circuit Theory (Parguez and Seccareccia, 2000). It has historical roots dating back to the beginning of the 20th century and the credit theory of money (Innes, 1914) and Post Keynesian economists consider it within endogenous theories of money (Pilkington, 2009). Monetary Circuit Theory highlights a similar interconnected multinodal financial network, where all parties recognise one another's debt and credit book-money arrangements. Transactions within the economy are not just between the two parties

buying and selling, but also include a commercial bank that updates the relevant book-money accounts (Rochon, 2003; Realfonzo, 2006).

The circulation of money within circuits is affected by the social relationships of parties making the exchange. The notion that money has social meaning was highlighted by Viviana Zelizer. Zelizer (1994) described how households would participate in earmarking monies for different purposes; i.e. food, healthcare, social events that could be spent within local circuits of social relationships. For instance, immigrants to the early 20th century US would spend money on lavish funerals. These were key social ceremonies within the ethnic communities but money would be spent with locally connected suppliers. Zelizer (1994) believed that although the state had ensured there was now only one national currency, households still allocated money for different purposes, distinct activities and relations (Zelizer, 2010). “People continually disrupted monetary uniformity, furiously differentiating, earmarking and even inventing new forms of monies” (Zeliver, 1994: 138-139). Individuals spend money within local circuits of their own connections, with their social relationships affecting their spending decisions. “For example, people regularly distinguish between relations that are short-term or long-term, intimate or impersonal, and broad or narrow in the range of shared activities they encompass. People also mark moral boundaries among categories of money: consider the variable meanings of ‘dirty’ money, ‘easy’ money or ‘blood’ money” (Zelizer, 2010: 89). It was later described as a ‘Zelizer Circuit’ by Colins (2000) who specifically considered wealth inequality and how the super rich often kept wealth confined within close circuits of family relationships.

The perspective that money is a social relationship was further developed by Evans (2009). He specifically draws on theorists including John Maynard Keynes and Karl Marx to compare their perspectives of money against Viviana Zelizer. The former

consider money to be a leveller of values, depersonalising relationships within transactions. As money becomes more exchangeable, it further erodes social differences and acts as a homogenising force. Evans (2009: 1028) groups these theories under a “money changes values” perspective. In opposition to this perspective is the work of Zelizer (1994; 2005) who believes that social values affect the exchangeability of money. Individuals express social meaning through money restricting exchange. Under this perspective “values change money” as individuals transact within social considerations.

Over the past three decades heterodox economists have further argued that money is endogenous in nature (Arestis and Sawyer, 2006b) whereas stewards of neoclassical perspectives still support a notion of exogenous monetary supply (Keen-Krugman Debate, 2014; Sieroń, 2019). A potential turning point was when the Bank of England released an article titled; ‘Money Creation in the Modern Economy’ (McLeay, Radia, & Thomas, 2014). The article provided clarification of the process associated with the creation of money within the UK and confirmed Post Keynesian perspectives. Bindewald (2018) analysed public documents and guidance from the Financial Conduct Authority (FCA), Bank of England and UK Government with the aim to understand what money “is”. He outlines a framework that considers it a set of socially constructed discourses, legal frameworks and understandings that are present at a societal level. Bindewald (2018) argues this as an example of neo-institutionalism, in which money is a broader process or discourse maintained and reproduced by state institutions, although there existed an ambiguity of what money is, where it comes from and who had significant control over it. The perspective was most potently demonstrated by the fact the majority of the population of the UK, including its elected politicians, believe in the commodity model of money (Positive Money and The

Guardian, 2017). This perspective was made famous in the 2017 UK General Election with Prime Minister Theresa May exclaiming, “there is no magic money tree” in response to questions about healthcare funding. Through a framework of neo-institutionalism, Theresa May had exclaimed that the government had no control over something that Post Keynesian scholars had shown has the ultimate power to create (Wray, 2015; Kelton, 2020).

An historical account highlights how a socially constructed endogenous model of money operates. In the Free Banking Era in the United States between 1837 and 1864, the Federal Government legislated to allow individual states to dictate monetary policy, following which many implemented Free Banking Laws (Rockoff, 1974; 1975). States allowed banks to issue their own paper dollar notes as credit, redeemable at the bank. Due to this requirement of redeemability, banks held reserves of gold and government bonds, but issuance was largely unregulated and responded to the demand for credit (Kenneth, 1988). By 1860 there were over 6000 different types of dollars in circulation within the United States, and individuals would accept them based on trust of the issuing bank. The model resonates with Keynes (1930) who believed private parties could create money within contracts of debt. The creation of these monetary units is endogenous, as currency was created as credit was issued, with no control or deposits from a central bank, as the Federal Reserve was not created until 1917 (Hetzel, 2008). The exchange price of these dollars for goods and services were shown to decrease based on geographical distance from the issuing organisation. When trust in one organisation fell, the dollar that it issued lost value within the local market (Rockoff, 1974).

The period demonstrates a model of endogenous monetary creation which is emphasised by the fact that each of 6000 dollars appeared physically different. It

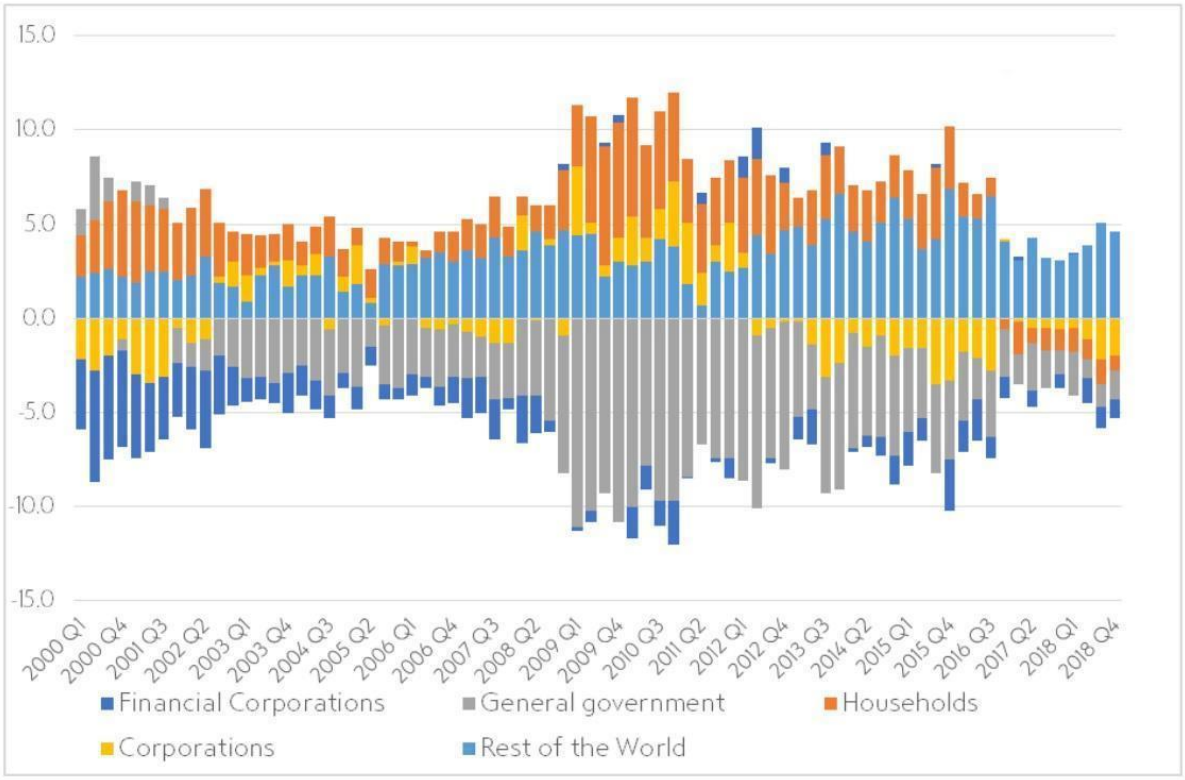
provides an illustration of the Monetary Circuit Theory (Realfonzo, 2006; Pilkington, 2009), as each dollar would be created as credit and used between local circuits of firms and other stakeholders. If a bank failed, the losses would be shared among the circuit of companies who had accepted the dollar as payment. It would have also provided a tangible example of a Zelizer Circuit (Evans, 2009), where individuals and firms would have had to 'earmark' each type of dollar, knowing some suppliers accepted different dollars. These could be considered as micro reproductions of the associated discourses of money, as levels of trust would have been based on local narratives. Haupert (1994) showed that banks invested in marketing to enhance their local reputations to maximise circulation.

The modern endogenous model of monetary creation could be considered a similar system. However, the issuing organisations have the advantage of being able to create money with a standardised appearance: state money and bank (book) money is indistinguishable. Positive Money (2021) details how 97% of all money in circulation in the UK is the commercial bank book-money, the rest physical cash issued by the state. The Free Banking Period resonates with Post Keynesian perspectives with economist Hyman Minsky stating; "everyone can create money; the problem is to get it accepted" (Minsky and Kaufman, 2008: 228). Minsky and Kaufman (2008) attested that anyone can create an IOU, the trouble is to get that IOU accepted as payment for goods and services. It resonates within anthropological understandings: Joshua accepted Henry's IOU as payment, knowing he could redeem it (Graebar, 2011). Everyone can issue an IOU, but individuals will only accept it if there is enough of a circuit of other individuals to then spend it.

The final area of consideration for heterodox economics is the monetary policies enacted since the financial crisis. After the 2008 crash, Western governments issued

new central bank reserves through Quantitative Easing (QE). Under QE, central banks created new money as credit to themselves and used it to buy financial assets from banks and corporations (Christensen et al, 2012; Joyce et al, 2012). The theory was that QE would provide greater reserves to the banks that would eventually lead to higher levels of credit being extended to small businesses and households (Breedon, Chadha and Waters, 2012). A growing subsection of Post Keynesian scholars are now considering the role QE has had on economies through a framework known as Modern Monetary Theory (MMT) (Nesiba, 2013; Wray, 2015; Kelton, 2020). MMT was constructed based on thirty years of analysis of the financial and monetary systems. Researchers highlight that every unit of currency in circulation has a corresponding unit of debt on the balance sheets of either governments, households, commercial banks or corporations, as shown in Figure 2.1 below. If the monetary system is analysed as a balance of payments between these sectors, it is apparent that the amount of credit created (or deficit), is equal to the amount of money in circulation (or surplus). MMT advocates state that their model of understanding modern money specifically relates to countries who operate their own ‘sovereign currency’ (Wray, 2015): where governments issue debt in their own currency, such as the UK, opposed to where governments issue debt in a ‘foreign’ currency, such as with the Eurozone.

Figure 2.1. UK sectoral balances as % of Gross Domestic Product. Source: New Economics Foundation (2019)



MMT advocates believe that as money is created as credit by governments, then it opens up a significant policy-making space (Kelton, 2020). Governments who have their own sovereign currency could create money as credit to meet the investment demands of society, with limitations being set by available labour and resources. Too much money in circulation would be chasing fewer resources and therefore cause inflation (Wray, 2015). However, taxes are used as a final step to destroy money to reduce the amount in circulation and address inflation. It has been claimed that responses to Covid-19 demonstrate that MMT is now becoming widely accepted as the model in which monetary systems operate (Bresser-Pereira, 2020; Schlotmann, 2020). MMT potentially demonstrates the extent to which a chartalist model of money can be applied, with some authors describing it as ‘neo-chartalism’ (Wray, 2000). It is

impossible for a sovereign government who issues their own currency to run out of money, just like it was impossible for King Henry I to run out of wood for tally sticks. There are limitations: available resources and trust that the government will repay its debts issued. However, MMT argues for future debts to be repaid with the same issuance of money, which suggests that fears about government deficits are unfounded (Kelton, 2020). In fact, if governments, households and corporations simultaneously repaid their debt and aimed to run a surplus as promoted within hegemonic orthodox economic discourses, there would be no money in circulation. Heterodox perspectives promote the concept that money is endogenously created as credit. Money operates as a social relationship between debtors and creditors within a circuit. This is represented as money through the crediting or debiting of bank accounts, the two sides of a wooden tally stick or the deficits and surpluses within an economy.

2.1.6. Summary of Theoretical Perspectives and Theoretical Framework

The above sections have highlighted contrasting perspectives in the theoretical basis for understanding money and credit within orthodox and heterodox economics. The below table provides a summary of the theoretical concepts and the next section will then outline how these differing concepts are considered within the literature on geographies of money and credit.

Table 2.1. Contrasting perspectives of the ontological nature of money and credit

Characteristics	***"Commodity Money"***	***"Credit Money"***
Prehistory	***Barter*** *Money introduced as a third commodity to facilitate trade.*	***Community Credit and Favours*** *Money developed from community credit and favour systems.*
Role of State	***No State Required*** *Free markets allocate the most effective commodity for the medium of exchange; i.e. gold, silver, tobacco, etc. States need to acquire commodity money through taxes to spend it.*	***State Created Currencies*** *States create money as IOUs and redeem them through the payment of taxes.*
Conceptual Basis	***Commodity*** *Money as a commodity in itself; e.g. gold bars, silver coins* *Metallism - value is embodied within the item* *Substance - money has intrinsic value*	***Credit*** *Money is the result of a credit-debtor social relationship* *Chartalism - the value of money is designated by a state or circuit* *Function - money is the result of debtor-creditor contracts*
Framework	***Neoclassical, Monetarism*** *Money is a veil for bartering of commodities and ideologically neutral medium of exchange*	***(Post) Keynesian*** *Money is a social relationship of creditors and debtors operating within a circuit or network.*
Method or Control of Creation	***Exogenous*** *Money supply is an exogenous variable; the external supply of precious metal from mines or the deposits of reserves made by central banks to commercial banks.* *'Deposits Create Loans'*	***Endogenous*** *Money is created in response to demand for credit internally to the economy. Central banks accommodate through providing required reserves.* *'Loans Create Deposits'*
Role of Monetary Authority	***Active*** *Controls and dictates the quantity of money supply within the economy*	***Passive or "Accommodating"*** *Responds to demand for money within the economy*
Sociology	***Without Social Values*** *Money changes values, depersonalises economic transactions and homogenises the*	***Social Relationship*** *Values change money, individuals choose who money is spent with and who it*

	economy.	*supports by extension of their own values.*
Societal Understandings	***Dominant Discourse*** *General agreement with statement of "there is no magic money tree"*	***Counterintuitive*** *Limited understanding of how modern money operates.*

2.2. Money, Space and Regional Development

2.2.1. Theoretical Perspectives

Economic geographers are interested in how money and credit can be understood through a spatial lens. Lee (1999: 207) believes that "money is the most geographical of economic phenomena" with its credibility grounded within the spaces where money is produced and its circulation regulated. Dodd (1994: 154) raised these perspectives within his book: *The Sociology of Money*, believing "actions involving the use of money have an implicit spatial and temporal orientation". There has been some recognition among economic geographers that the study of money within the discipline has been neglected (Corbridge, Thrift and Martin, 1994). In the four key strands of economic geography that consider money identified by Pollard (2003): uneven development, financing of firms and regional development, financial institutions and financial centres, there has been an implicit ontological acceptance of neoclassical orthodoxy (Martin, 1999). The discipline has lost some momentum in pursuing a theoretical challenge on the nature of money, as Christophers (2015: 190) notes, "the 1990s saw the publication of several landmark texts on monetary geographies, but as financialization's star has ascended, geographies of money - with scattered exceptions - have largely receded from view".

In the study of uneven development, there is a primary focus on the circulation of capital (Harvey, 2006) within space and its uneven distribution within financial systems on a regional and global scale (Leyshon, 1995). Harvey (2006) believed that money should be first disentangled from the circulation of capital, to fully understand its role within spatial capitalist arrangements. “[M]oney has to be understood independently of the circulation of capital. The transformation of money into capital can then be seen as new configurations of basic money uses” (2006: 240). Some understandings of money once it is disentangled from capital reflect sociological concepts (Dodd, 1994) outlined in the previous chapter, specifically that it is a social construct and social relationship. As Lee (1999: 210) highlights, money requires “trust and belief in its efficacy amongst the community using it as a means of exchange, as a unit of account or a store of value, as well as an acceptance of the social values carried with it into economic activity”.

Money is a practical tool that supports socioeconomic transactions among a community of belief within space, alongside a socially constructed process to evaluate economic activities and relationships. Its role as a social relationship also allows money to transmit information and social norms across space and time. The users of money “become tied to the practices and norms associated with [its] production and regulation, and so lose a further element of autonomy in the conduct of their own economic activity” (1999: 213). The users of money within these communities of belief have a shared understanding that the monetary units that they accept as payment can be reexchanged again in the future within a defined spatial scale (Harvey, 2006).

Economic geographers have an interest in the financing of firms and its relationship to regional economies (Clark and Wrigley, 1997; Mason and Harrison, 2001). Here the focus is largely on financial provision itself, with scholars highlighting differences in the

ability of firms to access finance based on their location within core or peripheral regions. In some cases, the approach has been influenced by neoclassical economics and General Equilibrium Theory, with Pollard (2003: 431) describing them as “theoretical legacies” within the discipline. Hadjimichalis and Hudson (2007) outlined how regional economies have been understood “based on a modernized version of old neoclassical theories and top down planning, and loyal to the dogma that free market competition will eventually balance inequalities. It has excessive faith in highly abstract mathematical models [that assume] poorer regions tend to have higher rates of growth than richer ones and that convergence is a matter of time” (2007: 265).

The dominance of monetarism and its associated theories of the neutrality of money in understanding regional economies affects the ability of economic geographers to provide theoretical challenges to neoclassical understandings of the use of money within regional spaces. Martin (1999: 4) highlighted that with its “assumptions of free and costless movement of capital and labour and perfect and ubiquitous information flows between regions, [neoclassical] theory essentially assumes away any regional role for money”. The study of money within regional spaces by economic geographers implicitly considers money as a national-level construct, that then flows between regions at a lower spatial scale.

A crucial aspect in the understanding of money by economic geographers is the role of the state in supporting the circulation of money within its defined territory (Agnew, 2005; 2010). When discussing the anthropological understandings of the development of money, Graebar (2011; 2012) highlighted the role early empires and city-states had in developing coinage and enforcing its valuation within the territories in which they controlled. Heterodox economic perspectives also describe the state as a central actor in the creation, circulation and destruction of money (Nesiba, 2013; Wray, 2015;

Kelton, 2020). Economic geographers have highlighted similar perspectives in the role the state has in maintaining monetary arrangements. Lee (1999: 211) considers the nation-state to be the “spatial and temporal frame in which money may be used, but also of a politically acceptable means of legitimising and validating that money”. It is considered by economic geographers to be a mechanism for the imposition of power by nation-states (Agnew, 2005; 2010). Ogborn (1998) highlights that every nation-state has its own officially recognised money: be it one it creates or one it sanctions, that allows them to maintain control over taxation and economic transactions within its territory.

The development of the Bretton Woods system, the postwar gold standard influenced by John Maynard Keynes (Hudson, 2010; Steil, 2013) is considered by economic geographers as a potent example of the state imposing power through the monetary system. The conditions provided by nation-state political and institutional structures on money were coupled with a set of Keynesian welfare state initiatives. Leyshon and Tickell (1994) outline how the Bretton Woods System was a central pillar within “the Keynesian welfare state, under which collective bargaining and pricing were institutionalised; policy instruments were deployed to maintain and manage aggregate demand; and the norms of mass consumption were generalised” (1994: 1876). These wider policies are associated with the users accepting the social norms associated with the money in circulation, as highlighted by Lee (1999). Harvey (2006) argued that the power of the state is emphasised further when money is not backed by a commodity, such as gold, as was seen under the Bretton Woods System (Hudson, 2010; Steil, 2013). The state is then required to guarantee the value of the money in circulation through its political, policy and legal structures. It further supported the perspective that money is controlled through a process of neo-institutionalism

(Bindewald, 2018), as considered in heterodox economic perspectives in the previous chapter. This perspective chimes with sociologists who consider the state instrumental in supporting the scope of exchangeability of money which is conditioned through political and institutional structures (Dodd, 1994).

The notion that money has a wider set of social norms attached resonates with heterodox economic perspectives on monetary discourses (Bindewald, 2018). Leyshon and Tickell (1994) believed that the Bretton Woods System represented an ambitious attempt to tame capitalism through monetary policy and wider social structures. The economic order developed alongside the Bretton Woods System was "profoundly influenced by a shift in the prevailing intellectual climate, associated with the rise of a new practical economic discourse which revolved around the ideas of the 'New Deal' and of Keynesian economic theory" (1994: 1862). The strength of hegemonic monetary discourses can be observed within the economic geography literature on money. The eventual rise of neoclassical economic dominance and monetarism (Friedman, 1958; Lucas, 1972; 1980) has influenced prevailing perspectives on the nature of money and credit. The previous chapters in this thesis highlight an implicit dichotomy within monetary ontological understandings which were summarised as holding commodity versus credit characteristics (see pages 55-56). The hegemonic monetary discourses provided by monetarism, of which money is an commodity-based substance that evolved from barter, appears to be the ontological understanding that influences the economic geography literature (Hall, 2013). Even Harvey (2006: 245) introduces money as permitting the separation of sales and purchases within space and time, meaning the "constraints of barter can be overcome", a discourse challenged by heterodox perspectives (Graebar, 2010).

In a debate in Environment and Planning D: Space and Society, the loose dichotomy in the fundamental understandings of money were evident. Christophers (2011b) believed that studying the commodity of money would allow an understanding of its impact on regional economies. He reminded us that “in a simple barter economy the 'purchase' of one commodity occurs, by definition, in the same place and moment as the `sale' of another” (2011b: 1069), drawing on the perspectives of Harvey (2006). In a response to the paper, Gilbert (2011: 1087) raises, “there is a growing number of theorists who examine money in light of institutional agents such as states, banks and the legal system, all crucial determinants to who produces money, what is deemed to be money by which authorities”. Gilbert (2011) outlines out that to many theorists, money is a social relationship between debtors and creditors that operates within circuits. Christopher’s (2011c) response further reproduces neoclassical economic discourses, “although we often overlook the fact, money is always produced, just as other commodities are” (2011c: 1090). Martin (1999) stresses that money is not just a commodity, but is also a social relationship, accepting an commodity-based understanding of money whilst arguing that it should be considered within a broader framework of social relationships and circuits central to economic geographical analysis of finance.

Harvey (2006) initially discusses money as a commodity: “the use value of the money commodity is that it facilitates the circulation of commodities” (2006: 242). He extends his theories from the work of Marx (1872), which has been highlighted in the previous section to have a greater association with a commodity ontological understanding of money. Harvey (2006) does go further and discusses the development of state-issued credit money, but still focuses on the notion that these units of money are backed by a higher quality of money held by a central bank. The hierarchical political and legal

structures that support credit money in circulation guarantee its value, through backing from the institution higher in the order. The central bank on the nation-state scale and on to the international scale, at which Harvey (2006) believes the nature of the backing of credit money is then left unresolved. “But what is it that ensures the quality of money at the apex of this hierarchy? Gold? ‘Paper gold?’ ‘Black gold’ (petroleum)? Dollars?” (2006: 250). In times of crisis Harvey (2006) believes, those holding commodities will always seek to exchange this for commodity money, considering it to be more secure.

The implicit ontological nature of money with economic geography suggests the discipline has not fully considered the implications of the development of heterodox economic understandings of money, in particular Post Keynesian perspectives (Nesiba, 2013; Wray, 2015; Kelton, 2020). A further confirmation of this is on the concept of taxation. Heterodox economists have argued that taxation by the state is not used for public spending or redistribution, but is in fact the final stage of monetary circulation where it is destroyed (Wray, 2012), or burnt in the case of the Virgina Pound (Grubb, 2015; 2017). A recent invitation in Urban Geography to explore the fiscal geographies of taxation, considers tax to be the “state’s primary mechanism for collecting and redistributing wealth” (Tapp and Kay, 2019: 573). The discipline does not blindly adhere to the neoclassical notions of the neutrality of money. However, it is influenced by hegemonic discourses of commodity money and by extension, monetarism (Friedman, 1958; Lucas, 1972; 1980), which seem to be considered as basic ontological truths for geographical analysis to be then constructed upon.

Economic geographers provide further theoretical insights when discussing the global scale of the monetary hierarchies. The nation-state has a significant role in creating, maintaining and circulating money (Ogborn 1998; Agnew, 2010), and the relationship between these nation-states has been analysed by the discipline. The Bretton Woods

System was considered an agreement for nation-states to form a mechanism to prioritise the stability of the international economic order, which in some cases was detrimental to their own national imperatives (Leyshon and Tickell, 1994). The central role of the United States in guaranteeing the convertibility of US Dollars to gold required it to consider international economic stability and to be “willing to subordinate its immediate national economic and political interest to wider system goals” (Corbridge and Thrift, 1994: 7).

The Bretton Woods Systems supported by the United States reflects a concept that trade between nation-states requires a political and economic hegemony that controls and supports the circulation of its money on an international scale. Corbridge and Thrift (1994) recognised the role Great Britain played in governing global trade through the use of Pound Sterling in the 19th and early 20th centuries. It too had to forgo national political imperatives to ensure stability on the international scale, including national deflation, mass unemployment and significant impacts on its colonial territories. However, Great Britain alongside the present day United States, are afforded significant advantages over other nation-states, including “leverage over international trade and capital movements” (Corbridge and Thrift, 1994: 6) that other nation-states operating under hegemony had to accept to their own national detriment. Leyshon (1995: 533) highlighted that “one powerful state will tend to impose order on the international financial system and, by doing so, provides the platform on which more general processes of capital accumulation can proceed”.

The undermining of global monetary orders, such as the Bretton Woods System in the 1970s, is reflective of another significant contribution of economic geographers in understanding money and the role of the nation-state. To support the circulation of money within their territories, nation-states “set key parameters of the domestic

monetary system, for example interest rates, exchange rates, credit controls and restrictions on capital movements" (Martin, 1999: 8). This enables them to provide a financial space for industries and firms to operate and allows them to compete against other nation-states for economic activity. It is the focus of individual nation-state priorities that has contributed to the undermining of the global monetary system, as nation-states worked to further their own domestic priorities that were contradictory to the wider system. Since the fall of the Bretton Woods System, economic geographers have observed that nation-states have furthered their own domestic priorities at the expense of the wider system.

French et al (2009) highlight the nation-state regulatory race to the bottom around money and finance, to attract lucrative financial services businesses. This has skewed the circulation of capital as "money has a habit of seeking out geographical discontinuities and gaps in regulatory space, to move assets where they are less constrained" (Martin, 1999: 10). This competition between nation-states through the setting of key parameters, rules and regulations of money has given rise to the structure of the global financial and monetary systems that can be observed today. There has been development of financial centres that have seen professional services firms clustered in spaces that have offered favourable rules and regulations, such as London and New York (Cook et al, 2007; Faulconbridge et al, 2007). Alongside these there have been the development of a network of smaller territories that offer favourable tax and transparency regulations, that have become known as offshore financial centres. Offshore centres of finance have received attention from economic geographers who have highlighted the socially constructed nature of their development (Hudson, 1998). Although they are perceived as being a natural

response to high levels of regulation within developed economies, they are allowed, encouraged and supported by nation-states (Hall, 2017).

The development of competitive parameters, rules and regulations among nation-states that influence the circulation of money reflects another observation of economic geographers: monetary circuits. Martin (1999: 6) outlines, “the various circuits of finance capital, such as banking, mortgage finance, insurance, pension funds, and stocks and shares, are constantly moving immense sums of money, credit and debt between the different regions and localities of a country, as well as between countries”. The perspective of monetary circuits reflects heterodox economic and sociological perspectives of monetary circuits (Dodd, 1994; Parguez and Seccareccia, 2000). Economic geographers consider these circuits to be the wires of the global economy, transmitting money as currents.

Hall (2013) outlines how the concept of circuits within multiscalar space can be used to analyse how the global financial system interacts with the productive ‘real’ economy at a national or regional level. These circuits do not just transmit money between financial centres within nation-states, but also transmit narratives and social norms (Leyshon and Tickell, 1994; Lee, 1999). Hall (2013) highlights how these narratives affect the way firms within the productive real economy operate, where the maximisation of short term shareholder value becomes a hegemonic discourse, in response to the demands of the financial system. Economic geographers have perceived this process as a growing financialisation where the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies” (Epstein, 2005: 3).

Leyshon (1997) outlines the different notions of monetary circuits and the properties that have been identified by other researchers. In his analysis of Dodd (1994), he discusses how monetary circuits rely on standardised accounting practises, harmonised regulations, specific spatial characteristics grounded within nation-states, knowledge that money can be reexchanged at a later date within the circuit and social relationships based on trust between participants. Considering money through the lens of a circuit allows an understanding of how they shape spaces into financial places (Leyshon, 1995). Nation-states setting favourable parameters, rules and regulations allow nodes within the circuitry to develop, that in turn reproduce the social norms and discourses of the money in circulation.

The financial centres of London and New York are central nodes to support the circulation of money and their associated discourses. Thrift (1994) asked whether, as money becomes more digitised and the economy more globalised, would these financial centres “simply melt away into a generalized space of flows, leaving money obligations to speed their way along the cables and through the aether, to and from many different terminals located in many different places?” (1994: 327). His arguments reflected that of Dodd (1994), that these financial centres serve a wider purpose, supporting social norms and building social relationships between participants within global monetary circuits, so that it is difficult to disentangle money from spaces.

Considering money through the concept of circuits also allows the analysis of the provision of financial services. Economic geographers have analysed financial services in terms of their dominant contribution to the gross domestic product of nation-states and their being a large source of employment of labour (Corbridge, Thrift and Martin, 1994). Neoclassical economics considers the financial system as unproblematic to the real productive economy and that its provision of services does

not vary across space within a nation-state (Hall, 2012). Martin (1999: 6) disputes this perspective, believing “financial systems are inherently spatial” which links to a significant body of geographical research that analyses the uneven distribution of financial services across space.

While the analysis of financial centres within monetary circuits demonstrates a concentration of financial services within specific financial places, the access of households and firms to the monetary circuits is also unevenly distributed across space. A specific demonstration of the unequal access to financial services analysed by economic geographers has been the changes in domestic banking services within the developed world. Hall (2012) highlights research on the withdrawal of services through the closure of bank and building society branches from the 1990s. This withdrawal can be mapped across space and demonstrates a contradiction to neoclassical perspectives of access to financial services being indifferent to specific spaces. Corbridge and Thrift (1994) specifically highlight the case of banking withdrawal in Los Angeles, highlighting further socioeconomic and racial dimensions to the closure of bank branches that can be mapped within space.

2.2.2. Implications of Geographies of Money and Credit for Regional Development

Economic geographers have studied money and credit through their contributions to regional development, in some cases specifically influenced by Marxist perspectives of political economy and identifying a process of uneven development (Harvey, 2006). To them, the unevenness of economic activity within space is not a side effect of the process of economic growth, but structurally fundamental to capitalism (Hudson, 2007;

Harvey, 2010). They observed a process of ‘seesawing’ of capital between regions and what they termed ‘spatial fix’ of capitalist growth and reproduction across space, whereby capitalism spatially expands to temporarily address its internal contradictions and crises (Harvey, 1981; 1985; Smith, 1982). Uneven geographical development is considered a contributing factor to the creation and maintenance of economic inequalities, alongside social and spatial injustices (Fainstein, 2009; Soja, 2013). Although the premise of globalisation was the convergence of economies making space redundant, regions have arguably become increasingly important to the development of economies.

Neoclassical and monetarist understandings of money neutrality largely promote the notion that space and regional development are irrelevant in the allocation of credit (Pollard, 2003). Banks are considered intermediaries between savers and borrowers, “this mainstream theory, which to many, despite its disparity with observed fact, is identified with regional economics, investment finance is equated with savings” (Chick and Dow, 1988: 3). If regional and interregional credit markets are perceived to be working effectively, then savers’ money will be allocated to the most economically efficient requirement. “Banks should allocate investment and savings at a national level and as long as it works effectively, General Equilibrium Theory would allocate finance efficiently” (Rodríguez-Fuentes, 1998).

Dow and Rodriguez-Fuentes (1997) conducted a systematic review of the regional development and finance literature to understand the theoretical basis for the study of money within regional development studies. They highlighted that the majority of the literature treats regional development and finance through a framework of monetarism, in which money is exogenously created at national level and the allocation to regions depends largely on the principles of General Equilibrium Theory. A small minority of

regional development researchers used the insights of Post Keynesian monetary theories that considers money to be endogenously-created by commercial banks within regions. This crucial theoretical divergence in the study of regional development, affects the understanding of how money and credit influence regional development. If researchers applied a Post Keynesian endogenous money approach "both the theoretical and empirical focus of regional analysts would be different from that in most of the literature reviewed" (1997: 916).

There is a limited literature that applies Post Keynesian endogenous monetary theories within the study of regional development (Chick and Dow, 1988; Chick, 1993; Fuentes, 2006). Furthermore, there is limited empirical studies on studying the implications of endogenous monetary theories on regional development. This empirical analysis conducted is predominantly on Brazilian regional development (Romero and Jayme, 2012; Crocco, et al, 2014). Post Keynesian endogenous monetary theory challenges the neoclassical perspective that money is neutral within regional development and provides an alternative perspective of how credit is created and provided to firms and households on a regional level (Chick and Dow, 1988).

Heterodox economic theories of endogenous money indicate that banks at a regional level impact the amount of money available locally, as its creation is based on the demand for credit by firms and households (Dow and Rodriguez-Fuentes, 1997). They challenge the perspective of neoclassical theories and monetarism, which the majority of regional development analysis is constructed within. "The regional finance literature has tended to rely on a bank multiplier approach, such that the capacity of regional banks to extend credit is determined by the reserve base. This base in turn is determined by net financial flows with other regions" (Dow, 1992: 620). The application of Post Keynesian monetary theories fundamentally changes the theoretical basis to

consider regional development. “The matter is no longer how a fixed amount of credit is divided between regions, but how credit is created regionally” (Rodríguez-Fuentes, 1998: 68).

The application of Post Keynesian monetary theories to regional development provides an alternative perspective for analysis. Scholars highlight that the stage of development of the banking system is a crucial factor in understanding if credit can be created above the amount of reserves available at regional branches (Dow, 1992; Fuentes, 2006). Within an advanced stage of the banking system, the amount of credit available to firms and households is predominantly associated with the demand for finance, which is influenced by institutional and behavioural factors. Commercial banks have less appetite for loans on their balance sheets if the regional economic context and outlook is poor, which becomes an interdependent process in which credit is not created due to poor local economic factors, which in turn contributes to those poor economic factors (Dow and Rodriguez-Fuentes, 1997). Post Keynesian scholars consider this to be defensive financial behaviour by commercial banks within regional economies, in which “weak demand for credit is as much part of the problem as reluctance to supply” (Dow, 1992: 630).

Economic geographers have developed a significant base of evidence that demonstrates a lack of credit availability for small businesses (Henry et al, 2014; 2017). Leyshon (2009) highlighted the multidimensional geographical nature of financial exclusion which includes negative perceptions of the ability to access finance (Lee and Drever, 2014), local variances and distance from bank branches (Zhao and Jones-Evans, 2017; Degryse et al, 2018), demographic barriers (Smallbone et al, 2003) and unaffordability of finance (Appleyard, 2011; 2013). They have highlighted an availability gap of between £10,000-£150,000, which the average small business

wants to access but commercial banks are unwilling to lend. Leyshon (2009) highlights a trend of ‘self-exclusion’ where business-owners give up looking for finance due to negative experiences of the financial system. The notion has been termed ‘discouraged borrowers’ where entrepreneurs do not consider credit as a viable option for their business operations (Kon and Storey, 2003; Han et al, 2009; Mac an Bhaird et al, 2016). Appleyard (2013) found evidence of discouraged borrowers and the wider trends highlighted by Leyshon (2009) in a study of small businesses in the city-region of Birmingham.

Economic geographers have further demonstrated that the availability of finance can be considered through a spatial lens. Ughetto et al (2019) highlight specifically the impacts of limited credit availability on the financing of small businesses within peripheral regions. They highlight a poorly developed banking system, which would reflect the perspectives of Post Keynesian researchers in understanding the level of credit being created within regional spaces. Cowling et al (2020) detailed evidence that the impacts of the Covid-19 pandemic has disproportionately affected small businesses within peripheral regions and highlighted the notion of an interest of ‘regional resilience’ to describe how regions can protect themselves against these sorts of wider economic shocks. Researchers have further highlighted the broader puzzle of why commercial banks do not lend to small businesses. Cowling et al (2016) highlight the issues associated with credit rationing where banks are taking strategic decisions to allocate loan funds to industries rather than firms in which they expect the greater future investment returns.

Research over the past two decades has also focused on the role that global financial markets have in uneven regional development and the access to finance by households and firms (French et al, 2009; Pike and Pollard, 2010). Researchers focus

on the role of international financial centres within super-star city-regions such as London and the impact these have on access to finance within peripheral regions (Clark and Wójcik, 2007; Lee et al, 2009). Cultural geographers have focused on the non-human technologies used to reproduce discourses of the 'economic' and 'finance' to justify the dominance of the financial system within regional economies (Hudson, 1998). In particular they have focused on the notions of naturalised free markets, onshore and offshore financial circuits and the concept that economics is the only discipline able to study the 'economic' through a process of "economization" (Callon, 1998; Berndt and Boeckler, 2009; Çalışkan and Callon, 2009). A particularly notable piece of work centres on the performativity of individuals within financial centres to act on the basis that the financial processes are natural, in line with concepts of General Equilibrium Theory (MacKenzie and Millo, 2003).

Mann (2010) considered the geographical implications of the monetary policies implemented by central banks and their impact on regional development, albeit applying an orthodox perspective opposed to considering heterodox challenges. He highlighted that even though a main argument within neoclassical economics is the desirability of reduction of state intervention to maximise the supposed benefits of general equilibrium within markets, central banks are a powerful state actor that reproduce the discourses associated with General Equilibrium Theory. Drawing on Mackenzie (2006) and Cameron (2008) he states that monetary policy "has always been the means through which the norms of the state are actively imagined, created, imposed and reproduced" (2010: 614). He believed that uneven development within regional spaces is ignored and monetary policy is structured within the belief that over time regional economies will converge. Mann (2010) states that central banks are captured by financial elites whose devotion to orthodox policies such as monetarism,

aims to support the spatial fix highlighted by Harvey (1981; 1985) by universalising economic, political and social relations (Ingham, 2004).

In recent decades, there has been an effort to consider alternatives to the dominant perspectives of neoclassical economics and apply these insights to understanding regional development. Gibson-Graham (1996) provided a feminist deconstruction of neoclassical economic discourse, and criticised the relationship to globalisation: "[f]ueled by the fall of socialism, in 1989, references are rampant to the inevitability of capitalist penetration and the naturalness of capitalist domination" (1996: 240). Gibson-Graham (2006; 2008) later considered diverse economics that "expands our economic vocabulary, widening the identity of the economy to include all of those practises excluded or marginalized by a strong theory of capitalism" (2006: 60). They recognise a series of non-market, traditional market and alternative market transactions such as household flows, traditional interactions, free and regulated market exchanges, cooperatives and local currencies (2006: 61). The perspective was famously summarised as the iceberg (Gibson-Graham, 2006: 70):, above the water line the neoclassical economy is visible, with limited notions of capitalist markets and wage-labour, while below the water line is a wider perspective of human economic relations.

One key challenge has been alternative mechanisms to measure the success of regional economies within the framework of GDP growth. Inspired by the development of the term 'sustainable development' by the Brundtland Commission (1987), there have been a range of alternative mechanisms to consider regional development (Schepelmann et al, 2009). Orthodox economic policies have had significant societal and environmental consequences at local, regional, national and international scales. The uneven regional development identified by Harvey (1981) has resulted in social

issues such as health inequalities (Ellis and Fry, 2010) and access inequalities in education and opportunity within the UK, leading to an observation of a geography of discontent (McCann, 2020). Local and regional environmental concerns range from loss of biodiversity, to poor air quality and pollution, which are aggravated by global concerns such as climate change (Grimmond, 2007). There are growing calls for the consideration of sustainability issues within regional development that considers three interconnected themes: economic, social and environmental (Elkington, 1997; Alhaddi, 2015).

Alhaddi, (2015: 9) believed that “the literature showed an inconsistent usage of sustainability where several studies used the term but were in fact referring to one or two or the three known [themes] (society, environment and economy)”. In a literature review, Purvis et al (2019) stated, “despite the dearth of literature probing ‘sustainability’ and ‘sustainable development’ conceptually, one conceptualisation, that of three themes: environmental, economic and social, has gained widespread traction” (2019: 685). Regional-level economies have been considered a scale in which sustainability objectives can be pursued to reduce the impacts of socioeconomic processes on the natural environment. Hudson (2007: 834) outlines that “there is an increasingly strong imperative to move towards more self-contained and sustainable models of regional development, maximising intra-regional flows and connections (in part to help close material loops) in terms of environmentally less damaging processes of production, exchange and consumption”.

Interventions that support the objectives of the economic theme have included responses to inequalities in access to finance. Henry and Craig (2013: 5) highlighted a perspective associated with regional economic development stating, “access to finance, credit and financial services is a key requisite for full participation in today’s

economy and society". The failure of commercial banks to provide credit within specific localities has resulted in a 'jigsaw' of alternative providers aiming to provide credit to households and small businesses, including credit unions, Community Development Finance Institutions (CDFIs) and peer-to-peer lenders (Henry et al, 2014). Credit Unions have developed to meet the needs of individuals who struggle to access financial services (Ward and McKillop, 2005; Lee and Brierley, 2017), whereas Community Development Financial Institutions aim to meet the requirements of small businesses (Rubin, 2001; Appleyard, 2011; 2013).

Post Keynesian argue that commercial banks create money as credit and extend this to households and firms, simply described as 'loans create deposits' (Rogers, 1989). CDFIs are structured as revolving funds from local public sector sources, or ethically minded depositors (Buttle, 2007) which are lent onward (Pinsky, 2001; Aslan et al, 2018). This can be described as a 'deposits create loans' perspective. There are growing calls for the development of regional banks, either publicly or cooperatively-owned, structured like commercial banks (RSA, 2018). These would be structured to provide credit to communities that have experienced financial exclusion over past decades, modelled on German regional banks, often credited for supporting a vibrant small business economy (Hakenes et al, 2009).

Further economic alternatives are being explored in relation to public authorities. Experiments within Universal Basic Income have been conducted at city-region level, to consider the impacts of providing residents a set basic income (Howard, 2018; Hoynes and Rothstein, 2019). There are arguments for a greater level of economic intervention by public authorities to reverse decades of their reduced role under the application of neoclassical economics to regional development. The 'Preston Model' was a term given to the increased role of the local authority in the city of Preston, UK.

It changed public procurement from the multinational corporations that are responsible for the majority of public outsourcing, and focused it towards local small businesses and cooperatives. There have been a range of benefits observed as a result, from reduced closures of retail shops to higher wages for individuals living in the city (O'Neill, 2016; Manley, 2017; The Guardian, 2018). The notion that local authorities can affect their local economies in such a way has supported calls for a "Foundational Economy". Local authorities would focus on the provision of basic goods and services in a locality, including health, care, education, housing, utilities and food supply (Bowman et al, 2014).

The social theme of sustainability has also considered the development of social infrastructure within local spaces and communities (Chan and Lee, 2008; Cuthill, 2010). Cuthill (2010) considers policy interventions to develop tangible or 'hard' social and community infrastructure. These need to be considered alongside less tangible or 'soft' infrastructure that may include capacity building within communities to develop an active and informed civil society that can contribute to strong local governance and the development of social capital (Holmes, 2009; Patzelt and Shepherd, 2011; Prieger et al, 2016). Multistakeholder partnerships have drawn together individuals and groups from the public, private and third sectors in the objective of regional development (von Malmborg, 2003; Bendell et al, 2010). Bendell et al (2010: 351) highlights that "by bringing together their respective competencies and resources for the greater good, people in governments, business, civil societies and multilateral agencies have sought innovative ways to respond to many contemporary sustainable development challenges".

The relationship between the social theme of sustainability and governance has also been extended to ownership structures of organisations. It resonates with the

economic theme of sustainability with greater emphasis on using ownership models such as cooperatives and social enterprises, to bring together economic, social and environmental objectives of organisations (Aref and Gill, 2009; Kim and Lim, 2017). Gertler (2004: 37) states, “given that cooperatives are organizations with more than one bottom line, co-op managers and boards routinely integrate complex combinations of concerns to achieve closely conjoined economic, social and environmental objectives”.

The notion that the social theme of sustainability has a basis within physical local and regional space is also reflected in the regional and urban planning literature (Chan & Lee, 2008). Chan & Lee (2008) believe that considering sustainability issues in urban design allows a range of objectives to be met, including the provision of social infrastructure, employment opportunities, encouraging equitable communities and ensuring the ability to fulfil psychological needs. There is a belief that townscape design can be used to encourage “uniqueness of places and a sense of belonging among the residents” which should also aim to preserve local characteristics for future generations (2008: 246-247). In studies of communities within the UK, Griffiths et al (2008: 1158) believe that “the historical continuity between the village, the small town and the suburban high street in Britain should be considered as a key element in any definition of neighbourhood sustainability”. The authors believe that a wider set of economic, social and environmental objectives can be facilitated through successful high streets that allow residents to utilise community facilities and participate in economic activities.

Dempsey et al (2011) summarise that there appears to be general agreement within the urban sustainability literature that communities require equitable access to a range of services and facilities that may be as diverse as health centres, cafes and

restaurants, supermarkets, financial services and a pub (2011: 293). Ensuring these are in close proximity to residential neighbourhoods encourages accessibility through low carbon transport options such as cycling and walking, further supporting the notion that small businesses are an important piece in regional development. There has been interest from researchers (Ntounis and Kavaratzis, 2017; Parker et al, 2017; and governmental interventions in the UK with the objective of supporting high street spaces, such as the Future High Streets Fund (2019), although this was not framed within a framework of sustainability or regional development. The notion of implementing the social theme of sustainability within regional development is seen within local spatial scales. There have been bottom up initiatives, such as the Transition Towns Network (2021), that aims to develop local towns within frameworks of sustainability.

There is a growing literature addressing how environmental sustainability objectives in the context of regional development can be pursued. There is a recognition that "holistic, progressive and sustainable local and regional development is not a 'one-size-fits-all' template or universal model" (Pike et al, 2007: 1265). These have included the development of local food networks, where healthier food is produced and consumed within local and regional economies (Renting et al, 2003; Maye et al, 2007; Jarosz, 2008; Hand and Martinez, 2010). There is an interest in shorter production supply chains and their links to circular economic processes (Gallaud and Laperche, 2016; Kiss et al, 2019). Circular economy perspectives have also been applied to material flows and the need to increase recycling and reuse (Hobson and Lynch, 2016). Changes to the built environment include the implementation of holistic perspectives of resilience (Hassler and Kohler, 2014), energy efficiency interventions

(Viholainen et al, 2016; Becker and Naumann, 2017; Figus et al, 2019) and more ecological building practices.

Regional development objectives can be pursued through a range of innovative multistakeholder governance and public-private partnerships (Biermann et al, 2007; Gray and Purdy, 2018) alongside the participation of social enterprises (Kim and Lim, 2017). The aim to regionalise socioeconomic processes to reduce the impacts on the natural environment led researchers and practitioners to consider localised and regionalised notions of exchange and transactions. Complementary local currencies have been considered within this holistic framework as a way to apply the three themes of sustainability within a local and regional development context (Pike et al, 2007). They often aim to draw together the economic, social and environmental themes and have been considered a response to the critical perspectives outlined within the geographies of money and credit literature. The next chapter will outline the theoretical basis for local and regional currencies, alongside exploring specific models.

3. COMPLEMENTARY LOCAL CURRENCIES AND REGIONAL DEVELOPMENT

“Local money is money which is differentiated in some way, but in particular by relative geographical location, from conventional official currencies” (Lee, 199: 210). The aim of this chapter is to explore complementary local currencies through the theoretical lenses of money, credit and space outlined above. It will first explore individual models and go on to consider their role within regional development through a lens of geographies of money and credit. It will finish with a limitations section that will draw the two literature chapters together and provide the theoretical direction for this research.

3.1. Local Exchange Trading Systems (LETS)

An initial approach were Local Exchange Trading Systems (LETS), originally developed in Canada in 1983 (Davis and Davis, 1987). The model creates currency through the issuance of mutually recognised units of account as credit, which are equal to the dominant form of money. LETS allow individuals to use credit within these systems to purchase goods and services from other local people, like using a bank account overdraft. The model is an endogenous form of monetary creation and resonates with the concept that money is credit exchanged within a circuit. The recognition of the units within LETS as a form of money by users has a greater relevance to chartalism (Knapp, 1924), as users agree on the value of the currency accepted in payments. Lang (1994) outlines the operational aspects of LETS and early studies of their impacts included Dobson (1993), Greco (1994) and Seyfang (1994).

There has been significant geographical research of LETS within a range of UK spatial contexts. North (1996; 1998; 1999), Thome (1996), Williams (1996a; 1996b) and O'Doherty et al (1999) compared urban schemes such as Manchester with rural initiatives such as in Dorset. They found that schemes were exclusive to specific identities: those on the fringes of society or already engaged within radicalism. The researchers hoped that the LETS could be considered within a broader framework to challenge dominant systems. However, LETS tended to be too small to make an effective impact and struggled to scale outside of committed circuits of converts. O'Doherty (1999: 1639) stated that LETS as a "social movement rooted in the alternative milieux of greens, feminists, new agers and so on, comprising those committed to experimenting with new ideas and identities". North (1999) recognised the limitations of these sorts of demographics in his study of a large Manchester LETS. The involvement of anarchists who used LETS for the revolutionary ends were acting "as if the revolution was over and we had won" (North, 1999; 84). The radical users considered the LETS as an end in itself, whereas the wider membership was frustrated by issues such as the low trading volumes within the circuits.

Proponents hoped that LETS could be used as a tool for mainstream local economic development. Williams (1996b) aimed to understand how LETS could support unemployed individuals to access work and credit, but found the state benefits system a hindrance. Seyfang (2001b) outlined the limitations in using LETS for local economic development and found little evidence they were supporting unemployed or disadvantaged individuals. Aldridge et at (2001) believed that the schemes favoured individuals, usually middle-class, who already had part time or full time employment. These findings were confirmed by Williams et al (2001) and Aldridge and Patterson (2002) who identified the limited geographical scope and minor economic impact of

the LETS. They established that schemes were usually only made up of 20-25% active members, who already had access to resources. Aldridge and Patterson (2002) were critical about the overoptimism within the literature about the potential for LETS to support economic development. They believed: “there are significant structural constraints on the effective use of LETS, and these need to be seriously addressed before too much faith is put in them as tools for tackling poverty” (2002: 379). There were a series of references to LETS in literature as examples of alternative economic structures (North 2006; 2007; 2014), but limited identification of self-sustaining or successful initiatives.

Cooper (2013) provided an overview of the criticism of LETS and identified a range of issues including lack of formal operational procedures, inability of users to grasp different perspectives of money and unrealistic expectations about scalability. LETS facilitates the creation of credit that could potentially be used to broaden access to finance for small businesses. Although there had been some evidence that small businesses, predominantly sole traders, had participated within LETS (Bowring, 1998), the majority of schemes discussed within the literature are peer-to-peer initiatives.

3.2. Timebanks

Grounded within egalitarian perspectives of equal value of participants' contributions (Cahn, 2000); timebanks that traded time credits developed. Denominated in units of one hour, users build up time credits via contributing to the scheme and use them to make purchases. They rely on the central management of the initiative, usually by either an externally funded post or volunteer labour. The time credits are centrally issued, and although are termed ‘credits’, are not credit, indicating a greater resonance

with an exogenous model of issuance. The units of time could also be considered as a commodity to facilitate exchange, opposed to being credit. The units within a time bank could be perceived as being backed by a commodity: labour-time. Karl Marx considered any good or service created by human labour as a commodity, and therefore a unit within a timebank is potentially no different. Gregory (2012: 228) does challenge this perspective, believing, “although a view that time is a commodity persists, time is the basis of exchange.”

Timebanks have been studied in the context of poverty, citizenship and social inclusion (Seyfang, 2002; 2003; 2004), as participants are predominantly lower skilled or unemployed. Timebanks have often been developed within lower income neighbourhoods within a framework of community development (Seyfang and Smith, 2002). There has been an interest in using timebanks to support welfare provision (Seyfang, 2006), youth justice (Drakeford and Gregory, 2010) and improvement of health (Gregory, 2012). The schemes received strong support by central government policy in the United Kingdom in the 2000s, that allowed the forming of a network; Timebanking UK, that included 250 timebanks, 5797 organisations and 42932 participants (TimeBanking UK, 2021).

Timebanks have been successful at extending local currencies outside of committed demographics. There has been a connection between the development of timebanks and the delivery of public services, with the majority of timebanks reliant on public sector funding. It could be considered as greater acceptance by elites of local currencies, through delivering public services within a process of co-production with communities (Cahn, 2000; Gregory, 2012). There is suspicion that this relationship has been a cover for the withdrawal of the public sector and the welfare state (Dittmer, 2013). They were initially considered within the Big Society initiative of the

Conservative-led coalition government, which was argued as supporting austerity (Naughton-Doe, 2015). Although the Big Society is considered within the framework of the reduction of the state, there were timebanks in Japan supporting social and health programmes (Miller, 2008). UK schemes required much greater levels of support and did not develop significantly in the period of austerity due to withdrawal of public funds (Gregory, 2012).

Timebanks in the UK underwent a process of legitimisation through public support, but reliance on central funding was contradictory to their financial viability. To receive public funding they are open to be directed to support policy objectives of the dominant regime that could have an adverse impact on their communities (Dittmer, 2013). On a technical level, there are criticisms about their ability to support alternative market arrangements and scale. Timebanks are considered as inadequate for trading goods, something that LETS was effective at, with North (2003: 270) observing; “how many hours for a pound of organic carrots?”. There is also very little evidence that small businesses could benefit from timebanks, outside of Corporate Social Responsibility (CSR) initiatives (Janney & Gove, 2011; Cho et al, 2019). Timebanks are largely confined to local communities apart from Tempo (2021), which has a national reach. It has an online marketplace to allow individuals to find locations that accept time credits (Tempo, 2021). There is no evidence that businesses can access credit through timebanks.

3.3. Convertible Local Currencies

Convertible Local Currencies (CLCs) initially developed from Transition Town (2021) movements, providing the nickname ‘Transition Currencies’ (Ryan-Collins, 2011).

These models had a greater focus on businesses, aiming to address a shortfall of LETS and timebanks. Ryan-Collins (2011) detailed how the model developed from the Transition movements with the belief that small businesses were central to local sustainability and development. CLCs are “backed” by pound sterling to increase trust: for every local pound in circulation, there is a pound sterling held by the organisation (North and Longhurst, 2013). Practitioners of CLCs considered economic development discourses when designing schemes aiming to address ‘leakage of money’ from local spaces (Ward et al, 2002). An extension of the perspective is the notion of the money multiplier: the notion that money spent within a local area has a multiplied effect, being spent again locally (Sacks, 2002). Ryan-Collins (2011: 62) outlined potential impacts that CLCs could have on local sustainability issues, including; “enhance local resilience, support and protect local independent businesses, encourage a self-help model of exchange and mutual support and reduce carbon emissions through reducing transportation of products”.

Users need to purchase local pounds to participate and businesses are able to convert back to pound sterling. The model could be considered commodity money that has a supply exogenously-controlled through a holding of pound sterling in a bank account that acts as reserves, providing the units value. The models accept hegemonic monetary discourses as they are unable to create further monetary units within their currencies without further backing. Cato and Suárez (2012) cited the Quantity Theory of Money (Friedman, 1958) and believed that the focus of CLCs should be to maximise the speed of the circulation of money within an area, opposed to focusing on the creation of new money. The development of CLCs received significant media attention, with Ryan-Collins (2011; 62) noting; “they have generated astonishing media coverage and captured the public imagination locally, nationally and internationally”.

Kennedy et al (2012) considered the Brixton Pound (2021), detailing its operation and linking its development as a response to austerity. Cato and Suárez (2012) as a Director and Intern of the Stroud Pound (2021), believed that the “view from the inside rather than a disconnected academic account” (2012: 107) would be a useful contribution. They outlined its success in attracting local businesses, providing quantitative data on participation by business type. Cato and Suárez (2012: 110) detail how the “Stroud Pound is deliberately designed to challenge the dominant drivers of a modern capitalist economy: price and choice” and believed individuals failed to understand the nature of money. They stated key concerns about uptake of the Stroud Pound, including: businesses questioning the costs of Stroud Pound but not questioning the costs of credit cards, and the lack of understanding of the local money multiplier. This effect is a concept that has gained further resonance with CLCs, which holds that a pound spent within a local business then stays within the local spatial scale instead of being extracted by outside shareholders (Sacks, 2002).

Graugaard (2012) obtained qualitative and quantitative datasets on the Lewes Pound (2021). The paper aimed to understand the impact on regional development, employing a range of economic, social and environmental indicators. Graugaard (2012: 258) states that the “research suggests that complementary currencies can be an effective tool for building resilience and aiding the transition towards more sustainable systems of provision and consumption”. Graugaard (2012) recognised the limitations of scaling the model, noting that it had not been tested over a longer period of time. Graugaard (2012) did consider that the association of the models with the Transition Towns allowed peer-learning between the schemes to occur and diffusion of best practice. He was more critical of the initiative, believing it had wedded itself too closely with the ideology of the Transition Towns movement. Longhurst (2012: 183)

stated that until dominant systems “experience a more tangible and protracted crisis, it might be difficult for their parallel systems to gain wider credibility and support”. The authors did believe the Totnes Pound operating within the wider Transitions Town network with Brixton, Lewes and Stroud demonstrates how innovative niches can share best practice and develop more efficiency.

Bristol Pound (2021) was developed through a multistakeholder partnership with Bristol City Council and formed part of the city’s bid to the European Green Capital Award in 2015 (Bristol Pound, 2013). The model indicated a broader acceptance of the local currency model, with the Bank of England producing official guidance on local currencies, highlighting Bristol Pound (Naqvi and Southgate, 2013). Bristol Pound gained significant international attention due to the city-scale at which the currency was launched. The Liberal Democrat-led city council were supportive of the scheme, allowing business rates to be paid in Bristol Pound and the mayor received 100% of his salary in the currency (Brown and Kulcher, 2012). The model did develop a significant circuit of businesses, including the ability of its users to pay on local buses and obtain a 100% renewable energy tariff (Bristol Green Capital, 2015).

Bristol Pound produced an analysis of its network, highlighting £5 million worth of transactions, with 620 business account holders and 1433 personal account holders (Madle, 2017). North (2014b) believed that the development of such a diverse circuit of independent businesses allowed Bristol Pound to obtain a local identity. The Bristol Pound, “has worked as tools to create visions of a local economy and reveal the extent that an area has an endowment of local production by locally owned businesses'' (2014b: 260). Ayres and Bird (2018) highlighted the Bristol Pound as a mechanism for city-level informal governance within Bristol. Its structure as a social enterprise allowed

them to pursue economic, social and environmental objectives in partnership with Bristol City Council.

There has been a proclaimed link between the Bristol Pound (£B) and the three themes of sustainability. The impacts of the CLC were investigated by Marshall and O'Neill (2018). They engaged with 27 businesses and local stakeholders to study localisation effects that may result in an improved environmental performance. They stated, "our findings suggest that the £B is an ineffective tool for localisation. The £B has not influenced the businesses who use the currency to procure more local products" (Marshall and O'Neill, 2018: 281). Although the case study only focused on the Bristol Pound, Marshall and O'Neill (2018) believed the findings were applicable to other CLCs, as the currency was the largest within the United Kingdom. My own study on the Birmingham and Bristol Pounds (Bowles, 2017) found the models to be grant dependent and had lower volumes than the media attention suggested. CLCs have been the focus of theoretical and practical attention on complementary local currencies over the last decade but appear to be limited in their scope to scale further.

3.4. Business-to-Business Mutual Credit Systems

Business-to-Business (B2B) mutual credit systems apply similar principles to Local Exchange Trading Systems (LETS), but with businesses. Since the 1980s they have been recognised as; Commercial Barter Networks (CBNs) (Marvasti and Smyth, 1998; Greco, 2009; Kaikati and Kaikati, 2013), collaborative credit systems (Bendell and Greco, 2013; Bendell et al, 2015) or countertrade exchanges (Carter and Gagne, 1988; Palia and Liesch, 1997). Although these models have different names, Healey (1996) described them as "effectively a club of members who have agreed to trade

with each other using ‘private money’ i.e. trade credits” (1996: 3) within a circuit. They operate on national and international scales and are largely overlooked within the complementary local currency literature. These models appear to be structured around a Post Keynesian model of money as credit.

Healey (1996) identified a commercial barter industry within the United States that consisted of 280,000 businesses and $7 billion worth of transactions. Other studies from the period similarly identified significant levels of trade being conducted through commercial barter networks (Marvasti and Smyth, 1998; Lithen, 2002). Stodder (1998) believed that firms use CBNs to liquidate wholesale inventories that could not otherwise be sold. Katikati and Kaitati (2013) identified a significant level of barter transactions globally to specifically access marketing services. “[CBNs] provide a lifeline as they assist large companies in exchanging excess inventory for desired media time and space, thereby enabling these companies to pay for a portion of their future advertising and promotional efforts without exhausting cash reserves” (2013: 55).

There are other studies on the effectiveness of CBNs within specific geographies. Palia and Liesch (1997) surveyed 600 businesses in Australia and found a positive perspective of commercial barter among businesses of all sizes. There were issues associated with effective pricing, but these were balanced out with positive aspects such as cash flow and accessing new markets. Oliver and Mpinganjira (2011) studied the management practices of firms in South Africa and recognised a significant gap in the literature around the model. They too highlighted the dominance of the media industry in barter transactions, although identified a wide set of benefits for participants. A specific country that has received some interest within the local currency literature is Argentina (Pearson, 2003; North, 2008). Powell (2002) outlined

how CBNs in Argentina had grown at an unprecedented rate in response to financial and currency crises. Systems were being organised at a regional scale, with greatest uptake in poorest regions.

Bartercard (2021) is an Australian initiative that developed a global network of businesses (Liesch and Birch, 2001) and grew to 12 other countries including the UK. The Register (2018) outlines how Bartercard had 6000 members in New Zealand and $150 million worth of transactions each year. There is very little academic data available on the operations of Bartercard and related models, however they do appear to operate at scale. Within their corporate marketing and promotion there is no mention of regional development or the themes of sustainability (Bartercard, 2021). The focus of the model is a commercial pitch to the individual business, which is likely why they are largely ignored by the local currency literature.

There are limited examples of B2B mutual credit systems operating within a local geographical scale. WIR formed in Switzerland in 1934 and issues its own complementary currency termed the ‘WIR Franc’, which supports B2B transactions (Stodder, 2009). The currency is created through credit issued by WIR and can only be spent with businesses within its network. WIR has achieved a significant scale within Switzerland, with 60,703 participants and CHF1.61 billion in transactions in 2005 (Stodder and Lietaer, 2016). Analysing WIR transaction and credit creation between 1952-2003, Stodder (2009) concluded that the model is counter-cyclical to the Swiss economy. WIR Francs are used in greater volume in economic downturns, leading Stodder (2009: 93) to state, “WIR’s creation of purchasing power could become an instrument of more effective macroeconomic stabilization”. Its usefulness in supporting the Swiss economy is largely ignored in the local economic development literature and barely features within literature on complementary local currencies.

WIR has a greater similarity to the commercial banks within the Free Banking Era. The credit and currency is created endogenously and forms Monetary Circuits as described by Pilkington (2009). Stodder and Lietaer (2016) analysed how small businesses used WIR Francs and found they demonstrated higher levels of financial planning. Businesses were likely planning purchases in advance with specific income received in WIR Francs, which may have contributed to the lower insolvency rates observed within the circuit (Stodder and Lietaer, 2016). The longevity of WIR may indicate that a local currency based on credit has a greater usefulness than commodity-based systems. WIR was not the only monetary experiment in the 1930s (Gatch, 2012), however it is the one that still remains. It also demonstrates use outside of the alternative or radical demographics that are usually associated with local currencies.

WIR inspired the development of a B2B mutual credit system termed Sardex in 2009 based on the island of Sardinia, Italy (Littera et al, 2014; Motta et al, 2017). Credit is issued within a complementary local currency that can only be spent with participating local businesses. Sardex is similar to the CBNs but restricts membership to businesses within a defined local geographical space. Sardex is required to actively construct a marketplace to ensure users have a diverse enough goods and services on the network. Sardex can be considered a decentralised version of WIR, where the credit is not issued by Sardex itself, but by its participating members. It demonstrates Monetary Circuit and Zelizer Circuit theories, as the money is produced and accepted among a circuit of businesses, who allocate the received local currency for specific purchases locally. Motta et al (2017: 4) state, “the endogenous creation of money within a circuit or community discussed here can only be understood as a combination of economic, sociological, political, cultural, and technological factors”.

Melis et al (2013) and Melis & Guidici (2014) considered Sardex as a response to global financial crises. Its focus on businesses is unusual within the local currency literature, as many studies focus on individuals and communities when considering economic crises. Melis & Guidici (2014) recognise the potential for Sardex to support the relocalisation of economies in the response to the liquidity limitations imposed by financial institutions. The authors also connected the need for relocalisation with sustainability and regional development, “it can be inferred from what was stated by the management of Sardex. Net that the re-localization of the economy is the premise to pursue a sustainable development” (2014: 273). Dini & Kioupkiolis (2014) believe Sardex is a social innovation and discuss how its networks allow the diffusion of values and ideals. However, they recognise that the success of Sardex depended on participants not fully accepting the ideological implications of the model. “We have shown that mutual credit systems such as Sardex appear to grow and remain sustainable for long periods of time without the need for fixed and strong ideological commitment” (2014: 19). The authors believed that Sardex constructs a local non-capitalistic market (Gibson-Graham, 2006; 2008) that allows firms to participate without fully accepting counter-culture narratives. Dini & Kioupkiolis (2014: 19) outlined, “for this kind of market to operate successfully and productively a wide range of visions and beliefs can be accommodated: from the most cynical that views even honesty and accountability as functional requirements to the most idealistic views of community and solidarity”.

Littera et al (2014) analysed the implications the development of Sardex has on the depressed local economy through two frameworks. First, the sociological debate discussed by Evans (2009) on whether money changes values, or values change money. Second, they believe Sardex can be considered a Zelizer Circuit (Colins,

2000), with firms earmarking monies for specific circumstances based on social relationships. Littera et al (2014) demonstrated that trust is central to Sardex, further supporting the concept that it is an endogenously-created local currency that is sustained by social relationships. Iosifidis et al (2015) quantitatively demonstrate how effective the endogenous model employed by Sardex is at maintaining and growing the local currency system. In the three years to December 2014, there had been 66,000 transactions worth €39 million between 2500 users. The transactional levels reflect the other business-orientated endogenously created currencies used within the CBNs.

The recognition that Sardex has grown to have a significant impact on the Sardinian economy has attracted economic development researchers. Mayer (2015) believed the model of local currency employed by Sardex offered a range of benefits that should attract policymakers. These specifically focused on: output gains for users, stabilising effects for local economies, support for businesses in periods of recession, cheaper and more accessible credit and greater velocities of currency in circulation (Mayer, 2015). Lucarelli & Gobbi (2016) identified similar benefits and stated; “it has been shown that the introduction of a complementary currency based on the clearing principle into a pure credit economy acts as a stabiliser of the local economy” (2016: 19). Bendall (2017) explores specifically whether currency innovations such as Sardex can be used to provide credit to small businesses, as traditional and mainstream lenders have been consistently considered inadequate post-2008. He calls for further research on “how to scale such systems and consider their long-term sufficiency” (2017: 58).

Motta et al (2017) draw parallels between Sardex and other social financial institutions. They recognise the need for these organisations to support the creation of social and

environmental value. The model raises implications for governance as it essentially allows the creation of money within a circuit. They describe Sardex as a model of “self-funded social impact investment” (2017) that may appeal to policymakers requiring sustainable financing for projects. It is the first mention of the natural environment in relation to Sardex, although it does not provide analysis or details of potential impacts or benefits. Cannas (2017) identifies Sardex as a collaborative economic scheme that relies on values such as trust, reciprocity and mutual support to benefit the local economy. The currency demonstrates how social entrepreneurship can be used to facilitate local development within an economically depressed region. Sartori & Dini (2016) raise similar benefits and identify the potential for innovative multistaker partnerships with public authorities to further counterbalance the negative impacts of globalised finance.

Dini and Kioupkiolis (2019) go further and believe that Sardex could be an effective model to counter the rising issues associated with capitalism from climate change, inequalities and dissatisfaction with liberal economies. They believe that Sardex offers a model in which “community financial innovations...could be taken up and re-deployed to democratize or ‘commonify’ local economies” (2019: 18). Sardex is considered a direct challenge to neoclassical discourses associated with money and finance. “The key alter-political decision of Sardex to establish mutual credit as the monetary and financial model challenges the vastly unequal financial power of banks and states, which lies at the core of the neoliberal regime, and democratizes the power to create money by distributing it to the circuit members” (2019:18).

A final consideration within this field is the Bangla-Pesa in Kenya, which is described as a ‘collaborative credit system’. Ruddick et al (2015) conducted a detailed study on the system and found significant increases in trading activity among the businesses

that were using the system. Bendell et al (2015) believes the Bangla-Pesa is a demonstration of alternative mechanisms for financing regional development. His research also highlights the misunderstandings of the dominant monetary system within mainstream economics and development academia. Bendell and Greco (2013) discuss the way that mutual credit systems can support the themes of sustainability more generally, but focus on monetary reform. Bendell (2017) recognises a spectrum of currency innovations and believes collaborative credit systems are the most effective at supporting small businesses. The study is used to highlight the potential for using the B2B mutual credit system model to provide sustainable financing to small businesses. He outlines a list of impediments to scaling these models, including issues with digital platforms, taxation and regulations and centralisation of organisations.

The models of B2B mutual credit systems discussed in this section are significantly under researched in comparison to other local currency systems, especially within the UK. There has been very little acknowledgement of these models outside of the local currency literature, even though they do offer a range of potential benefits to small businesses and local economies. The endogenous model of currency demonstrates a potential scalability to create an economically sustainable local currency. The Bristol Pound did develop a proposal for a B2B mutual credit system called ‘Prospects’, that was briefly noted in Marshall and O’Neill (2018), however there is no information as to what happened to the model. This one reference to B2B mutual credit systems in the UK appears isolated even though such systems appear to have the potential to significantly scale. Culkin & Simmons (2019) mention Sardex within a discussion of the implications Brexit may have on access to finance for small businesses, but do not provide substantial discussion.

3.5. Cryptocurrencies

Since 2008 there has been the development of digital currency systems that are underpinned by cryptography (Nakamoto, 2008). Cryptographic computer programmes allow the creation of digital currencies that are finite and cannot be reproduced (Barre, 2015; Egorova & Torzhevskiy, 2016). Their issuance appears exogenously controlled, as the quantity is determined by computers and as their currency units are treated as digital commodities inspired by metallist perspectives of money (Weber, 2014). They are often described as trustless systems, as participants do not need to know one another's identity to transact. The current ownership is recorded on a decentralised internet-based technology called a ‘blockchain’. Weber (2014) outlined; “Bitcoin’s so-called money system tries to mimic metallic money. It is not considered as and not linked to debt. And like cash it is supposed to enable anonymous transactions. Inspired by the fixed supply of gold, Bitcoin’s designers have established a limited stock of 21 million ‘coins’” (2014: 19). Researchers have highlighted the similarities with monetarist perspectives of monetary theory (Rogojanu & Badea, 2014; Weber, 2014). “Bitcoin seems to be underpinned by an ideological superstructure heavily informed by monetarist and libertarian critiques of the conventional money system” (Bjerg, 2016).

They have received negative attention from the mainstream media (Krugman, 2013) with literature on their regulatory and legal implications (Kien-Meng, 2014; Grant & Hogan, 2015). There has been interest from business studies aiming to inform stakeholders of the most effective way to manage risk (Malovic, 2014; Grant & Hogan, 2015). Due to their decentralised nature, academics have highlighted their use by criminals to transact in illicit dark web markets (Buxton and Bingham, 2015; Brown,

2016) and engage in money laundering (Stroukal, 2016). These issues have led to some interest in the field of business ethics with the aim to understand the implications of accepting cryptocurrencies as payment (Angel and McCabe, 2014; Dierksmeier & Seele, 2016). The technology has drawn interest in finance and economics, with academics considering how cryptocurrencies can support innovative financial services (Scott, 2016; Eyal, 2017). They are increasingly being traded by traditional institutional investors (Köchling et al, 2019).

The technology could be considered within two frameworks of the Gibson-Graham (2006) model: cryptocurrencies can be considered alternative transactional methods (Richter et al, 2015) and blockchains, can be considered an alternative decentralised organisational method (Lindman et al, 2017). Bitcoin, the most famous cryptocurrency, allows individuals to make transactions for goods and services, without interaction with the dominant currency regime. This process is unlike CLCs, where traditional currencies are needed to participate in the alternative system. However, Bitcoin and other cryptocurrencies have since become well connected to the dominant financial and economic system, with exchanges and services allowing liquidity to enter and exit the cryptocurrency circuits (Scott, 2016; Eyal, 2017). Bitcoin itself is now widely recognised by its valuation in US dollars, indicating little function as a unit of account. Although the industry is widely recognised by a small number of dominant currencies, in fact any individual or group is able to set up and run a cryptocurrency system and define the rules for its network (Lindman et al, 2017).

There have been studies on the geography of Bitcoin, including how the technology is grounded spatially. Pel (2015) studied Bitcoin mining operations and startup firms and identified concentrations within particular regions. The range of possible models within the cryptocurrency industry has allowed schemes to be focused on particular niches,

including local geographical space. In my Masters thesis I engaged with the founders of Hullcoin (2021) (Bowles, 2017), a cryptocurrency that was aimed to reduce financial exclusion in the city of Hull, UK. Hullcoin can be ‘earnt’ by users through the creation of social value within the city. There has been an interesting development where a CLC has been designed using blockchain technology and was being used by a Liverpool Pound and East London Pound (Colu, 2021). These systems are in fact cryptocurrencies that are backed by pound sterling. The initiatives have been developed by an Israeli technology company called Colu, which was also the subject of my previous research (Bowles, 2017).

Colu has recently pivoted away from its local pounds to become a platform for rewards if consumers spent their money within independent businesses. A recent Colu model was launched in Northern Ireland termed Belfast Coin (Belfast City Council, 2019) which is a public-private initiative to incentivise local community benefits. Hullcoin is a potentially new currency structure within the field, which acts like a community loyalty point. Whereas, the initial system developed by Colu for Liverpool and East London were not new currency structures, but an innovative digital platform that the CLC operated upon. The Belfast Coin appears to be similar to Hullcoin in its attempt to create a community token for initiatives rooted in local space. This process resulted in Torre and Seang (2019) describing the development of the “digitalisation of local currencies", when outlining the technical development of the Colu platform. However, there no longer appears to be a specific Liverpool Pound and East London Pound, as Colu appears to be offering a set platform for multiple cities or communities (Colu, 2021). A study conducted on Colu’s Tel Aviv local currency found that uptake can be encouraged if it is not considered radically new or alternative by users (Shaw, 2019).

There has been limited interest in using cryptocurrencies to support the objectives of regional development. Development scholars hoped Bitcoin may offer a lower cost transactional system to allow businesses to service the world's poorest populations who are often ‘unbanked’ (Dierksmeier & Seele, 2016). Richter et al (2015) believed that blockchains could assist in developing more transparent supply chains to support ethical procurement. Numerous sources have now studied and highlighted the environmental impact of the Bitcoin network, which at peak times has a similar energy consumption of a small country (Vranken, 2017). Mora et al (2018) raised the concern that the growth of the Bitcoin network alone could push global carbon emissions above international targets. Other perspectives on using cryptocurrencies to support sustainability are grounded within libertarian approaches to the monetary system and challenging the monopoly of the state to issue money (Bjerg, 2016; Kleineberg & Helbing, 2016).

Cryptocurrencies operating within both local and global spaces appear to be specifically tailored towards individuals. The model employed initially by Colu in the Liverpool and East London Pounds, alongside its Belfast Coin and Hullcoin, are also specifically targeted at consumers. The approach appears to resonate with the development of the CLCs that believed the key actor of the local economy was consumers. Businesses are an afterthought in these models and with the Belfast Coin and Hullcoin, it is not clear why they would participate. There is no literature or evidence that credit can be made available within the cryptocurrency models, and it is not clear how it could be theoretically created in these systems.

3.6. Indicative Typology of Complementary Local Currencies

Below I have considered each of the complementary local currency types within the framework developed as part of the literature review on orthodox and heterodox economic perspectives of money and credit. The final section will consider how complementary local currencies are considered within the framework of geographies of money and credit, and specifically regional development.

Table 3.1. Contrasting perspectives of orthodox and heterodox economic perspectives of money and credit compared with complementary local currencies

Exogenous, Metallism, Commodity, Substance	**Endogenous, Chartalism, Credit, Function**
Time Banks *Individuals commit one hour of labour to receive a commodity-like token from a centralised time bank. E.g. Tempo*	**Local Exchange Trading Systems (LETS)** *Peer-to-peer initiatives that create decentralised credit within a circuit to facilitate transactions of goods and services. E.g. Manchester LETS*
Convertible Local Currencies (CLCs) *Business-to-Consumer (B2C) initiatives that issue local pounds purchased by users with GBP that are stored within an external bank account. E.g. Bristol Pound, Totnes Pound, Brixton Pound*	**Business-to-Business Mutual Credit System** *Business-to-business initiatives that create decentralised credit within a circuit to facilitate transactions of goods and services. E.g. Sardex, Bartercard, Bangla-Pesa*
Cryptocurrencies *Peer-to-peer initiatives where money is created as a digital commodity by an external process termed mining. Currency must be purchased or given away. E.g. Bitcoin, Hullcoin*	

3.7. Contribution to Regional Development

The geographical study of complementary local currencies since the 1980s has been predominantly conceptualised as a challenge to dominant social constructions of local and regional economies (Hughes, 2005). Leyshon and Thrift (2007) considered complementary local currencies as a response to the extractive nature of the global financial system. Their study of regionalised systems for transactions and exchange aimed to understand how local complementary local currency models could challenge dominant neoclassical social constructions of regional and local economies. It echoed the perspectives of Seyfang (2000), who argued for the need to consider local currencies as a counterbalance to the global financial system that could directly support regional economies. She believed spatial centralisation in financial centres (Cook et al, 2007; Faulconbridge et al, 2007) had an impact on local peripheral regional and local economies through “a shortage of a means of exchange where money (as a store of value) is systematically removed from a locality by centralised banks and firms for investment in more profitable areas” (2000: 233). Although the perspective aims to challenge dominant conceptualisations of regional development, it does not challenge neoclassical economic ontological understandings of money as a commodity, as outlined in the literature review (Wray, 2015; Kelton, 2020).

The previous sections have demonstrated that complementary local currencies have developed as a diversity of different models across spatial scales, that apply both commodity-based and credit-based understandings of money and credit. An empirical study by Seyfang and Longhurst (2013a) found a wide variety of approaches, models and objectives, and overarching connections to regional development were identified. The authors believed that research and understanding of complementary local currencies could allow policymakers to harness their potential in meeting objectives

such as: “pro-environmental behaviour change, increasing civic engagement, supporting local businesses and building new systems of provision for sustainability” (Seyfang and Longhurst, 2013a: 75). Alongside providing mechanisms for regionalised transactions and exchanges, complementary local currencies provide a space to ‘depoliticise’ money and allow individuals to question the social constructions associated with dominant understandings of the global financial system (Helleiner, 2000). Complementary local currencies have been presented as a resistance to these dominant systems of money and credit, allowing the development of localised circuits that cannot be absorbed by global capitalism (Hughes, 2005).

The models applied by complementary local currency practitioners have adopted a range of alternative forms of organisational governance (Bollier and Conaty, 2015; Augustyn, 2017). Douthwaite (2000) highlights a difference between privately-produced monies, such as commercial bank book-money outlined by Keynes (1930), and ‘people-produced monies’, such as complementary local currencies. The notion of people-produced monies has been associated with regional development through the concept of the collective management of local common resources (Seyfang, 2006; Vickers, 2010). Lee (1999) outlines how the fundamental resources of local and regional economies: productivity, skills and creativity, are not limited by a lack of money, but in fact can be exchanged if local mechanisms for transactions exist. Complementary local currencies are regionalised systems for transactions and exchange allowing local management of common resources. A significant number of practitioners and academics have therefore believed that they should embody democratic or collective governance structures such as social enterprises or cooperatives (Meyer and Hudon, 2017; Dini and Kiopkiolis, 2019).

North (2014a) highlights that the governance structure employed by complementary local currencies often reflected their specific aims and objectives. Schemes that hoped to create mechanisms to support the local economy often favoured more democratic governance structures such as cooperatives (Bendall et al, 2013), whereas schemes focused on more commercial aims such as supporting local businesses, usually "prefer a larger, more diverse, anonymous community and feel stifled by commitment-building mechanisms" (2014a: 190), favouring more private governance structures. Ruddick et al (2015) echoes this perspective, believing that complementary local currencies needed to employ cooperative governance structures in order to develop a committed enough local user base. Schemes that employed a greater degree of collective governance are also considered through a framework of wider governance perspectives, such as multi-stakeholder partnerships with local authorities (Ayres and Bird, 2018) that aim to meet broader social policy objectives.

Helleiner (2000) believed that local currencies result in tangible economic benefits for regional development, grounded in decentralisation and reducing outflow of money from localities. "Local currency advocates often argue, for example, that a key macroeconomic problem facing poor local communities is the outflow of money to large, wealthier metropoles within a national currency zone" (Helleiner, 2000: 43). The notion of the outflow of money has also been raised by regional development practitioners through a notion of 'leakage' of money (Sacks, 2002; Ward et al, 2002). Complementary local currencies could build resilience within local communities, providing a buffer against unstable global systems, providing an alternative to free movement capital and ensuring money circulated within local spatial scales (Douthwaite, 2000). Seyfang (2001) outlines two distinct and contrasting pathways in how schemes could support regional development: a mainstream approach based on

support of regime policies or commercial objectives, and a radical strategy based on changing the dominant economic system. Seyfang (2001) termed the aim of schemes to support a mainstream approach, ‘local economic development’ and the support of a radical approach, ‘sustainable local development’ (Seyfang, 2001: 975). These opposing approaches reflect the arguments of North (2014a) which highlighted the differences within their governance structures to meet potentially opposing objectives.

Complementary local currencies are conceptualised as a development of an alternative social constructions and relationships to the dominant discourses associated with neoclassical economics. They aim to facilitate non-market exchanges (Gibson-Graham, 1996; North, 2006a) and develop alternative communities of belief (Harvey, 2006) around a notion of money that supports localised transactions. Individual schemes provide a space for individuals to challenge the values associated with the globalised circuits of value observed within the dominant financial system (Martin, 1999; Hall, 2013). The perspective builds on the concept that money is fundamentally a social construction grounded within socially constructed space (Dodd, 1994; Hudson, 1998; Hall, 2017); this spatial grounding can be within nation-states (Harvey, 2006; Agnew, 2010) or can be within local or regional spaces. Lee (1999: 212) believed that this reimagining of money at a local spatial scale offered a “potential form of social policy with which to address questions of social, economic and spatial exclusion”. Advocates of complementary local currency systems promote a plethora of potential social benefits; “community-building, i.e. the resurrection and improvement of local social networks; advancing alternative values mediated through economic exchange (i.e. challenging mainstream values regarding race, class, gender, and nature); facilitation of alternative livelihoods, less dependant on formal employment; and eco-localization, i.e. the ecologically motivated localization of networks of

production and consumption" (Dittmer, 2013: 4). Seyfang and Longhurst (2012) described how schemes participated within peer-learning initiatives to share knowledge and best practice.

The connection of complementary local currencies to regional development has also become associated with environmental sustainability (Seyfang and Longhurst, 2013a). Aldridge et al (2001) highlighted how local currencies initially received uptake within middle class communities that already held environmentalist values, that were then applied within their local systems of transactions and exchange. Bowring (1998) outlined that Local Exchange Trading Systems (LETS) represented an eco-socialist initiative and supported objectives such as greater repair and reuse. He believed that participants had reduced exposure to "client and consumer propaganda, contributed to their practical autonomy and self direction, and consequently reduced their desire for gratuitous and wasteful forms of consumption" (1998: 103). Similarly, Seyfang (2009) and Mock et al (2013) believed that complementary local currencies could be used to meet individual and community needs without the values and imperatives of economic growth associated with the global financialised capitalism (Epstein, 2005).

Seyfang (2001) believed the radical approach of sustainable local development was being met within some schemes, with examples such as the revaluation of work, localisation of economies and enhanced green social networks. Seyfang (2001) criticised previous literature for having an overemphasis on mainstream local economic objectives, calling for a refocus on a radical policy agenda. She later outlined further suggestions for using community currencies to meet environmental objectives alongside regional development (Seyfang, 2006). Seyfang and Smith (2007) considered schemes as examples of grassroots and community-led innovations for sustainable local development, linking them to system innovation and the transition to

sustainability (Elzen et al, 2004; Geels, 2010). Seyfang and Longhurst (2011) conceptualised complementary local currencies as grassroots innovation niches for sustainability and quantified the number of schemes worldwide (Seyfang and Longhurst, 2013a; 2013b). They highlighted six indicators which they termed "sustainability functionalities" (Seyfang and Longhurst, 2011: 7): stimulating localisation, building the informal economy, reducing ecological footprints, providing credit for small businesses, providing investment mechanisms for green technologies and embedding economic activity within ecological limits.

The criticism of the dominant monetary system by Douthwaite (1999) was later advocated by Hutchinson et al (2002) who believed that a greater understanding of money was required to shape alternatives that would support sustainability. The authors critiqued the lack of understanding that mainstream economists had of the operation of money within the economy. Hutchinson et al (2002) promoted a green feminist analytical approach, drawing on complementary currency case studies, that they believed could support a greater understanding of the monetary system. Mellor (2010) too critiqued the monetary system's role within restricting the transition to a sustainable society and suggested that national money should be replaced by regional LETS. Douthwaite (2012) too proposed the development of regional LETS based on the size of populations that had been established through analysing the most effective size for community banks. He believed that regional currencies should be based on around three million people, resulting in Britain having around thirty six under this framework. Douthwaite (2012) made an explicit link between money and natural resources that was echoed by Lietaer et al (2012) and Robertson (2012). The authors argued that the lack of academic research on the role money has within society was reducing the ability to transition to a sustainable economy. Lietaer et al (2012) outlined

that a diversity of regional currencies was needed to provide resilience within regional economies and support a wider set of objectives associated with sustainability.

Researchers have raised criticism of the effectiveness of complementary local currencies in meeting regional development and sustainability objectives. Dittmer (2013) believed there was little evidence that the current dominant complementary local currency models were supporting sustainability objectives. Dittmer (2013) argued there was an inherent contradiction: schemes that were radical enough for system-change could not obtain significant public support, whereas less radical schemes aimed at greater uptake among elites reduced the potential for the system-change. This analysis reflected the earlier research by Seyfang (2001) who considered them as two contrasting approaches. Michel and Hudon (2015) identified a similar lack of evidence for their ability to support the objectives of local sustainability. Lietaer et al (2012) and Robertson (2012) believed that the lack of academic research on the role money has within society was reducing the ability to structure effective local currencies and contribute to a more sustainable society.

Dittmer (2013) argued that practitioners and researchers should focus their attention on “government-centred monetary reform, enriching [campaigners] with [a] growth critique and vision of a purposive socio-ecological transition” (2013: 11). Local currencies have been associated with a broader attempt to critique and challenge the dominant monetary system, but often as merely a space for users to engage with these issues (Helleiner, 2000). Douthwaite (1999; 2012) proposed the development of complementary local currencies at a much larger scale to enable a practical challenge to the influence of the dominant financial system. Hornborg (2017) combines the concepts of monetary reform and investments in renewable energy and proposes regional currency systems that are combined with universal basic income.

Proposals to challenge the monetary system have been considered within the framework of post-growth economics and challenges to the use of Gross Domestic Product as a primary measure of success (Kallis, 2011; Kallis et al, 2012; Cahen-Fourot and Lavoie, 2016; Hanaček et al, 2020). The New Economics Foundation provided two contributions that resonated with ideas of reform of the dominant monetary system. They outlined the concept of energy-backed currencies (New Economics Foundation, 2013a) and then an analysis of Quantitative Easing (QE) programmes proposing it should be linked to investments in renewable energy (New Economics Foundation, 2013b). Similar proposals were taken up by the UK Official Opposition and termed; People's Quantitative Easing, alongside now being discussed in US politics as part of a Green New Deal. This perspective resonates with Modern Monetary Theory (Wray, 2015; Kelton, 2020) where governments could create the money needed to support investments towards the objectives of sustainability.

3.8. Limitations of Existing Literature and Emerging Questions

It is clear why Professor Paolo Dini at the Blockchain and Sustainable Communities Event (2016) in Cloughjordan, Ireland believed practitioners should understand money on a fundamental level. Without sufficient investigation into money and credit it would be intuitive to develop a scheme based on a commodity-understanding of money. The literature review has shown that the dominant social construction of money as a commodity is often an accepted truth, even when criticising wider social constructions of the economy. In the case of the literature on geographies of money and credit, there is an implicit acceptance of neoclassical ontological orthodoxy, although the discipline has significant interest in challenging the dominant financial system and offering alternative mechanisms for transactions and exchange. Money and credit within

analysis of regional development is also predominantly considered through a neoclassical lens. There is a need to consider Post Keynesian perspectives as a potential approach for analysis of regional development.

A credit-based complementary local currency scheme provides a case study to consider how a Post Keynesian perspective of money can be considered within a broader framework of regional development. Credit-based models have examples of successful long-term implementations in the case of the WIR, Switzerland and more recently Sardex, Italy, indicating that this model warrants greater exploration. One of the barriers to developing credit-based models is that heterodox theoretical understandings of money and credit first need to be understood by practitioners before supporting the development of a scheme. Although there is a growing body of research on Sardex, initial engagements with the local currency sector within the United Kingdom indicate there has been little understanding of the model. Even I, who had a strong personal interest in alternative currencies before starting this research, found it difficult at first to understand the model. Reflecting on the literature and the current composition of the local currency sector within the UK, a series of questions are raised that this thesis aims to address.

Firstly, there is a need for the local currency sector in the UK to consider models that apply heterodox understandings of money, of which Sardex is a good example. An endogenously-created credit-based complementary local currency presents opportunities to support individual businesses, but also has challenges not present within exogenously-created commodity-based models. The application of a lens of geographies of money and credit provides an opportunity to consider the spatial grounding of the alternative mechanism for transactions and exchange. The study of Sardex through the application of heterodox perspectives and geographies of money

allows an insight of how the local currency is created as credit and then used by small businesses. This will provide a theoretically-grounded understanding of the positive impacts the model has on individual businesses and their wider contribution to regional development, whilst highlighting how the challenges present within the model are overcome. These observations will provide a basis for replicating and scaling the model within other geographies, including the UK. It also provides the discipline an insight in how money is created and circuited if considered through a Post Keynesian lens.

Secondly, there have been limited studies on the specific Business-to-Business (B2B) mutual credit system model applied by Sardex to consider their contribution to wider sustainability themes, including those of regional development. Researchers and practitioners have considered complementary local currencies as a piece of the sustainability puzzle, yet there has been little evidence of their contribution to the three themes: economic, social and environmental. There is a need to conduct a study on Sardex, as a functioning circuit to consider the contributions it has to the three sustainability themes. Sardex applies an alternative endogenously-created credit-based model that requires investigation to consider the contributions it can have to themes of sustainability. It will allow practitioners and policymakers within other geographies such as the UK to consider how the model can support the wider sustainability objectives alongside regional development.

Thirdly, the success of Sardex in applying a credit-based complementary local currency raises questions about the current situation of UK schemes in applying this model, or at least offering credit. There have been no studies into whether complementary local currencies within the UK can offer credit, either through applying a credit-based model or providing credit through the dominant commodity-based

convertible local currencies. There is a need to understand whether the ontological understandings of money and credit have affected the assumptions that practitioners made when creating these schemes. This investigation takes place within a context in which there is a recognised issue in the economic geography literature around the provision of credit to small businesses, and therefore the application of innovative solutions is sorely required. The literature review has also raised a gap in understanding around ‘commercial barter networks’ which appear to implement the same credit-based model within their currency systems. These models are largely ignored in the complementary local currency literature and therefore there is a need to understand where these models are located within the field. Furthermore, there has been no investigation to date into whether the provision of credit through a complementary local currency to small businesses can support the objectives of regional development and sustainability in the UK. The aim of this study is therefore to contribute to the field in understanding how the provision of credit through a complementary local currency can support these wider objectives.

The lack of endogenously-created credit-based complementary local currencies within the UK or schemes aiming to replicate the successes of Sardex raises the final research gap that this investigation hopes to contribute. Potentially there are specific issues or limitations when applying this model within the UK. The consideration of this problem through the lens of geographies of money and credit may provide valuable insights to the barriers being faced by practitioners. The model has not taken off within the UK local currency sector, even though there have been successful applications of the credit-based model around the world. It is the aim of this research to address this gap through understanding the limitations and potential for developing a B2B mutual credit system within the UK. As there are few B2B mutual credit systems in the UK,

part of the study will focus on my own experiences developing a credit-based complementary local currency in Birmingham, UK. There is a need to provide insights to practitioners and policymakers that may be useful supporting the replication of the successes of Sardex and consider initial contributions to regional development.

The two consistent threads throughout this research are how money and credit are conceptualised by society and how this affects the understanding of their roles within regional development. The dominant perspective of money: as an aspatial, exogenously-created commodity that lacks social values, affects the way research is conducted on the topic and how alternative visions of money are described and implemented. The first thread aims to demonstrate the application of heterodox perspectives of money: a phenomenon that exists within space, that is endogenously created and is structured around social relationships. This provides an avenue to explore alternative visions of money, in particular alternative models of complementary local currencies. The second thread aims to apply this alternative perspective within a framework of regional development. Although complementary local currencies are only a minor solution compared with the broader challenges within regional development. The application of heterodox perspectives has broader implications for understanding how money and credit are created within society and how this influences regional development. The next chapter will explain the methodology used before presenting and discussing the results in four further chapters devoted to each of these four research areas.

4. METHODOLOGY

A study of credit-based complementary local currencies must demonstrate a clear methodological approach. The following chapter first considers research philosophy, indicating the understanding of the objects under study and recognises that my positionality as a researcher is a crucial aspect. Using this philosophical basis, it outlines the methodologies used to interpret the social processes underway within Sardex, the local currency sector in the United Kingdom (UK) and the development of a scheme in Birmingham, UK. The chapter then outlines how the data was analysed before considering reflections and limitations within the research and concluding remarks.

4.1. Research Philosophy

In research there is a need for a philosophy to inform the practice of the researcher and at the same time, through this practice, the research philosophy is informed (Yeung, 1997). Social science has been traditionally divided into two broadly opposing ontological perspectives: positivism and social constructivism, a divide demonstrated by the ‘paradigm wars’ in the late 20th century (Hammersley, 1992; Denzin & Lincoln, 2011). Positivism is grounded within an ontological understanding that there are independent structures and processes that exist as a single objective free-standing reality or truth (Peet and Thrift, 1989). Within a positivist perspective, the ‘reality’ can be understood using an epistemology that prioritises value-free empirical research and measurement that will supposedly produce objective knowledge of these structures and processes. Research based on a framework of positivism will apply predominantly

quantitative methodologies to understand generalisable rules that can be represented largely with mathematics and statistics (Mäki & Oinas, 2004).

Social constructivism indicates an ontological belief that there are multiple social realities or truths based on the perspectives of individuals. Epistemologies are grounded within a notion that knowledge needs to be generated through interpretation to discover underlying meanings, instead of discovery of an objective fact. “Construction ‘talk’ to refute taken-for-granted beliefs about the essential nature of things - like gender differences - by showing that those things are not natural at all, but instead are somehow socially constructed” (Demeritt, 2002: 769). Qualitative methodologies are used to discover knowledge that is created subjectively in a world of values and meanings generated by individuals and groups. It recognises that the “truth cannot be out here - cannot exist independently of the human mind - because sentences cannot exist, or be out there. The world is out there, but descriptions of the world are not” (Rorty and Richard, 1989: 5). The social world has a variety of social constructions such as language, discourses, cultures, behaviours, beliefs, practices, institutions and economies that make its analysis complex (Aitken and Valentine, 2014). Social constructivism implies that the phenomena under study have multiple interpretations and that observers must consider the perspectives of the subjects under study alongside their own values and interpretations. Recognition of the social construction of structures and processes allows researchers to understand that although there may be contradictions, it reflects a rich diversity of interpretations and expressions, allowing a deeper understanding of the social world (Harré, 2017).

Henri Lefebvre demonstrated that space was socially and discursively produced (Lefebvre, 1974) through political interactions and processes (Lefebvre, 1976). Soja (1980) provides a summary of the philosophical divide among geographers, believing

there is a distinction between objective or contextual space, and subjective or created space. He demonstrates that a positivist perspective of space would see it as, “a container of human life, its objectifiable geometry, and its essence”, whereas a social constructivist position would consider a “socially based spatiality, the created space of social organization and production” (1980: 209). The philosophical basis of the research affects what methodologies are used to identify and understand the processes under inquiry (Pratt, 1995). A study of a region must consider it to be a social construct and a product of institutional arrangements and language (Hudson, 2007). Thrift (2002) outlined how regions are specifically ‘marked out’ by top down socially constructed policies to create imagined units of competition at a regional level.

A social constructivist perspective may lead to an extreme interpretation that the world that we inhabit merely emanates from the mind of the inhabitants. As Nicolini (2012: 199) states, “counter to some extreme constructivist positions, the constitutive role of language should not lead to the idealist conclusion that the world emanates from people’s heads and/or mouth”. Critical realism is a research philosophy that aims to chart a course between the ontological perspectives of positivism and social constructionism. It draws on the work of philosopher Roy Bhaskar (1978; 1986) and other scholars (Sayer, 1984; Layder, 1990). It believes that positivism has been effective at understanding how natural processes occur, and that its empirical methodologies have some value in understanding the social world. However, although there is a container of human life or objectifiable geometry, there is a process of knowing this essence and that process of knowing is socially constructed. Critical realism places a central emphasis on ontology, the understanding of reality and nature of things: what they are, where they are and how they exist. Bhaskar (1978; 1986) argued that not only is there a need for ontology, but for a structured and differentiated

ontology that is presupposed before research practice. An initial position on ontology of the subject being studied will inform the researcher to make decisions about epistemology that will most effectively understand the object under investigation.

The study of money by neoclassical economics aims to be structured through a positivist ontological framework, believing economic processes can be objectively understood. Friedman (1953: 146) argued*;* "[i]ts performance is to be judged by the precision, scope, and conformity with experience of the predictions it yields. In short, positive economics is, or can be, an 'objective' science, in precisely the same sense as any of the physical sciences". Commodity money that evolved from barter was considered to be derived by naturally occurring free markets that resulted in methodologies that aimed to understand its objective reality. The competing argument that money developed as credit (Graebar, 2011) and is created within an institutional and societal context (Dodd, 1994; 2014) indicates a need for a social constructionist framework for study. Heterodox economists and economic geographers consider money as a unit of account created as credit that has value because of the imposition of power by state structures (Agnew, 2010; Wray, 2015; Kelton, 2020). These state structures require the unit of account as payment for taxes and fines, or allow institutions such as commercial banks to accept currency as payment for debts (Keynes, 1930). These contrasting philosophical perspectives and the undermining of orthodox perspectives over recent decades resulted in Ingham (1996: 509) to state, "mainstream economics does not possess an adequate ontological theory of money".

Post Keynesian economists have increasingly applied a critical realist perspective. Scholars have used the insights of critical realism to critique mainstream economic perspectives (Aretis, 1992; Dow, 1999). A debate within the field on econometric methodologies illuminates the incorporation of critical realist perspectives within Post

Keynesian economics. Econometrics pre-suppose that events within economies, such as behaviours and transactions, can be mathematically modelled. Downward and Mearman (2002) state that the use of econometric methodologies “suggests that the structures of the phenomena under study are constant, unchanging and that for any intrinsic state only one outcome is possible” (2002: 393). Mainstream neoclassical economics significantly rely on econometrics and therefore imply an ontological framework in which they are studying an objectifiable geometry (O'Boyle and McDonough, 2011). Post Keynesian scholars have become critical of these epistemologies within orthodox economics and have also become critical of their own scholars over relying on these methodologies (Fullbrook, 2008). Morgan (2016) outlines that orthodox economics reduces the object being studied: the economy, to a separate closed system. The use of criticism realism by heterodox economics provides “a more plausibly realistic account of the economy as an intrinsic aspect of society” (2016: 15). Specifically for the study of money and credit, Morgan (2016) highlights that Post Keynesians “focus on different aspects of open systems [such as] the creation of money in a fiat system dominated by the credit-debt powers of private banking and subject to a complex institutional web of financialization” (2016: 26). Critical realism allows a fundamental understanding of the object of money being studied and the wider social context for its study.

The ontological basis for credit and money outlined in the literature rejects the perspective of money as a value-free commodity and considers it as a social relationship across circuits located within a socially constructed (regional) space. Previous empirical studies on Sardex have identified social processes that support this ontological position (Littera et al, 2014). To fully understand how a credit-based complementary local currency functions, the object of the research is therefore social

relationships. A social constructivist perspective rejects the supposed objective perspectives of positivism applied by neoclassical economics. It recognises that these social relationships are affected by processes such as language, cultures, behaviours, beliefs, practices and institutions. These currency processes do rely on physical artefacts that “exist” outside of the mind of the observers such as the payment technologies that Sardex relies upon. This recognition reflects a wider position that critical realism provides a basis for the study of money and credit. Applying a chartalist perspective, Suzuki (2001; 2004: 34) believed that the middle ground approach provided by critical realism allows the study of socially constructed social and institutional processes associated with money and credit, but also the “material means of transactions found in everyday use: notes, coins, cheques and credit cards”. Critical realism acknowledges a material realism but also requires the researcher to consider their role in observing and understanding processes, both material and social (Yeung, 2019).

4.2. Research Design

The study of the ability of complementary local currencies within Italy and UK to provide credit to small businesses had three research components. The first component focused on Sardex in Italy, as this is a functioning scheme in which the local currency is endogenously-created and credit-based. Sardex was considered through a case study that presents how credit is created and used within the local currency, alongside its initial contribution to regional development and the themes of sustainability. Case study research provides a detailed examination of a single example of a class of social phenomena, that is often the result of multiple data collection techniques to provide and test hypotheses (Abercrombie, Hill, & Turner,

1984; Flyvberg, 2006). The Sardex case study was the result of multiple data collection techniques: semi-structured interviews, a focus group, review of public documents, websites and the mobile application, which were triangulated with field observations. The case study approach provided an in depth perspective of Sardex as an endogenously-created credit-based complementary local currency that initial theoretical perspectives could be abstracted and tested. It provided the basis to then review the UK complementary local currencies and the development of a similar model to Sardex within Birmingham, UK.

The second component of the research then conducted a review of complementary local currency models in the UK, considering whether they offer credit and their potential contributions to regional development. Although reviews of complementary local currency models and individual schemes had been done before, there had not been significant research into their ability to offer credit. The research mapped the UK sector through semi-structured interviews, reviews of public documents and websites, that was triangulated with field observations. It aims to understand their ability to provide credit and whether this was influenced by whether the currency was endogenously or exogenously created.

The final component of the study considered the development of the credit-based model Parity Network Ltd, a project that I have been directly involved in developing. It uses Participatory Action Research (PAR) techniques to apply understandings gained from the first two components to a practical project and collect data on the outcome of its development. “Participatory research describes a family of approaches wherein those conventionally ‘researched’ are directly involved in some or all stages of research, from problem definition through to dissemination and action (Pain and Kindon, 2007: 2807). PAR techniques have been associated with using academic

research as a social or political project, concerned with liberating marginalised and exploited subjects through equipping them with sufficient knowledge of their own position within power structures and hierarchies (Cameron and Gibson, 2005). Although small businesses are not often considered as marginalised, in the context of the withdrawal of financial services, they are marginalised by the global financial and monetary systems that can be observed through the lens of space (Martin, 1999; Hall, 2013). The aim of the development of an endogenously-created complementary local currency was to consider if this withdrawal of financial services could be addressed through the provision of credit within an alternative structure. Data was collected through ethnographic techniques of my own role within the complementary local currency being developed, working with small businesses in Birmingham UK, alongside field observations and review of documents and websites.

The three interrelated research components applied a plethora of different data collection methodologies within different field locations. The multi-method approach included: semi-structured interviews, field observations, focus groups, reviews of publicly available documents, videos and websites, observations at sector conferences and events, review of interview transcripts conducted by a market research agency, ethnographic and PAR techniques were applied within the different components. The insights collected from these complementary data collection methodologies were triangulated to allow data to be verified and a deeper understanding of the social phenomenon. Table 4.1. below outlines a summary of how the different approaches were applied across the different research components and field locations.

Table 4.1. Summary of different data collection methodologies across the three components

	Sardex Case Study	**Review of UK Complementary Local Currencies**	**Participatory Action Research of Parity Network Ltd**
Description	*Research into the Sardex scheme that applies an endogenously-created, credit-based local currency.*	*Research into the ability of different UK CLC schemes, both commodity-based and credit-based models, to provide credit to small businesses.*	*Research into the development of Parity Network Ltd that applied an endogenously-created, credit based local currency.*
Location	*Sardinia, Italy*	*United Kingdom*	*Birmingham, UK.*
Methods	*Semi-structured interviews with Sardex business users, employees and stakeholders, review of public documents, website and mobile application, field and conference observations. A focus group.*	*Review of public documents and websites, semi-structured interviews with CLC managers and users, conference observations, semi-structured interviews with sector experts.*	*Review of public documents and websites, ethnography, conference and sector events observations, engagements with regional organisations, review of interview transcripts, telephone interviews with business users.*
Data Realisation	*7 semi-structured interviews with Sardex staff, 1 focus group with 3 staff, 2 semi-structured interviews with Sardex Stakeholders, 79 semi-structured interviews with business users, 33432 words in over 105 field diary entries. Review of Sardex documents, website and mobile application*	*Attendance of 3 sector conferences, review of videos from 1 sector conference, 9 semi-structured interviews with scheme managers, 3 users of schemes, semi-structured interviews with sector experts*	*64871 words over 185 field diary entries, formal engagements with 19 public, private and third sector organisations, informal conversations with over 200 business entities, review of 12 telephone interviews conducted by third party market research agency.*
Field Calendar	*Two field visits: 26/10/2018 - 01/11/2018 and 19/03/2019 - 23/03/2019.*	*Data collection between:* 19/07/2017-08/03/2019	*Data collection between:* 11/10/2017-19/08/2019
Results Chapters	*5 & 6*	*7*	8

The data collection methodologies outlined in the above summary are outlined in more detail in the preceding part of the chapter. Before these methodologies are explored, the implications of reflexivity and positionality on my research design are considered.

4.3. Reflexivity and Positionality

The methodologies applied within this study are qualitative. They apply a plethora of data collection techniques that include: semi-structured interviews (Crang, 2002; Eden et al, 2005) and field observations (Fyfe, 1992; Cloke et al, 2004), both accompanying the interviews and as a standalone methodology in the case of ethnography (Lees, 2003) within the Participatory Action Research component. These methodologies reflect the ontological basis of the object under study, as they allow interpretation of the social reality experienced by the users of credit-based complementary local currency (Kitchin and Tate, 2013). The approach needed me to consider my own reflexivity and positionality in relation to the objects being studied. Reflexivity is the process of the researcher considering how their own beliefs and values within the context of the research affect the knowledge generated (Haraway, 1991). The creation of a research initiative and its subsequent generation of knowledge through subjective interpretation will come with my own ‘baggage’ as a researcher (Cameron and Gibson, 2005).

Feminist geographers, among others, have considered the implications of reflexivity on the generation of knowledge. Researchers aim to detail accounts of power relations, changing subjectivities and the overall effects of the researcher (McDowell, 1992). Human geographers have recognised that the generation of knowledge is situated within a specific socially constructed context, termed, ‘situated knowledge’.

Researchers recognise their own positionality within the research process and how their identity and power relations between them and their subjects affects research outcomes. To conduct effective inquiry into social processes, the researcher must consider how their own background and role has affected decision-making within the research process (Rose, 1997).

Before pursuing my PhD I held professional roles ranging from delivering low carbon community projects to working on European sustainability transitions policy. My peers observed I had an unusual tendency; that I am equal parts academic and practitioner. My academic interest in sustainable development is similar to other researchers in the field: hoping that complementary local currencies could offer a mechanism to support its objectives. However, my practitioner tendencies influenced me to identify a local currency model that I believed to the best of my knowledge could work in practice. I had experienced the difficulties of delivering community-based programmes that aimed to meet sustainability objectives in the framework of regional development which provided me a critical perspective when considering different schemes. The approach could be considered a positive influence in the grounding of the study and the development of the research questions. I believe I am more open to for-profit initiatives than is traditionally associated with the local currency sector, as I had studied MA Corporate Social Responsibility and which had highlighted successful private-sector initiatives. There appeared to be a lack of ‘private currencies’ within the literature, and I believe my own positionality allowed for this wider consideration of the field. However, this perspective could also have a negative influence, as some local currency schemes have been considered eco-socialist initiatives and there have been calls for more radical perspectives in understanding these models.

When I started my PhD I volunteered with the Birmingham Pound Steering Group, created by Localise West Midlands (2021). The role allowed me to understand the practical implications of forming a complementary local currency within a city. It also allowed me to engage with the wider sector, including other schemes from across the UK. The dual role as practitioner and academic suited me, I was able to apply the theories into practice and access the UK local currency sector as a fellow practitioner. Previous studies applying PAR and ethnographic techniques have often highlighted the positionality of the research within the data collection process. Traditionally researchers have considered an insider-outsider dichotomy (Kerstetter, 2012), where researchers aimed to act as objective outsiders, but often brought a series of traits, “such as level of formal education and access to resources - also connote a more privileged and powerful status in the larger society” (2012: 99). However, there have been a series of research that apply a greater degree of insider status, where the researcher often originates from the group that they are studying (Kanuha, 2000). The approach comes with contradictions, as when a researcher aims to conduct research on a group that they may consider their own, “the responsibility and expectation that [they] produce knowledge as a scholar implicitly obviates or at least compromises his or her insider status” (2000: 444).

My role within the Birmingham Pound resulted in considering myself an insider among the group that was being studied. It allowed me a better understanding of the challenges that they faced as schemes. I felt the observation made by Kanuha (2000) that this insider status enhanced the authenticity of the study, however I did feel that once I became a scholar within the field, I felt myself losing that insider status. The insider status had also allowed me to experience the limitations of the Birmingham Pound (2018a) first hand and I became critical of the model. Potentially, this insider

status could therefore have determined the direction of the academic pursuit, as I had developed a critical opinion early in the research of the majority of the models employed in the UK. This may have had implications for the research, as I had become less open to the generalised arguments for these models, many of which were grounded within more radical eco-socialist perspectives. Potentially through experiencing the limitations of the models as an insider, I became more detached from the group I was studying, which was further emphasised by my role as a scholar.

Insider involvement within the sector had resulted in meeting Professor Paolo Dini and a series of events that resulted in fieldwork on Sardex in Sardinia. The dynamics between me and my research participants in Sardinia were completely different to my relationship to the UK schemes. Not only did I physically look different to my research participants, but I did not speak the language. I had very little connection with my research participants, I was an outsider that required help from my interpreter. However, it did become apparent that this positionality may have actually supported my research. Many of the business users were worried that as a researcher, I represented Sardex and therefore did not want to speak freely. My different appearance and inability to speak Italian, encouraged them to be open with my interpreter. Although they were largely unenthused about my academic role, I felt I was able to connect on a practitioner level. My outsider position also influenced me to want to understand more about the perspectives of the business users. Whereas with the UK schemes, I had an initial negative perspective, with Sardex I had a much more positive approach as it appeared their scheme was successful.

My positionality evolved whilst I was undergoing my research. The failure of the Birmingham Pound resulted in myself and others from the steering group pursuing a Sardex-like Business-to-Business (B2B) mutual credit system. This shift of focus

raised positionality concerns as I would now be directly involved with a commercial startup that one day I may profit from. It was not unusual for PhD research to eventually be commercialised, but I was commercialising whilst still researching. The practitioner within me wanted to pursue the startup to test the theories observed by the academic within me. It raised conflicts between being academically rigorous and ensuring the company is presented in the best way possible. I did consider stepping back but had realised I was fundamental to its development. Engagements with the sector identified significant strength in having practical experience of scheme development coupled with academic insights. If I was just a practitioner, I may have been influenced by similar group-learning processes that may have resulted in schemes pursuing models like Bristol Pound (2021). If I was just a researcher, I may not have had the confidence to challenge accepted local currency narratives.

It was uncharted territory for me in developing a methodology that could provide observations whilst recognising my central role within the scheme. I engaged with senior staff within the Geography Department at the University of Birmingham about a potential methodology that would allow me to collect data from my own experiences. I also sought other opinions, including from academics that had commercialised research. It was clear that it was an unusual situation for the researcher to find themselves within. It could be navigated if I was sufficiently aware of the positionality implications developed by for example feminist geographers (McDowell, 1992) and the situation of the knowledge (Rose, 1997). I would essentially be generating the knowledge that I was also collecting, that if not properly managed, could affect the quality of the research. It appeared to suit an PAR and ethnographic study, where I would be reporting back on my experiences and hoping to make positive change within the lived experiences of my research participants. However, this research would be

different to the positionality of the usual ethnographer. I would be less of an outsider and would be collecting data as an insider.

My participation as a practitioner within the complementary local currency sector allowed me to understand the current nature of the field. It provided me with the basis to shape my research around Sardex. My background and interests encouraged an investigation about the potential impacts that Sardex was having on regional development. Studying Sardex would allow me to initially understand if a B2B mutual credit system could be applied within the UK. The unplanned eventual development of the Birmingham Pound into Parity Network Ltd, provided access to an embryonic scheme to develop a credit-based model. It would allow me to experience first-hand its limitations and opportunities.

4.4. Sardex, Sardinia, Italy

The following section outlines the methodology used to collect data and form a case study on Sardex and is the first component of the research.

4.4.1. Data Collection Design and Strategy

Professor Paolo Dini suggested research be conducted on the week of Sardex Mitzas (2018), the company's annual conference. It presented an opportunity to observe the conference (Fyfe, 1992; Cloke et al, 2004) and build rapport with staff, business users and stakeholders (Pile, 2010). Mitzas provided the basis for an initial visit to Sardinia, developing contacts and understanding the field. Once this visit was complete, a second visit was conducted to create a more representative sample (Cloke et al, 2004).

Prior to attending Sardinia, I decided two data collection approaches would be applied. Semi-structured interviews (Crang, 2002; Longhurst, 2003) with staff, stakeholders and business users would be the primary data collection strategy. Staff were anyone directly employed by Sardex or its sister networks. Stakeholders were projects who worked with Sardex, such as community initiatives. Business users were those who were currently participating in Sardex. The aim of these interviews were to understand Sardex through analysis of the ‘stories’ of those associated with the local currency (Crang, 2002). An ontological understanding of money and credit as a social relationship indicated that analysing the ‘stories’ of individuals participating within the circuit was the most effective method to understand the complementary local currency. However, geographers have recognised that even when interviewing corporate elites, participants do not have access to perfect information and therefore their accounts must be triangulated (Hughes, 1999). The semi-structured interviews were triangulated with field observations and secondary data collection of items such as public documents (Yeung, 2003; Olsen, 2004) to allow the construction of a case study. These were collected at the Sardex Mitzas (2018) conference, Sardex headquarters, business user premises and within public spaces.

Three semi-structured interview protocols were developed before entering the field for staff, stakeholders and business users. They included questions on Sardex and issues of regional development and sustainability. Observations were written within my field diary and included information on: date and time, location, topics, persons and secondary sources such as: documents and marketing. My inability to speak Italian required an Italian interpreter to conduct interviews. A cofounder of the complementary local currency scheme in Birmingham was Italian and had previously conducted qualitative research on Sardex. I arranged for him to be my interpreter as he had a

theoretical and practical understanding of B2B mutual credit systems. He conducted the semi-structured interviews, alongside providing his own observations that were added to the research diary. Copies or photographs were taken of publicly available documentation. The multiple methodologies were then brought together to form a case study on the Sardex complementary local currency.

To ensure ethical implications were managed, staff, stakeholders and business users were required to provide written consent for their participation. Contributions have been anonymised and each participant given a random number (i.e. Business User 14). Where specific factors such as product or service type, staff position, geographical location or transactions could be used as identifying information, these have been removed. The strategy was applied to reduce the influence that the company Sardex had on my participants. I believed this would allow me to understand how effective it was for business users and the wider objective of regional development. Staff, stakeholders and business users independently agreed to participate within the study and their input was their own perspectives and opinions. All ethical considerations were reviewed and approved by the University of Birmingham prior to entering the field.

4.4.2. Sampling and Recruitment Strategy

The fieldwork took place over the period of 26/10/2018 to 23/03/2019 inclusive. There were two field visits: the first 26/10/2018-01/11/2018 and then the second 19/03/2019-23/03/2019, alongside a series of phone and video calls from the UK. The initial visit included attendance at the annual conference of Sardex Mitzas (2018) that allowed convenience sampling of attendees that included Sardex staff, stakeholders and

business users in between sessions and at informal evening events. The first visit also included access to Sardex headquarters in Serramanna, allowing further convenience sampling of staff. Many of the sister networks of Sardex were present at Sardex Mitzas (2018) and Sardex headquarters in the following days. Interviews with Sardex stakeholders were arranged and conducted either on the premises of stakeholders or by phone or video call. Field notes were taken by me whilst my interpreter was conducting the interviews and updated with his perspectives after completion of interviews.

Business users made up the majority of the semi-structured interviews and accompanying field notes taken. They were predominantly conducted at the business premises over both visits to Sardinia and through phone and video calls. Geographers have recognised that the physical location or 'place' of the interviews affects the nature of the discussions (Valentine, 1999; Elwood and Martin, 2000), I thought that their own business premises would be the best location to make participants more comfortable discussing their perspectives of Sardex. The publicly available Sardex Bisoo Map (Sardex Bisoo, 2021) provided the contact details and location of businesses that accepted Sardex. The sampling and recruitment strategy was structured around the geographical location and sector of the business users. There was an initial element of convenience sampling on the first visit, as businesses were chosen based on their geographical location. Business users needed to be within walking distance or public transport of our accommodation in the southern capital city of Cagliari. However, the sample became more systematic as specific sector-types were sought out. The limitation was balanced out with interviews conducted over the phone and video call from the UK.

The aim of the second visit was to create a more representative sample through collecting data from a greater diversity of sources. I hired a car that allowed me to engage with businesses across a larger geographical space in rural and suburban areas, alongside town and city centres. The approach allowed a more systematic sampling strategy, as specific business-types were identified and targeted. I drove 570km between the northern cities and towns of Sassari, Porto Torres, Alghero, Ozieri, Nuoro and Macomer. A second feature of this approach was that I was able to also collect data away from the tourist areas of Sardinia, whereas the first visit was centred on Cagliari, a main tourist location. Alongside this, there have been previous studies that have found the different ways local currencies operate in urban versus rural locations (North, 1996; Thome, 1996). Finally, as Sardex was created in the south of the island in Serramanna, 38km from Cagliari, there may have been local cultural pride about the system. Conducting the second phase of the sample in the north of Sardinia aimed to reduce this local bias.

4.4.3. Realisation of Data Collection Strategy

The fact I was in attendance at Sardex Mitzas (2018), alongside participating onstage for one of the sessions (Sardex Mitzas International Collaboration, 2018), built trust and rapport among attendees. Interviews with staff were conducted either at or near the Sardex headquarters. Staff participated outside of their employment hours, such as on lunch breaks or commutes. Semi-structured interviews with staff followed the interview protocol, took between 30-60 minutes to complete and were in Italian. One semi-structured interview was conducted with three staff members that created an

informal ‘focus group’ allowing wider discussion (Secor, 2010), as detailed in Table 4.1. below.

Table 4.1. Staff and Stakeholder Interviews

Staff	***Stakeholders***
Director of Piemex	*Director of Charity*
Director of Venetex	*Director of Social Pay*
Director of Liberex	
Liberex Staff Member	
Research and Development Assistant	
Sardex Staff Focus Group	
Sardex Staff Member	

The convenience sampling strategy with business users involved entering their business premises, building rapport through explanation of the research and conducting short semi-structured interviews (Longhurst, 2003). Business users were initially a little sceptical of me as a researcher and unsure about participating within the study. My interpreter was required to quickly build rapport with the business users, sometimes spending 5-10 minutes in initial discussion explaining the research. The main reservation from business users was the belief that I was an employee of Sardex. Once my interpreter had confirmed that I was from the University of Birmingham, they were then happy to participate. Potentially this reflected a notion of “appropriate distance” between myself and the subject, reflecting a balance of intimacy of being within their business premises and distance, not speaking their language (Pile, 2010: 493). It potentially allowed the business users to feel more comfortable sharing their ‘stories’ of the local currency, as they felt that the distance of me as a researcher provided confidence that their views would not be publicly shared. The business users interviewed remotely were first contacted by email and a date for a phone call was

arranged. These interviews produced significantly less data, as interviewees were reluctant to share significant details. In this situation there was potentially too much ‘distance’ and rapport could not be created through the intimacy of being within their premises (Pile, 2010).

The business user interviews were 15-30 minutes and were all conducted in Italian. Each of the interviews was recorded, unless the business user requested otherwise, and consent forms were completed. When an interviewee requested not to be recorded, my interpreter provided me an answer in English after every question and it was written within my field diary. The process of acquiring consent allowed me to ensure the business user fully understood their role within the research, allowing me to manage ethical considerations (Winchester, 1996). I made observations whilst the interview was being conducted (Rhoads and Wilson, 2010): premises type, nature of products and services and profile of customers. Observations were recorded within my field diary and updated after each interview with the insights of my interpreter. These were written up each evening that formed my overall research diary (Punch, 2012). The walk between the locations alongside the time within the premises itself was also considered the field (Hein et al, 2008; Evans and Jones, 2011). Observations were included about the location of business premises and some public marketing materials of Sardex. Over the period of data collection, I interviewed the following business types shown in Table 4.2. below.

Table 4.2. Interviews with business-users by sector

Business Sector	Number
Agriculture	2
Bar / Restaurant / Cafe	12
Construction	10
Personal Services	12
Production / Manufacturing	1
Retail - Food	8
Retail - Non Food	32
Tourism	2

I interviewed six Sardex staff members and an additional three within a focus group setting. I interviewed two individuals who I considered stakeholders of the project. The total sample of business users was seventy nine, of which thirty four were recorded interviews. The business user sample represented around 2% of total Sardex businesses based on the last publicly available data in 2017. Once the interviews with staff, stakeholders and business users were complete, my translator wrote up transcripts in English. As a previous researcher of Sardex and the interpreter present in the interviews, he was aware of the potential to misunderstand the concepts being discussed by interviewees and mitigated this issue with greater explanation and analogies of concepts.

4.5. Local Currency Sector in the United Kingdom

The second section explores the methodologies used to collect data to conduct a review on the local currency sector in the United Kingdom and is the second component of the research.

4.5.1. Data Collection Design and Strategy

An initial desk-based study was conducted to understand the type and current situation of local currencies within the UK (Annex 01). I identified upcoming events and engaged the then sector body the Guild of Independent Currencies (2017). I contacted the sector body LETS Link UK (2021) that represented Local Exchange Trading Systems (LETS) to inquire about schemes that specifically support small businesses. I identified UK corporate barter networks by cross-referencing previous academic articles with Companies House (2021). The sector body for commercial barter networks, the International Reciprocal Trade Association (2021), was reviewed for UK schemes. Finally, I identified sector experts through snowballing techniques (Noy, 2008) and contacted them by email.

Three semi-structured interview protocols were developed before entering the field. I aimed to understand the experiences of three distinct groups: local currencies, commercial barter networks and sector experts. The interview protocols for local currencies and commercial barter networks included questions on current operation of their schemes, their ability to offer credit within their currencies and regional development objectives. I identified four sector events, three that I was able to attend, which enabled me to conduct field observations and build rapport among schemes

and experts. Field observations were written in my field diary and included information on: date and time, location, topics, persons and secondary sources such as public documents. I conducted analysis of websites and publicly available documents to establish whether credit was available through these schemes.

To ensure ethical implications were managed, scheme managers and sector experts were required to provide written consent for their participation. Due to the limited number of local currency schemes operational within the UK, participants were made aware that their contribution may be obvious to experienced readers and that anonymisation may not be effective. All ethical considerations were reviewed and processes approved by the University of Birmingham prior to entering the field.

4.5.2. Sampling and Recruitment Strategy

The fieldwork took place over the period of 19/07/2017-08/03/2019 and included three visits to sector conferences, review of videos of another sector conference, a visit to a major local currency scheme and a series of phone and video calls to schemes and experts. The desk-based study has identified the current local currency schemes and corporate barter networks within the UK which is displayed in Table 4.3 and Table 4.4. below.

Table 4.3. Desk-based Study of UK Local Currencies Offering Businesses Credit

Name	Location	Status	Credit Offered?
Birmingham Pound	*Birmingham*	*Did not form*	*No*
Bristol Pound	*Bristol, UK*	*Operational*	*Yes*

Brixton Pound	*Brixton, London*	*Operational*	*No*
Colu Belfast Coin	*Belfast*	*Initial scheme*	*No*
Colu East London Pound	*London*	*Pilot Project in 2017-2018 - discontinued in current form*	*No*
Colu Liverpool Pound	*Liverpool*	*Pilot Project in 2017-2018 - discontinued in current form*	*No*
Exeter Pound	*Exeter, Deven*	*Closed in 2018*	*No*
Hullcoin	*Hull, Yorkshire*	*Operational*	*No*
Kingston Pound	*Kingston*	*Operational*	*No*
Lake District Pound	*Lake District*	*Closed in 2020*	*No*
Lewes Pound	*Lewes*	*Operational*	*No*
Open Credit Network	*London, UK*	*Startup*	*Yes*
Prospects	*Bristol, UK*	*Did not form*	*Yes*
Stroud Pound	*Stroud, Gloucestershire*	*Closed in 2016*	*No*
Totnes Pound	*Totnes, Dorset*	*Closed in 2019*	*No*

Table 4.4. Desk-based study of UK Commercial Barter Networks

Name	**Location**	**Status**	**Credit Offered?**
Active International	*UK and world wide*	*Featured in Healey (1996), Operational*	Yes
Bartercard	*UK and world wide (Australian Franchise)*	*Operational*	*Yes*
Business Advantage Ltd	*Cheltenham*	*Featured in Healey (1996), no current information could be found*	Presumably
BBX	*UK and world wide (Australian Franchise)*	*Operational*	*Yes*
Capital Barter Corporation	*London*	*Featured in Healey (1996), closed in 2005*	Presumably

Eurotrade Business Barter Network	*Newcastle*	*Featured in Healey (1996), no current information could be found*	Presumably
ICON Inc	*UK and world wide (USA franchise)*	*Featured in Healey (1996), no current information could be found*	Presumably
TBEx	*Aberdeen and USA*	*Operational*	*Yes*
The Bartering Company	*Scotland*	*Featured in Healey (1996), no current information could be found*	Presumably
The Bartering Company Ltd	*London*	*Featured in Healey (1996), no current information could be found*	Presumably
The London Trade Exchange	*London*	*Featured in Healey (1996), no current information could be found*	Presumably
Tradewell Inc	*UK and world wide (USA franchise)*	*Featured in Healey (1996), no current information could be found*	Presumably
Yewtrade	*London, UK wide*	*Operational*	*Yes*

The first conference: the Guild of Independent Currencies Event (2016) in Liverpool, England, had taken place before the beginning of my PhD research. I had been invited under the capacity of the Birmingham Pound, but I had not been able to attend. Videos of each of the sessions, written notes of the sessions and information about attendees were available online (Independent Money Alliance, 2021). The other three events I did attend and engaged with a series of local currency schemes, built rapport within the sector and made observations, as detailed in Table 4.5.

Table 4.5. UK Local Currency Sector Events

Organiser	Location	Date(s)
Guild of Independent Currencies	Liverpool, England	22/04/2016
Alliance of Independent Monies	London, England	19/07/2017
Alliance of Independent Monies	Glasgow, Scotland	19/10/2017-20/10/2017
Nesta Innovation Agency	London, England	08/03/2019

I was specifically interested in the development of credit-based complementary local currencies that could offer credit to businesses. Bristol Pound, the largest UK local currency, had two potentially interesting schemes: ‘Prospects’ a B2B mutual credit system that would have been structured similar to Sardex and for legal reasons a separate trading structure, and then a Bristol Pound business loans initiative. I had previously built rapport with prominent individuals within the Bristol Pound. One of the organisers of the Glasgow Conference had recently left the Bristol Pound and I secured an interview with the individual. Two other current prominent individuals at the currency also were happy to have an interview.

At the Nesta Event (2019) I developed a relationship with the director of the Totnes Pound who announced they were closing their scheme. He indicated that he believed a LETS scheme that included small businesses was an area for exploration of the Totnes Pound. This was in response to local entrepreneurial support initiatives that indicated lack of credit as a barrier to startup growth in the town. At this stage I believed that the Totnes Pound would offer relevant insights into my inquiry, as they were the first local pound scheme in the UK and had an interest in credit. I therefore included Totnes Pound within the research. Through my personal networks I had been introduced to the Open Credit Network (2021), a cooperative scheme based in London

hoping to apply a B2B mutual credit system. They were pre-launch when I first met them in late-2018. They were not strictly based within a defined local space, but as an early stage scheme this would be less of a concern for the research. I secured interviews with two of the three cofounders to gain insights into the development of the scheme.

Many of the commercial barter networks were defunct and the remaining networks had operations that were either national or international scale. Although previous local currency studies had excluded commercial barter networks due to the scale they operated at, I included UK-based networks.

The commercial barter networks were structured as B2B mutual credit systems, but were not restricted within geographical space. Although the dataset was limited, I did think inclusion within the research provides a fuller dataset. Due to the low number of active complementary local currency schemes using a credit form of money within the UK, I engaged with industry experts and stakeholders. A recent paper on the Bristol Pound had used a similar methodology (Marshall and O'Neill, 2018), where experts were interviewed alongside users of the local currency. Due to the development of credit-based complementary local currencies being in their infancy in the UK, interviews with sector experts allowed an understanding of the broader developments. I included a question about the commercial barter networks in an attempt to fully understand their place within the sector. I used personal networks, alongside the connections that I had obtained through the Nesta Event (2019) and snowballing techniques to reach out to other sector experts (Streeton et al, 2004). The subsequent semi-structured interviews were conducted over video conferencing software (Sedgwick & Spiers, 2009).

4.5.3. Realisation of Data Collection Strategy

Over the period of my data collection I reviewed the notes and videos of one event and attended three sector events. They provided an opportunity to conduct observations of the local currency sector and understand its current developments. I collected field notes in my field diary, alongside obtaining documents as secondary sources of information. The attendees to the different conferences are detailed in the four tables below.

Table 4.6. Guild of Independent Currencies - Liverpool - Videos/Notes Online

Currency Schemes	Sector Stakeholders
Birmingham Pound, Bristol Pound, Brixton Pound, Hullcoin, Prospects, Spice, Scot Pound.	*Sector academics and researchers, Community Forge (technology provider), Social Trade Organisation (technology provider)*

Table 4.7. Independent Money Alliance - London - 2 hours - 19th July 2017

Currency Schemes	Sector Stakeholders
Bristol Pound, Brixton Pound, Exeter Pound, Kingston Pound, Lake District Pound.	*London School of Economics, New Economics Foundation, Positive Money*

Table 4.8. Independent Money Alliance - Money, Power & People - Glasgow - 2 days - 19-20th October

Currency Schemes	Sector Stakeholders
Birmingham Pound, Bristol Pound, Brixton Pound, Exeter Pound, Lake District Pound Liverpool Pound, Scotcoin (formerly Scot Pound), Scotcoin, Tempo (formerly Spice)	*Scottish Green Party (political organisation), Financial Journalist, Positive Money (campaigner), New Economics Foundation (thinktank), The Finance Innovation Lab (startup support), Royal Society of Arts, Civilised Bank*

Table 4.9. Nesta Event Attendees Participant Observation - London - 4 hours - 8th March 2019

Currency Schemes	Sector Stakeholders
Bristol Pound, Brixton Pound, Credex, Exeter	*Ampersand (technology provider), Co-operatives*

Pound, Hoe Street Central Bank (arts project), Kingston Pound, Lake District Pound, Lewes Pound, Money for All CIC (not clear), Open Credit Network, Totnes Pound, Tempo (national time bank).	*UK, Community Forge (technology provider), Deutsche Bank, Finance Innovation Lab (startup support), Friends Provident Foundation (funder), Paybase (technology provider) and Positive Money (campaigner).*

The observations and documents collected at the events allowed me to triangulate the data collected as part of the desk-based study to form a review of the sector. I established that the majority of the schemes in attendance were pursuing a Convertible Local Currency (CLC) model, many in partnership with the Bristol Pound. The smaller schemes only had paper notes that could be printed and circulated without any legal ramifications. Brixton, Bristol and Totnes Pounds had developed the Pay by Text offer which required them to meet the financial regulation Payment Services Directive 2 (PSD2) (2021). Whilst developing the Birmingham Pound, we had been offered a package from Bristol Pound, which would have included them providing the technology platform from the Social Trade Organisation, Cyclos, alongside compliance services with their arrangement at the Bristol Credit Union. Although Liverpool Pound had their own payment platform as they were part of the Israeli financial technology firm Colu, they too were operating a similar model.

Engagements with the Bristol Pound indicated the development of a small business loans initiative and that they had previously developed a B2B mutual credit system termed: Prospects. Totnes Pound (2021), the first Convertible Local Currency in the UK announced at the Nesta Event (2019) that they were ceasing trading activities, citing the limitations of the model. The cofounder believed that providing credit was a service that would be useful in their town and would be exploring a Local Exchange Trading System (LETS). Finally, Open Credit Network had taken direct inspiration from

Sardex and WIR. They were in a startup phase, but did not state they were restricting the scheme within a specific local space, were structured as a cooperative and shared similar values to the local currency sector. They therefore were considered under the UK local currency section of this research. The interviews are outlined in Table 4.10. below. Although there were multiple and extensive engagements with the following schemes: Liverpool Pound, Lake District Pound (2021), Exeter Pound (2021), Scotcoin (2021), Kingston Pound (2021) and Lewes Pound (2021), these were not contacted for an interview. None of the schemes intended to offer credit within their local currencies and therefore were not of interest for this research. Engagements with these schemes were recorded as observations in the field diary.

Table 4.10. Interviews Conducted with UK Local Currency Schemes

Scheme	**Interviewee Position**
Bristol Pound, Prospects	*Current Chair*
Bristol Pound	*Managing Director*
Bristol Pound, Prospects	*Ex-Managing Director*
Open Credit Network	*Cofounder*
Open Credit Network	*Cofounder*
Totnes Pound	*Managing Director*

The desk-based study of the UK commercial barter networks established that there were five that were currently in operation. Active International Ltd which was featured in Healey (1996) and was apparently still operational, did not respond to multiple email requests for interviews. I also contacted the UK branch of Bartercard (2021), the world's largest commercial barter network, through multiple emails and a phone call, but they too ignored my requests. Through my personal networks I was able to identify

three previous users of Bartercard within Birmingham and I conducted recorded interviews. I contacted BBX (2021) and the UK Managing Director agreed to have a recorded interview. Yewtrade (2021) and TBEx (2021) were also contacted for an interview, both of the Managing Directors agreed to a phone interview but did not want it to be recorded. They were happy for me to take notes, which were included in my field diary. These interviews are detailed in Table 4.11. below.

Table 4.11. Interviews Conducted with UK Commercial Barter Networks

Scheme	Position
Bartercard	*3x Users*
BBX	*Managing Director*
TBEx	*Managing Director*
YewTrade	*Managing Director*

Due to the limited number of active relevant schemes within the complementary local currency sector, I contacted experts for their insights into the development of credit-based local currencies. The experts were either located through the sector events, through my personal networks or through snowballing. All of the interviews were conducted by phone or video call and recorded and they are detailed in Table 4.12. below.

Table 4.12. Interviews Conducted with UK Local Currency and Finance Experts

Role	Organisation	Background
Complementary Currency Expert	*Community Forge*	*Provides technology and processes to credit-based community currencies in Germany and Switzerland, runs*

		MOOC on alternative currencies with University of Cumbria and proposed the Credit Commons white paper on a network of mutual credit systems
Complementary Currencies Project Lead	*New Economics Foundation*	*Supported individual currency schemes across the country and participated within the currency scheme*
Doctoral-level expert on monetary theory and local currencies	*Freelance Consultant*	*Previously worked at the New Economics Foundation on local currencies*
Doctoral-level expert and a Director of startup regional cooperative bank	*South West and Somerset Mutual*	*Previously managed international project on local currencies for New Economic Foundation and now forming a cooperative regional bank in which he has considered including mutual credit*
Expert Advisor to Bristol Pound, Prospects and other local currencies	*Freelance Consultant*	*Part of the initial working groups on the Bristol Pound and shaped Prospects plans*
Small Business Finance Expert	*Cooperatives UK*	*Initially set up the Community Development Finance Initiatives (CDFIs) in the UK, supported the development of UK government policy over many decades, strongly interested in the WIR Bank*

4.6. Development of a Credit-Based Local Currency in Birmingham, UK

The final section explores the application of Participatory Action Research (PAR) techniques that allowed the collection of data on the development of a Business-to-Business (B2B) mutual credit system in Birmingham, UK in which I was a cofounder and is the third component of the research. The scheme aimed to address the issue of small business access to finance within the city through the application of heterodox

economic and geographical theories of money and credit within a practical project working alongside small businesses.

4.6.1. Data Collection Design and Strategy

The study of the development of a credit-based complementary local currency focused on the day-to-day operations and interactions that supported the development of the scheme. It aimed to understand how a credit-based complementary local currency could develop in the UK and potential contributions to regional development. My Master's thesis centred on my involvement with the Birmingham Pound. Once the scheme ceased to exist in December 2018, I and others became interested in developing a B2B mutual credit system inspired by Sardex. Before confirming my data collection strategy, I discussed with senior staff at the University of Birmingham on the possibility of including insights from my role within my research. I believed I could contribute first-hand experience on the development of a credit-based complementary local currency within the UK which may prove useful to other practitioners and policymakers.

McIntrye (2000:3) recognised a research space outside of the academy “where researchers and participants can reshape our understandings”. Hamnett (2003: 3) felt that “for some, contemporary human geography has become an area for theoretical play”. Summarised as “fiddling whilst Rome burns” (2003: 1), he worried that a worry about extreme social constructivist interpretations of the positionality of academics was restricting the ability of researchers to support practical outcomes. Hamnett (2003) hoped that the then recent development of the ESRC 1+3 PhD training programme that funded this research may respond directly to societal needs.

Participatory Action Research (PAR) techniques have been developed to allow researchers to work alongside research participants to apply their research to meet broader societal objectives (Cameron and Gibson, 2005; Pain and Kindon, 2007). The aim is to disseminate knowledge created within academia to help address issues experienced by individuals and groups within the world.

Gregory (2012) used his insider knowledge of time banks gained from research to directly form a time bank with the Welsh National Health Service. The research allowed the application of theoretical concepts related to time banks within a practical setting to support community outcomes. Ethnography, developed from anthropology (Malinowski, 1922), is based on recording observations through the lived experiences of the researcher (Jacobs, 1993; Herbert, 2000; Lees, 2003). Graebar's (2012) study of social currencies included an ethnographic study of indigenous islanders in Madagascar. Within human geography, ethnography has been described as an underused data collection methodology, yet an approach that can work very well to triangulate observations from other mixed-methodologies (Lees, 2003). Furthermore, it "addresses the richness and complexity of human life and gets us closer to understanding the ways people interpret and experience the world" (2003: 110).

Ethnographic techniques were used to study the development of a credit-based scheme within Birmingham. It recognised that the insights gained through understanding academic literature could have a positive contribution to the scheme. My day-to-day experiences developing the scheme and interacting with other schemes could yield significant insights in how to develop a credit-based complementary local currency and its contributions to regional development. My role within the scheme required me to attend and speak at regional events and have meetings with public, private and third sector organisations. My dual role as a researcher and practitioner

would allow a co-production of data between my research and practical scheme (Gregory, 2012). Before beginning data collection I designed a strategy that would be based around the use of a field diary. It would be used to make notes of interactions and developments within the field that can then be analysed at a later date (Punch, 2012). Further information was then identified and used to triangulate observations, including documents and promotional materials that were collected and created by myself whilst operating the local currency.

I developed a process to take into account the relatively informal nature of the data collection strategy. Between the dates of 11/10/2017-19/08/2019 I was essentially perpetually within the field. To ensure ethical implications were managed, I introduced myself to all individuals and organisations as both a cofounder of the complementary local currency scheme and a PhD researcher. I had conversations of the implications of my research with my other cofounders to ensure they understood the process and the benefits that it could bring to the local currency. All individuals and organisations were verbally informed that I was conducting research into local currencies and the small business financial landscape within the region. Where specific factors such as company or organisation could be used as identifying information, these too have been removed for anonymisation. When an individual made a significant input to my research, they were later contacted to confirm expressed permission and ensure that I correctly communicated their perspectives within the research. All ethical considerations were reviewed and processes approved by the University of Birmingham prior to entering the field.

4.6.2. Realisation of Data Collection Strategy

The development of the credit-based local currency is considered to be the period between 11/10/2017 and 19/08/2020. The first date is when the “WestMidEx” proposition was submitted to the Birmingham Pound Steering Committee and is featured within publicly available meeting minutes from Localise West Midlands (2021). The period provides a substantial time frame in which the local currency was developed and launched, resulting in engagements with a wide range of individuals and organisations. The period after 19/08/2019 is when the company was renamed as Parity Network Ltd and began a new strategy to engage with companies at a hyper-local level in the Jewellery Quarter, Birmingham. A smaller study was undertaken by a third party and funded through Parity Network Ltd of which insights from this initiative are included. These three distinct stages of the research each have a devoted section within Chapter 8 to outline the development of the B2B mutual credit system. Although Parity Network Ltd eventually ceased operations in early-2021, this period was outside of the scope of this research.

The data collection methodology employed for my research was structured around my daily operations and interactions. I maintained a field diary of my experiences, writing notable interactions and observations, sometimes many times a day. I triangulated these experiences with a range of other resources, including: documents, presentations and websites. All of the observations made, alongside the supporting materials, were recorded within my field diary, which had the below structure. When I reference my field diary in the results chapter I use the example structure “Diary Entry: Y2-185 - 15/04/2018” where Y is the year of study when the entry was made, 185 is the entry number and the date is when the diary entry was made. An outline of the structure is shown in Figure 4.1. below.

Figure 4.1. Field Diary Structure

#	Information	Diary Entry
#	**Date:** **Location:** **Topic(s):** **Person(s):** **Source(s):**	

My role with the scheme resulted in me attending industry and business events within the city to engage with stakeholders and potential users of the platform. At these events I collected resources that included promotional emails, documents and other third party sources of information about the organisations and events, allowing me to triangulate observations. Alongside attending events, I also had direct engagements with public, private and third sector organisations to discuss the development of the scheme. Some of these organisations were approached by myself to provide funding for my commercial enterprise to develop the complementary local currency scheme in Birmingham. All the organisations were explicitly made aware of the development of a credit-based complementary local currency in the region, either through the provision of a written document or a presentation. Alongside organisations, I also directly engaged with over two hundred individual businesses to which the complementary local currency scheme was pitched.

Over this period I attended a significant number of regional events in my capacity as cofounder of the scheme. At a number of these I presented information about my research and the development of the scheme in the city. The presentations were in front of a range of public, private and third sector organisations, whose attendees included senior management. I introduced myself as both a researcher from the

University of Birmingham and a practitioner as cofounder of the scheme. During and immediately after the event I wrote my field observations within my field diary and collected supporting documentation. Table 4.13. outlines the significant regional events that were attended over the period of my data collection.

Table 4.13. Regional events attended and presented (where stated)

Regional Events
Birmingham Pound Steering Group (presented), BitBrum Conference (presented), Big Data Corridor Startup Event (presented), Sustainable Development Young Leaders Event, ART Business Loans Annual General Meeting, Midlands Environment Business Company Access to Finance Event (presented), Natwest Incubator (presented), Black Country Chamber of Commerce Breakfast Event, Family Business Practice Event - Kidderminister, NatWest Birmingham Technology Awards, USE-IT Annual Conference, ART Business Loans Spring Networking Event, NESTA Future of Local Currencies Event, Credex Launch Event (presented), Family Business Practice Event - Solihull, Tech Wednesday - Innovation Birmingham, PlanIT Global Event, Venture Fest 2019, Connecting Cranes with Communities.

Alongside attending regional events I also engaged directly with individuals representing public, private and third sector organisations. All of the individuals I engaged were sent a two page explainer document of my research and my role within the scheme (Annex 04 & Annex 05). All of the following organisations I met directly with were predominantly face-to-face with some discussions over the telephone, they are listed in Table 4.14 below.

Table 4.14. Regional public, private and third sector organisations engaged

Organisations
InnovateUK, Black Country Growth Hub, BizzInn (University of Birmingham), Coventry University Business in Society Institute, Koina and Moneygrid, ART Business Loans, Innovation Birmingham, Sardex, Barrow Cadbury Trust, Hometown Plus and Countercoin, Financial Innovation Lab, Shackleton Foundation, Unity Trust Bank, New Economics Foundation, Growth Hub at Aston University, Energy Catapult, Midlands Environment Business Company, University of Birmingham, Make UK, CREME, REDI, iSE, Blue Sky Capital, European Cultural Foundation, Coventry

University Social Enterprise (CUSE), Innovation Engine, West Midlands Combined Authority Social Economy Taskforce, Colu, Black Country Chamber of Commerce, Big Society Capital, Open Credit Network, West Midlands Combined Authority, USE-IT, Financial Conduct Authority Innovation Support Programme, Finance4Business, NatWest Bank, Bartercard, Friends Provident Foundation, BCRS, Coventry and Warwickshire Reinvestment Trust, BSEEN, Barclays Eaglelabs, The Business Support Organisation, HS2 Ltd.

Over the period of the focus of this ethnographic study, I wrote up 64871 words over 185 diary entries. The entries included engagements with significant stakeholders within the West Midlands from finance, community development, academia, local government and business. These entries were separate to the 33432 words and 105 diary entries that were made in the field in Sardinia. I attended nineteen regional events and engaged with forty six public, private and third sector organisations. Alongside these I engaged directly with over two hundred individual business entities; ranging from micro one-person self-employed structures turning over around £35,000, through to larger limited businesses with twenty staff turning over in excess of £2million.

The engagements allowed me to outline the background of the model, the potential benefits of participating and understanding their perspectives of the local currency. Out of this sample ten businesses were strongly interested, resulting in five sign ups to the complementary local currency. Networking events were a chance to pitch the business idea, alongside explaining the theoretical nature of the scheme and the research being conducted. The complementary local currency also organised a soft launch event in April 2019 in which thirty individuals attended. Finally, a market research study was conducted by a third party with the twelve users of the Parity

complementary local currency in May 2020, the insights from these interview transcripts were considered within this research.

We generated a significant amount of internal documents and papers that provide a further source of data to analyse the development of the scheme. Due to my role as Director and owner of the scheme, I had unfettered access to all internal documents. The Parity team was engaged on what was used and perspectives drawn from the development, to ensure that they were consenting to the use of data that they were involved in generating.

4.7. Data Analysis

The data collected across the three research components underwent analysis. Yeung (1997) argues that research within critical realism “is neither purely deductive, nor purely inductive. It operates rather simultaneously in a deductive-inductive dialectic”. Once the interview transcripts were available in English, I first conducted deductive thematic analysis. I started with a set of flexible, predefined concepts which were predominantly drawn from understandings of the existing literature on money, credit, sustainability, regional development and complementary local currencies. These were complemented with my own personal experiences of participating within the development of a Birmingham local currency. It allowed me to initially arrive at a set of analytical themes that were then used as a coding framework.

Themes with a smaller number of references were grouped into larger themes that provided a basis for the analysis. Research participants would not refer to theoretical concepts, I therefore considered how these may be practically represented and understood within the discussions. For instance, some of the participants discussed

the notion of barter, whereas from a theoretical perspective, they were not describing a process of bartering, but the exchange of goods and services for a credit-based local currency. Finally, I considered how these practical representations were also physically demonstrated, through artefacts such as technology: i.e. use of the Sardex mobile application and marketing materials. I then applied a greater level of inductive reasoning, as participants were describing experiences and processes that I was not aware of prior to the research. The need to consider social relationships and trust required me to take an inductive approach to identify useful representations and apply these to theoretical concepts. It allowed me to arrive at a second set of analytical themes that complemented the initial coding framework.

This dual approach applied the concepts of both etic coding: considering what the data was informing me about the topic, and emic coding, how the topic area related to the data (Darling, 2016). Punnett et al (2017: 4) outlined, “there are ongoing debates over the value of emic versus etic research...the discussion often focuses on which is the ‘better’ approach. We contend that such arguments are misleading, because both approaches when used together are ‘better’ than when used individually, especially in under-researched areas”. The initial process of deductively identifying concepts through review of transcripts and field notes could be described as an etic approach. I was applying theoretical concepts as an observer when considering the data provided by participants. However, as my questions were largely semi-structured and I inquired about issues such as social relationships and their perspectives of local currencies, there was an element of emic coding within the analysis. Participants often described their own perspectives of concepts that I had little knowledge of prior to the data collection, which placed an emphasis on their viewpoints as participants. The final

set of combined concepts and how I believed they were practically represented are in Table 4.15. below.

Table 4.15. Theoretical concepts and practical representations for each of the research themes

Money and Credit
Concepts; monetary circuit theory, Zelizer circuits, exogenous-endogenous monetary dichotomy, monetary discourses, money as a social relationship, origins of money and barter, debtor-creditor relationships, dominant currencies, accountancy and finance. Practical Representations; networks, circuits, connections, allocation for specific purchases, source of local currency, money as an object, perceived "backing", social relationships/trust among users, barter, statements of whom credit was owed, financial institutions, transactions with euros, cash flow and accounts, expenses, turnover.
Regional Development and Themes of Sustainability
Concepts; economic development, small businesses, entrepreneurship, community, multistakeholder partnerships, ownership/governance, climate change, resource scarcity, localisation of economic activity, food miles, environmental impacts of products and services, resilience. Practical Representations; local supply chains, independently-owned businesses, charities and foundations, public sector partnerships, energy efficiency, renewable energy, investments in low carbon technologies, local suppliers.
Local Currency
Concepts; B2B mutual credit systems, cryptocurrencies. Practical Representations; Sardex: service, circuit(s), products, employees, marketing, specific issues and other circuit users, friendships and relationships, trust, Bitcoin, mobile application, web application, current balance, recent transactions, purchases, products and services available in the circuit.

These concepts and practical representations were not independent of one another, but were overlapping and interdependent. My field diary notes were also written up and they too were coded and analysed using the same analytical frameworks. I

conducted coding and analysis with the computer package NVivo 12, allowing me to identify these themes and collate other relevant information. The interview transcripts and field observations were analysed separately with the same concepts and practical representations. When writing up this thesis I was then able to refer to transcripts which I term “Interview” in the results chapters, alongside the field observations, which I term “Observations”. The purpose of these thematic and analytical themes was to provide a basis on which insights into the qualitative data collected could be made, to understand the stories of my participants within the framework of the wider theory. It allowed me to understand the direct perspectives of my participants: why they used local currencies, how it benefited them, their understandings of money and credit, but also it allowed me to consider the insights in relation to wider theoretical concepts: the ontological basis of money and credit and regional development. The concepts and practical representations were under constant review throughout the analysis, including allowing new themes to develop.

4.8. Reflections and Limitations

The majority of interviews done in Sardinia were through my translator so I could not know for sure the responses. Attendance at the Sardex headquarters felt intrusive and interviews with staff were informal and outside of their working hours. My interpreter assured me that it was a cultural dimension for my feelings of intrusiveness. This informal positionality dynamic with Sardex did have a positive effect on the interviews with business users. Only one was arranged by Sardex, the others were obtained by myself using the Bisoo Map (Sardex Bisoo, 2021). An overdependence on its map did

result in a majority of business-to-consumer participants; retailers, service providers, etc, which led to a degree of data saturation.

There was also an overrepresentation of female-owned businesses within the sample compared to Italian averages (Statista, 2019), that might have been due to the high percentage of retailers and service-based businesses. At the time of the research, the amount of businesses visible on the Bisoo Map was around a fifth of the total number in the circuit. Through engaging with firms about their purchases, it was clear there was a set of companies inaccessible using this sampling approach. Another limitation was the short interviews with business users. I found that rapport was still being built throughout the sessions, which could have led to greater insights. Limited resources meant that I could only visit Sardinia for twelve days in total. A better financed study may gain more insights spending a greater length of time in the field. Due to the level of data saturation from recruiting businesses using the Bisoo Map, an additional recruitment strategy may be needed for longer periods of fieldwork.

The data collection in the UK relied on sector conferences to identify connections, build rapport and trust among participants. These conferences were all organised in partnership with the Bristol Pound, which as of 2020 was no longer operational. I also benefited from contributing to the development of the Birmingham Pound, as it allowed me to demonstrate my commitment to the sector and created trust among my research participants. It may be something that could be difficult to replicate. A major limitation within the research was around the inclusion of commercial barter networks. As described in the literature review, there was very little recognition of these ‘private currencies’ within the field, and they are often considered separate to the local currency movement. These models became interesting to my research because they applied a similar B2B mutual credit system model of currency. It was a relatively late

decision to include these models within the research programme. Future research may aim to include these models when considering the impacts of alternative currencies. The data collection strategy applied to Sardex: identifying users of the currency through the commercial barter network's map or marketing materials, could also provide valuable insights about these schemes.

The inclusion of the participatory action research and ethnographic techniques was a relatively late decision. It was only when I had taken an active decision to develop a Sardex-type B2B mutual credit system that it became relevant to my research. If I had initially known that participatory action research techniques would be a significant part of my research and data collection, I may have made different decisions at an earlier stage. The field notes collected may have been more comprehensive and systematic when considering attended meetings and events. My role within this scheme also had an effect on the research, especially as it is a for-profit initiative. I found it difficult to identify literature from researchers who had been in a similar position from within my field. The methodology is difficult to replicate, as the scheme developed organically from the Birmingham Pound.

Finally, a major issue for myself in this data collection strategy was where the field ended, both spatially and temporally. I was essentially in the field the entire time, as I am legally responsible for the company. I had a changing time frame based on initial outcomes of the research, initially believing that the findings on Credex Network Ltd may have been the focus of the research. It was only in late-2020 did I decide to include the initial findings of Parity Network Ltd after we had some successes with the scheme. This lack of clarity of when the research was going to end may have affected the outcome of the research compared to a more traditional approach with a set timeframe.

4.9. Concluding Remarks

The chapter has discussed, outlined and justified the research design and methodologies chosen. Due to my role within a startup scheme hoping to replicate the successes of Sardex, my positionality through reflexivity was considered to understand my effect on the generation of knowledge. The research uses predominantly qualitative data collection methodologies. The following four chapters analyses my data and provides the results obtained through the investigation.

5. UNDERSTANDING HOW THE SARDEX COMPLEMENTARY LOCAL CURRENCY ENDOGENOUSLY CREATES CREDIT

The aim of the first two empirical chapters to outline a case study of Sardex, a functioning endogenously-created, credit-based complementary local currency in Sardinia, Italy. The empirical first chapter frames the discussion of Sardex through the application of heterodox and geographical theories of money and credit. The chapter addresses the first research objective: to understand how the local currency is created in response to demand for credit and is used by small businesses. The second empirical chapter of the case study will then specifically explore the three sustainability themes in the context of regional development: economic, social and environmental.

5.1. The Development of a Credit-Based Local Currency

The first section considers the origins, expansion and future of Sardex.

5.1.1. The Origins of Sardex

The cofounders developed the Sardex Business-to-Business (B2B) mutual credit system in 2009. It allows a local currency to be endogenously-created as credit within a closed circuit, between individuals and businesses. Past experience of this type of model has been predominantly peer-to-peer: Local Exchange Trading Systems (LETS) (Aldridge et at; 2001). The difference between Sardex and LETS is the target audience. LETS are used by individuals, whereas Sardex is targeted towards small

businesses. Cooper (2013) criticised the ability of LETS to implement formal operational procedures limiting their ability to scale, an issue Sardex appears to have overcome.

> *"We have really created an ecosystem for businesses in a very small area to exchange and interact."*
>
> *(Visit 01 - Stakeholder 08 - Interview"*

Businesses join Sardex and are allocated a balance within the local currency of 0 and a credit facility similar to an overdraft. If two businesses exchange goods worth €100, they can both start with a balance of 0. The business making the purchase would use €100 worth of credit, resulting in their balance being debited to -100. The selling business would receive the credit as payment, resulting in their balance being credited to +100. This balance is not euros, it is a local currency equal to euros, termed 'SRD'. Euros is used as a unit of account, similar to how early civilisations used a pound of wheat or barley grain (Keynes, 1984; Weale, 2000). The local currency is not 'backed' by euros, the value is agreed upon by the circuit members. It reflects descriptions of commercial barter networks outlined by Healey (1996: 3), "a club of members who have agreed to trade with each other using 'private money' i.e. trade credits". There are no 'hard cash reserves' such as Marx (1872) believed needed to exist before credit could be created (Morris, 1967) or Harvey (2006) believed needed to ensure the quality of money in circulation. Furthermore, it rejects the 'loanable funds theory' in which monetarists believed initial resources were needed before credit extended (Fontana, 2003).

The Sardex local currency maintains its value in a similar way to chartalist perspectives of the monetary system (Knapp, 1924; Keynes, 1930). Sardex 'charters' the value within its Terms and Conditions and businesses agree to accept SRD as payment. Economic geographers highlight a need for states to validate money in circulation in the economy (Lee, 1999; Harvey, 2006), in the case of this complementary local currency, Sardex is the ultimate validator through its central position in the circuit. This enshrines Sardex with a significant amount of power within the circuit, which is reflective of the role of nation-states within their own monetary circuits (Agnew, 2005; 2010). Although the recent focus within the local currency sector is on digitally-enabled currencies (Seang and Torre, 2019), a B2B mutual credit system can be managed using paper. The WIR, Switzerland, formed in 1934, relied on the exchange of paper checks for much of its history (Stodder, 2009). Sardex is a circuit of IOUs, in which participants can trade with one another without using the national currency.

> *"We make it possible for the circuit to extend credit to companies."*
>
> *(Visit 01 - Stakeholder 06 - Interview)*

Sardex creates the local currency through companies within a circuit accessing credit. It resonates with economic anthropological understandings of the origins of money (Polanyi, 1971) and specifically the analogy outlined in Graebar (2011: 46) of Joshua, Henry and Lola (pages 38-39). The approach supports the infamous description of money described by Post Keynesian economist Hyman Minsky, "everyone can create money, the problem is to get it accepted" (Minsky, 1986: 228). Sardex has a circuit where digital IOUs are created by its users and other members accept them as

payment. Keynes (1935) believed that a range of monetary structures existed allowing private parties to accept payment for debt contracts. This perspective resonates with Sardex and supports the perspective of Innes (1914: 159) in his summary of money; “credit, and credit alone, is money”. Finally, the model applied is very similar to the Bancor model proposed by Keynes (1943), where a supranational credit-based currency would be used to record debits and credits between nations (Hudson, 2010).

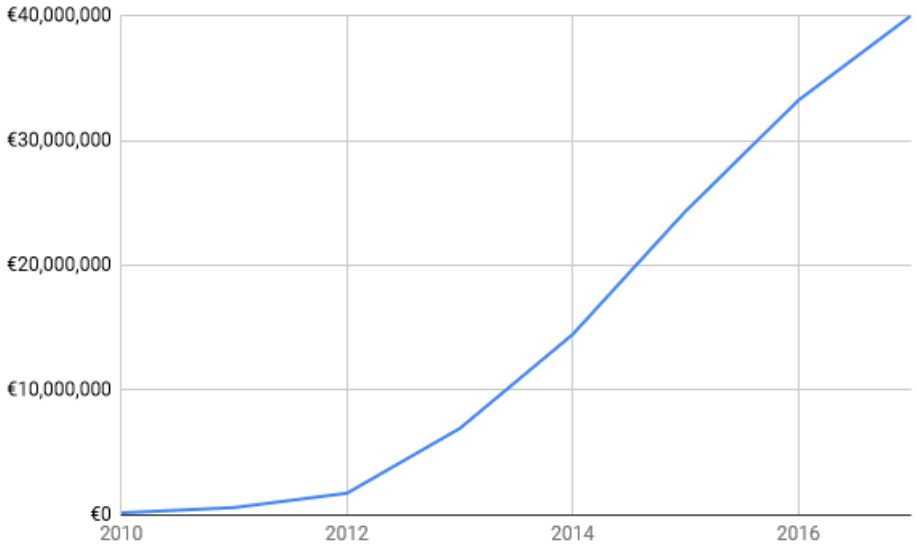
The importance of the circuit that Sardex has developed reflects notions highlighted by economic geographers that are needed to allow money to circulate within the national and global economies (Martin, 1999; Hall, 2013). Monetary circuits not only transmit economic value, but also social values, narratives and norms among a ‘community of belief’ (Leyshon and Tickell, 1994; Lee, 1999; Harvey, 2006). Sardex has created its own community of belief among the users of the local currency on the island of Sardinia. Users feel confident that if they accept the Sardex complementary local currency as payment, they can reexchange it again in the future with another Sardex user.

Sardex developed within the economic conditions of a post-crash Sardinia. According to the Europa (2020), the Gross Domestic Product (GDP) of Sardinia contracted by 6.2% in the six years from the 2008 financial crisis, reducing domestic demand and the provision of credit by local lenders. The effects of the financial crisis on Sardinia could be considered as the see-sawing capital moving away from the island (Harvey, 1981; 1985; Smith, 1982), as the previously profitable applications of speculative property lost its appeal, which was observed in other peripheral European regions. The credit facility Sardex offers provides a new source of liquidity, endogenously-created within the circuit as IOUs. Its complementary local currency does not need to be externally bought or introduced, which made it a useful tool in post-crash Sardinia.

Sardex maintains the records of the debts between the parties, similar to historical perspectives of money such as the clay tablets of ancient Mesopotamia or on tally sticks within mediaeval England (Apostolou and Crumbley, 2008). Money in Sardex is created as an IOU when a business spends and circulates like a clay tablet or tally stick. It is destroyed when a business repays its debts, similar to traders smashing tablets once debts were repaid (Ganßmann, 2012; Renger, 2012). This process is in contrast to Bristol Pound (2021) (North and Longhurst, 2013; Marshall and O'Neill, 2018) or Bitcoin (Eyal, 2017), in which users are required to initially purchase the currency using GBP or USD, indicating money exists regardless of repayment of debts. These models would have been less effective in post-crash Sardinia as a commodity-based local currency would have needed to be first purchased.

From 2009 Sardex scaled its model from one business in Serramanna, to over 2500 business users across the region of Sardinia in 2015 (Iosifidis et al, 2015). The transaction figure grew from €177,000-worth in 2010, to over €40,000,000-worth in 2017 as shown in Figure 5.1. below.

Figure 5.1. Annual volume of Euro-equivalent transactions using GDP accounting measure



2010	2011	2012	2013	2014	2015	2016	2017
€177,000	€600,000	€1,750,000	€6,939,762	€14,465,166	€24,328.806	€33,214,655	€40,000,000

The simple explanation of two companies exchanging €100 of goods within the circuit provides a context for scalability. The purchasing business has a balance of -100 SRD and therefore requires a customer to sell their goods in SRD and repay their debt. The business that made the original sale, and has spending power equal to €100 (+100 SRD), requires a supplier to make a purchase. Sardex acts as an independent broker to identify suitable businesses who want to participate. Sardex is able to act as an impartial trusted actor between the parties within this negotiation, but also holds a position of power, as the validator of the money within the circuit, a micro reproduction of the power nation-states have within national currency circuits (Ogborn, 1998; Agnew, 2010). It is beneficial to businesses on both sides of the trade: the company

selling may not have found a customer and the company buying may not have had the cash flow to purchase.

Sardex initially had a B2B focus, followed by an initiative termed Business to Employee (B2E) in 2014. B2E allows business users to take SRD for their own remuneration and purchase goods and personal services such as haircuts, food, clothing, etc. The development of this phase is more akin to the Convertible Local Currencies (CLCs) in Bristol and Brixton, with retailers accepting SRD similarly visible on high streets within Sardinia. The development of a retail circuit for business users provides the opportunity for businesses to offer SRD as remuneration to employees. It was discussed in Littera et al (2014) who stated it was the aim of the programme to broaden the user base of Sardex. The use of B2E by businesses is consensual between the firm and employees and is now a significant proportion of the transactional volume, as highlighted by one stakeholder.

> *"...some basic figures on B2E; it is about a third of B2B volume, of this third, half was towards salary payments and half towards director spending within the retail network."*
>
> *(Visit 1 - Stakeholder 08 - Observations)*

The development of the B2E retail network came at a later stage after the development of a B2B circuit. The approach contrasts to the CLCs that began with retailers and then hoped to develop B2B supply chains at a later stage (Ryan-Collins, 2011).

5.1.2. The Expansion of Sardex

The success of Sardex continues with the replication of the scheme across other Italian regions. Italy has an unequal economic geography, with a strong income disparity between the richer northern regions and the poorer southern regions (Mussida and Parisi, 2019). Economic geographers have highlighted that within national economies monetary circuits appear to shape spaces and concentrate within financial centres (Cook et al, 2007; Faulconbridge et al, 2007). In Italy this is Milan, and Sardinia is considered as a peripheral region far from its concentration of wealth. In 2017, Sardinia had a GDP per capita in Purchasing Power Standards (PPS) of €20,900 compared to the Italian average of €28,900 (Europa, 2020). The development of Sardex within an economically deprived peripheral region appears a logical step: they are providing a mechanism to continue economic activity. Sardex as a response to a reduced level of currency in circulation is a similar response to the use of commercial barter networks in Argentina (Powell, 2002; North, 2008). It would be reflective of the belief of economic geographers that considered complementary local currencies as a mechanism to address the extraction of the means of exchange to more profitable uses within financial centres, away from peripheral regions such as Sardinia (Seygang, 2000; Leyshon and Thrift, 2007).

The evidence of successes from circuits in Northern Italy suggest that these economic conditions are not essential to forming and scaling the model. Northern regions with higher GDP per capita in PPS (2017) have formed circuits, including: Venetex of Veneto (€33,500), Piemex of Piemonte (€30,700) and Liberex of Emilia Romagna (€35,300) (Europa, 2020). The below infographic shows Venetex in Veneto, with volume of transactions and number of users. These figures are higher than Sardex at a similar stage of its development, with €4million-worth of Venetex being exchanged

in the first two years of operation compared to €777,000-worth in Sardex (Iosifidis et al, 2015), as shown in Figure 5.2. below.

Figure 5.2. Infographic of users, transactions and currency velocity in Venetex, Veneto 2016-2018.



My interpreter discussed how on a visit in 2016 there was a belief among Sardex staff that each circuit would be separate, but allow the trading of surpluses. If Sardinia had a surplus of tourism-based economic capacity such as hotel rooms, this could be offered to other regions in return for surpluses in other regional circuits. The approach aimed to reduce regional economic inequalities that may result from a laissez-faire approach between the circuits, the approach would be contradictory to neoclassical

perspectives that would aim to remove these sorts of regional barriers to the flow of capital (Hadjimichalis and Hudson, 2007). It reflects an attempt to address ‘uneven development’ within economic geography perspectives of regional development (Hudson, 2007; Harvey 2010). If national circuits matched current economic flows under a laissez-faire approach to intercircuit trade, it could result in the stronger northern circuits acquiring large positive trade balances, and the southern circuits large negative balances. It would be reflective of criticisms of uneven capitalist development that would reinforce spatial economic injustices (Fainstein, 2009; Soja, 2013). It would reflect the concept that economic models of regional development often assume that poorer regions would converge with richer regions over time (Hadjimichalis and Hudson, 2007). Interviews with stakeholders highlighted the competing perspectives of a regional versus national circuit approach.

> *“[Stakeholder 09] had been previously critical of free trade across networks, as it may just replicate the imbalances currently observed within the Italian economy.”*
>
> (Visit 1 - Stakeholder 09 - Observations)

Interviews and discussions with staff and stakeholders of Sardex identified a process in which the company was beginning to join the circuits into one national circuit. They had also confirmed that a recent network in Liguria would use Sardex branding and be considered within the one national network.

> *"...as explained in Mitzas, we won't have anymore different marketplaces and every business will be visible in the four networks (Sardex, Piemex, Liberex and Sardex Liguria)"*
>
> (Visit 1 - Stakeholder 12 - Interview)

Interviews with stakeholders of the network established that there would be mechanisms in place to maximise local trade. These mechanisms were described as being more incentive-based or soft, described as "crafty" by one stakeholder. Tools to support this craft may include the brokering process or marketplace promoting local businesses. This aim reflected studies of the WIR that identified a role for its local currency in "macroeconomic stabilization" (Stodder, 2009: 93). It further confirmed studies on Sardex that considered it a stabiliser of its local economy (Mayer, 2015; Lucarelli & Gobbi, 2016).

> *"There will be just one clearing bank, but we will have anyway some tools, at the moment, crafty, that will allow us to protect the local dimension. This is fundamental."*
>
> (Visit 1 - Stakeholder 12 - Interview)

Interviews with stakeholders identified there had been issues with the development of the other circuits. Unfortunately, this type of complementary local currency is a novel and sometimes difficult concept to understand. These issues had been raised in previous studies on commercial barter networks that apply the B2B mutual credit system model (Healey, 1996; Stodder, 1998). Although there had been some issues in replicating the model, as of writing the thesis, Sardex was continuing to expand its circuits across the country. In 2020 it had completed a new €5.8million round of

investment with the publicly stated aim to grow to 50,000 users and develop further circuits outside of Italy (Unquote, 2020).

5.1.3. The Future of Sardex

Sardex has received a series of investments totalling €8.8million since its inception in 2009 (Crunchbase, 2021). Many of the stakeholders described investors as Venture Capitalists (VCs) and believed they potentially represented a contradiction with the founding idealisms of Sardex. The investors had a requirement for a financial return, termed an “exit”, but the growth of the circuit was considered by many stakeholders as an alternative to traditional capitalism (Dini & Kioupkiolis, 2014), reflective of other scholars interested in complementary local currencies (Gibson-Graham, 1996; North, 2006a). Some stakeholders believed in the cultural and political idealisms of Sardex, whereas others were more focused on the growth of its commercial operations. The dichotomy was reflective of perspectives highlighted by economic geographers of the opposing approaches to governance of complementary local currencies (Seyfang, 2001; North, 2014).

> *“...there are different views within the company. Some are more exclusivity and politically wedded to the ideological end goal of a (anarchist) and so forth. There are others in the company who are very very practical and business-orientated, who are aware of the political connotations, but don't have the time for the, how to put it, idealistic thinking.”*
>
> (Visit 1 - Stakeholder 06 - Interview)

> *"[Stakeholder 11] believed that the transition away from a local development focused approach to a more corporate approach was inevitable. He believed calls for a more social approach were unrealistic and idealistic."*
>
> (Visit 1 - Stakeholder 11 - Observations)

Another implication is VCs may hamper the ability of Sardex to adopt a democratic corporate governance structure like the cooperative WIR, Switzerland (Stodder 2016). Governance has deep-rooted perspectives within the local currency sector (Bollier and Conaty, 2015; Augustyn, 2017), with many other schemes including Bristol Pound structured as non-profit social enterprises (Ayres and Bird, 2018). On a theoretical level B2B mutual credit systems are considered as 'people-produced monies' (Douthwaite, 2000) and a challenge to the private creation of money by commercial banks (Greco, 1994). There are a series of studies that demonstrate social enterprises are more effective at supporting local and regional economic development (Oberoi et al, 2019; Haugh et al, 2020), including within complementary local currency schemes (North, 2014a; Ruddick et al, 2015). The involvement of VCs within Sardex may be considered negative by the wider complementary local currency sector, but Sardex stakeholders expressed differing views, as shown below.

> *"But my understanding is that it would be fair for [investors] to expect an exit [financial return], to feel that an exit is fairly probable, before we can afford to talk about ownership structure, and coop[erative] and other forms of legal entity."*
>
> (Visit 1 - Stakeholder 06 - Interview)

> *"[Stakeholder 11] believes that the venture capitalists are obviously affecting the ways that decision-making is being conducted within the organisation. He also believed that this was a one-way street and they have to make it work, as there is 'no step back'."*
>
> (Visit 1 - Stakeholder 11 - Observations)

The company stated at the Sardex Mitzas (2018) event that through Corporate Social Responsibility (CSR) (Cho et al, 2019), potential contradictions in investor involvement and governance could be overcome. A critical perspective could be that Sardex is using a CSR strategy to enhance its corporate reputation (Janney & Gove, 2011) and ensure that stakeholders have less issue with the fact it can create money as credit. Whether the social mission of Sardex could be balanced with the profit-motive of its VCs was a point of contention for stakeholders.

> *"...there's two extremes; one side the piece of shit capitalist, the other side the social focused ethical actor, Sardex is in the middle"*
>
> (Visit 1 - Stakeholder 11 - Observations)

The strong feelings associated with the ownership of Sardex can also be considered through perspectives of geographies of money and credit. Money is considered a practical tool to support transactions among a community of belief (Lee, 1999). A divergence of interests between VC owners of Sardex and the business users of the currency could have a negative impact on this community of belief, undermining their trust in the system. The position of power that Sardex has within the complementary local currency circuit: their ability to control the creation of money like nation-states

within their own currency regimes (Agnew, 2005; 2010), also raises the need to consider governance as the scheme scales.

The Mitzas Event (2018) was also an opportunity to promote partnerships and new services, including a public sector multistakeholder partnership called ‘Social Pay’. It allowed the paying of welfare benefits through the Sardex network considered in more detail in Chapter 6. There was a significant focus on the recent launch of two further Sardex services called ‘Sardex Bisoo (2021)’ and ‘Sardex Efficio (2021)’. Bisoo is a consumer cashback scheme that is targeted towards ethical consumers on the island of Sardinia. The model allows consumers to receive a small percentage cashback in SRD when they spend euros with Sardex members.

> *“Sardex believes there are 100,000 ethical consumers on the island that are likely to engage with Bisoo, and 2500 have already signed up. They believe that Bisoo had resulted in purchases of €500,000.”*
>
> (Visit 1 - Stakeholder 03 - Observations)

The model is similar to a discount card or Nectar Points scheme in the UK. Bisoo is an attempt to include individuals and was the closest that Sardex has come to a Bristol Pound Consumer-to-Business (C2B) model. It is a way to encourage further euro-denominated benefits for businesses part of the Sardex circuit. Sardex considers the model to be a Business-to-Consumer (B2C) and also allows consumers to donate unused SRD to local charitable causes.

> *"I Conti Tornano is a donation programme that is attached to Bisoo that allows you to donate your credit to an association. Bisoo allows companies to give cashback to consumers, and Sardinia is My Life, the main association it donates to."*
>
> (Visit 1 - Stakeholder 02 - Observations)

Bisoo is a recognition that purchases by individuals with local businesses is a significant part of a local economy, a similar perspective of Convertible Local Currencies (CLCs) (Ryan-Collins, 2011). The use of SRD cashback could incentivise an increase in footfall to their businesses. Bisoo allows identification of businesses within the circuit through its online map, without Sardex acting as a gatekeeper, which was central to the research recruitment.

Another development outlined at Sardex Mitzas (2018) is the product 'Sardex Efficio'. Businesses within Sardex who are receiving a surplus of income in the local currency have the option to receive an additional credit line. The additional credit operates more like a SRD loan, allowing them to finance capital investments. Businesses who are receiving a surplus of SRD each year can choose to receive an additional credit facility that can be used for investments such as extending a business premises.

The creation of further credit through this local system resonates with Post Keynesian perspectives of how the banking system operates at a regional level (Chick and Dow, 1988), where loans do not equate with savings but creation is based on the demand for credit by firms and households. It could be a partial solution to the issues of access to credit identified by economic geographers when analysing local economies in the UK and USA (Henry et al, 2014; 2017). WIR, Switzerland has a significant number of construction companies within its circuit (Stodder, 2013), suggesting that further sustaining this model may require the development of these types of supply chains.

> *"Efficio provides members an additional credit line within the network for a fee, it is mainly aimed at investments in building and construction. Sardex outlined that they have had 100 companies signed up who have borrowed an additional €4 million (SRD)."*
>
> (Visit 1 - Stakeholder 02 - Observations)

The development of Efficio was especially relevant to the sustainability themes of regional development through financing energy efficiency and renewable technologies, which will be explored in Chapter 6.

5.2. Practical Implications of an Endogenously-Created Credit-Based Complementary Local Currency

The section considers the practical implications of the Sardex model.

5.2.1. An Endogenous-Exogenous Dichotomy within Local Currencies

Wray (1992) terms the "endogenous-exogenous dichotomy" that outlines two competing models for how money is created and controlled within the dominant monetary system (Wray, 2000). It builds on the work of Rogers (1989) who highlighted the simple comparison between 'loans make deposits' versus 'deposits make loans'. The literature review highlighted that there has been some neglect in recent economic geography literature in challenging dominant exogenous neoclassical perspectives (Corbrdige, Thrift and Martin, 1994; Hall, 2013; Christophers, 2015).

A session on technology, blockchain and cryptocurrencies at the Mitzas event provides a relevant to the framing of this investigation within an endogenous-exogenous dichotomy. As detailed in the literature review, cryptocurrencies and Business-to-Business (B2B) mutual credit systems operate within two loosely opposing theoretical frameworks of money: commodity-based and exogenously-created versus credit-based and endogenously-created. Cryptocurrencies consider money to be a digital commodity formed as a digital token that needs to be first externally created and introduced into the cryptocurrency economy (Weber, 2014; Bjerg, 2016). This method of currency creation is strongly associated with the concepts of metallism (Knapp, 1924), monetarism (Friedman, 1980) and has a closer association with commodity gold-backed money described by Hume (1752b). A similar perspective is often highlighted by economic geographers of how money is first introduced within national economies (Harvey, 2006; Christophers, 2011b; 2011c, Hall, 2013). There was a recognition by stakeholders that cryptocurrencies or 'digital tokens' represented an opposing view of money to Sardex.

> *"...the [digital] tokenisation of everything undermines the aims of Sardex to support the commons, through turning every object into a commodity that can be traded."*
>
> (Visit 1 - Stakeholder 05 - Observations)

The fact that Sardex and Bristol Pound use the same Cyclos (STRO, 2020) digital platform allows a simple comparison of the opposing theories of monetary creation within their circuits. In Bristol Pound, its Convertible Local Currency (CLC) units can only be created within the Cyclos digital platform if there are corresponding units of

pound sterling hosted within an external bank account. This model of monetary creation is similar to monetarist perspectives of reserves held at a central bank influencing money supply (Friedman, 1971). All of the Bristol Pound units appear as positive entries within Cyclos and total to the same amount of pounds in the external bank account. Units of Bristol Pound can only be increased if this external holding of pounds is also increased. Due to this model, Bristol Pounds are treated as commodities and users can only participate in Bristol Pound's circuit if they first purchase Bristol Pounds.

Sardex uses the same Cyclos digital platform to operate an endogenously-created B2B mutual credit system. No holdings of euros within an external bank account are necessary to create money within its circuit. SRD is created at the point of a business using their credit facility, resulting in them receiving a negative balance and the receiving company a positive balance. All of the combined balances within this endogenously-created local currency equal zero, as credit balances are equalled out with debit balances. This is similar to the perspectives of Post Keynesian monetary theories in which all of the credit issued within an economy balances with the money in circulation (Wray, 2015; Kelton, 2020). Engagements with Sardex stakeholders highlighted that they had actually struggled to identify a cryptocurrency blockchain that would allow hosting of a currency that consisted of these positive and negative balances. Cryptocurrency blockchains are largely structured to host a metallist perspective of money in which it is represented as positive units (Weber, 2014; Bjerg, 2016).

> *"[Sardex] were hoping to use a blockchain, but interestingly they were only able to find one blockchain that supported 'money' as*

> *a positive and negative entry in a ledger. All other blockchains considered 'money' as a positive entry; just like how Bitcoin has 21 million positive units."*
>
> *(Diary Entry: Y1-034 - 20/04/2018)*

The ability of schemes to allow convertibility with the dominant monetary system affects the way that they are regulated. Schemes that operate on a commodity basis and store GBP or euros within a bank account are subject to financial regulations, in particular the Payment Services Directive (PSD2) (2017). Sardex endogenously creates its local currency and the units are not convertible for euros which means the scheme does not fall within the remit of financial regulators.

> *"...ongoing dialogue with the Bank of Italy, in which they are communicating once a year, and they are looking at innovation, and they consistently advise us to avoid convertibility at all costs, because the moment we convert, we lose our PSD2 exempt status"*
>
> (Visit 1 - Stakeholder 06 - Interview)

There is no technical barrier for inconvertibility, but there are legal ramifications. The stakeholder stated PSD2 (2017) would require Sardex to hold euros externally if SRD was convertible. In the time of the research the UK was a member of the European Union and the PSD2 regulations also applied to schemes in the UK.

5.2.2. Endogenous Business-to-Business Transactions

Endogenous monetary creation could theoretically result in a higher level of regional economic activity, albeit within a closed circuit (Motta et al. 2017). The Sardex circuit acts as a way of connecting businesses with one another to boost trade using the endogenously-created local currency. The creation of a local currency in this manner would challenge the issues raised by economic geographers where regional economies are negatively impacted due to the removal of a means of exchange by centralised banks and firms for investment in core regions (Seyfang, 2000; Cook et al, 2007; Faulconbridge et al, 2007). Bendell (2017) believed that these systems are the most effective at supporting small businesses. The additional credit line is providing new liquidity for businesses to transact and technology is providing a way of searching for local businesses. In contrast to Bristol Pound, which had a digital directory of members but struggled with low usage, Sardex demonstrates higher levels of economic activity between its members. I identified significant evidence among business users describing new customers and economic activity.

> *"...you reach more customers; they call me everyday."*
> (Visit 1 - Business 03 - Interview)

> *"All new. Sardex customers are all new, almost all new."*
> (Visit 2 - Business 34 - Interview)

These observations support studies on other credit-based schemes such as the Bangla-Pesa that found they are associated with higher levels of trading activity

(Ruddick et al, 2015). Although an increase in customers is positive for any business, one major doubt I had before conducting the research was how businesses spent the received SRD. Dodd (1994) raised the concept that individuals accepted money because they knew it could be exchanged again later within a network, resonating with sociological concepts of Monetary Circuit Theory (Realfonzo, 2006; Pilkington, 2009). Harvey (2006) also raised the same concept, believing communities of belief accept certain types of money as payment as they were confident that it could be reexchanged again in future within a predefined spatial scale.

The potential advantage of an exogenously-created commodity-based local currency such as Bristol Pound was that they can be exchanged back into pounds for purchases outside of the circuit or at a different spatial scale (Ryan-Collins, 2011; Cato and Suárez, 2012). Interviews with business users demonstrated the model of local currency could be effective for the majority of business types, even if their main suppliers were not in Sardex. Analysis of the interviews revealed two sets of business expenses: ‘core costs’ and ‘peripheral costs’. To provide an explanation, there is an example of a luxury handbag retailer. The business’ core costs are the luxury handbags themselves, of which they are all imported into Italy and therefore outside of the Sardex circuit.

> *“...well the main issue is that we cannot buy any of our products in Sardex. We buy from global or national companies that are big and don’t accept SRD. For us this is a big disadvantage because we cannot use SRD to buy our products.”*
>
> (Visit 1 - Business 15 - Interview)

Many of the retailers struggled with similar issues, as their products were from global brands. An advantage of an exogenously-created commodity-based model is that received local currency could be converted into euros to make these purchases at a different spatial scale within the national money circuit (Martin, 1999; Hall, 2013). However, the counter perspective is that the customers themselves would have originally needed to convert euros from global monetary circuits into the local currency circuit. An endogenously-created model provides more liquidity as credit which is created in the circuit, but cannot leave the circuit, resulting in higher levels of local economic activity. To the luxury handbag retailer this means more customers and business activity. In turn this has a positive effect on the regional economy as there is additional economic activity taking place. The interview with the business user indicated that she was in fact very positive with Sardex, even though her company's core costs are unavailable. The business user explained how the income in Sardex can be used for a wider set of 'peripheral costs'.

> *"...since we joined Sardex, we have used it for many things for this shop. For instance lights; we have done the sign; we will do the curtains… So we use it a lot. We have "set up" the shop [lighting, electricity, displays, shelving, furniture, tills, carpets, windows, accountants, cleaning] with a company in Sardex."*
>
> (Visit 1 - Business 15 - Interview)

This observation is crucial to understanding how Sardex has managed to scale an endogenously-created credit-based scheme. It appears that users have addressed the concept raised by Dodd (1994) and Harvey (2006) in which money needs a large circuit to be reexchanged, by allocating received SRD for a particular set of purchases within

the limited spatial circuit operating within Sardex. When the local currency cannot be exchanged back to the dominant fiat money a business has to think more strategically about how it is spent within the local circuit. This strategic planning by businesses was highlighted by Stodder and Lietaer (2016) in their analysis of WIR, Switzerland and believed it resulted in lower insolvencies among circuit members. This observation among interviewees led to the consideration of 'spendability' of the SRD that the business users were receiving. The majority of the businesses report using SRD to cover at least some peripheral costs, which allowed them to save euros for expenses that were not available within the spatial scale defined by the Sardex circuit.

> *"...electrician and [paper food] bags are 'peripheral costs'. The manager then discussed how the business user actually completely refitted another shop he owns using Sardex. All of the carpentry, electrics and shopfitting was done through the system."*
>
> (Visit 2 - Business 57 - Observations)

Restaurants and cafes reported that their core costs could be acquired through Sardex. Examples were mainly seasonal fruits and vegetables, alongside locally-sourced meats, which has implications for environmental sustainability and will be discussed in Chapter 6.

> *"Someone is buying in SRD, so we buy something in SRD that is convenient. Now there is some slaughterhouse for beef."*
>
> (Visit 1 - Business 04 - Interview)

> *"Sardex helped me because I have bought all the beverages in Sardex; some cold cuts (sausages) and cheese."*
>
> (Visit 1 - Business 24 - Interview)

There was evidence from the interviews of the development of more sophisticated local supply chains. One business user is a retailer and manufacturer of memory foam mattresses. The interview took place in a retail outlet in a shopping centre. The interviewee was incredibly knowledgeable of the wider business and the way it operationalises Sardex within its supply chain.

> *"Sardex was being used within the factory, suggesting it has become vertically integrated within the business. They had purchased some machinery with it, a pallet mover, equipment, computers and machine tools."*
>
> (Visit 2 - Business 45 - Observations)

Another retailer sells herbal products and soaps that were being made on another site. They are able to source some of their core costs and ingredients from within the Sardex circuit.

> *"So, these are not on display now. But they also do in Sardex. 'Herbs of Sardinia' and are from 'Tempio'."*
>
> (Visit 2 - Business 65 - Interview)

Once the local currency has been created as credit, businesses are able to operationalise the endogenously-created credit-based complementary local currency through purchasing either ‘core’ or ‘peripheral’ business expenses. The unavailability of exchange forces Sardex users to identify spendability opportunities at the local spatial scale defined by Sardex. The result is the stimulation of regional economic activity among small independent businesses, which is a positive outcome for individual businesses and the local economy.

5.2.3. Endogenous Business-to-Employee Transactions

The majority of the interviewees (62 out of 79) appeared to participate within the Business-to-Employee (B2E) initiative, as they are retailers and personal service providers operating a Consumer-to-Business (C2B) model. The recruitment strategy did skew this sample as I accessed the businesses through the Bisoo Map (see Sardex Bisoo, 2021). Increases in trade within these retailers was therefore likely due to the business users spending surplus SRD for personal expenses or paying their staff within the B2E initiative. There is evidence among the majority of businesses interviewed of the owners taking SRD for personal expenses.

> *“For example, we buy from our Simply [food shop next door]. Because it's Sardex anyway. And then outside, you might need a change of tyres, for example, for the car, always to a mechanic, or an optician. I bought my glasses, or, I don't know, the dentist; tooth care.”*
>
> (Visit 2 - Business 39 - Interview)

> *"That is, grocery stores or the clothing or at least; all that interests at home is everything in Sardex. So I have everything in euros and took it home. I don't use it. I use Sardex*."
>
> (Visit 2 - Business 76 - Interview)

The ability of business users to take SRD as personal expenses or pay employees expands the demand within the circuit and allows businesses with little core and peripheral costs to still accept the local currency. The increased number of possibilities in which SRD can be spent via the Business-to-Employee also helps to address the issues highlighted by Dodd (1994) and Harvey (2006), in which money is accepted by an individual as they know it can be reexchanged later within a defined spatial scale.

> *"(the company) has 15 full time employees with 40 hours guaranteed paid in euros, but they do pay benefits in Sardex. The company also actively supports its employees to find places where they can spend the Sardex credits."*
>
> (Visit 1 - Business 01 - Observations)

Business users stated that staff who were receiving Sardex as pay were largely positive and in some cases actually found additional benefits from the B2E initiative. An informal focus group with three staff at a food retailer indicated they were all happy to accept SRD as part of their pay.

> *"They all accepted Sardex as a small percentage of their pay each month. They said that they were actually happy to do so, as they could then buy food from the supermarket. They had initially arranged this with their union, but we were actually pleased about*

> *the initiative, as they received Sardex on the 1st of each month, whereas they had to wait until the 10th to receive payment in euros."*
>
> (Visit 2 - Business 57 - Observations)

There are some issues associated with the B2E initiative, which could be expected as employees were being asked to receive SRD instead of euros. There was a negative experience of one employee, as company owners previously discriminated against staff who did not accept SRD for remuneration.

> *"He had some grievances with the way his company was encouraging his staff to take Sardex within their pay packet. He said that an example of a contract may be; €20,000 total, with €17,000 and 3000 SRD. He said that he had known of examples where staff who accepted Sardex as part pay, were being promoted to higher roles."*
>
> (Visit 2 - Business 45 - Observations)

The ability to cover core, peripheral, personal and staff costs, and the Bisoo product to encourage footfall, there are a range of possible 'spendability' options for SRD. Although it is infeasible for businesses to operate completely in Sardex, there is a well-developed regional circuit of businesses who accepted SRD. One business user interview demonstrates how to significantly increase the spendability of the received SRD even though there are limited options available within the Sardex circuit.

The business is a popular retailer who significantly operationalises the use of Sardex, integrating some core costs, all peripheral costs and a significant amount of personal expenses. However, the demand for the services is still higher than the ability to spend

SRD. The business user therefore had searched the Sardex circuit for other products not related to their business. They identified a particular set of products that were available for purchase with SRD and set up another retail outlet selling this product in euros.

> *“I could very well resell it. I can fill the other store with merchandise that I can sell safely. Of course you can't spend the full amount on Sardex. But we always try to spend as much as we can.”*
>
> (Visit 2 - Business 72 - Interview)

The business’ actions raises a dilemma, as it likely breaks the Terms and Conditions of its participation in Sardex. However, the process is not illegal and it has theoretical and practical benefits. Firstly, it demonstrates that Sardex can be a useful business tool in the hands of a certain type of entrepreneur. Whereas some business users describe the inability to spend the local currency as a negative, this individual identifies a way of spending SRD within the circuit to generate further euros. Secondly, it has positive local economic effects. Due to this arrangement, another retail business had opened in an economically depressed peripheral region, supporting local employment. The business user also uses the surplus of SRD to further encourage friends and family to purchase within the Sardex circuit.

> *“Friend's car. My friend has to change the tyres, and I say, ‘Go over there, I'll pay in Sardex and you give me euros’.”*
>
> (Visit 2 - Business 72 - Interview)

My engagement with this business user contributed to a major change in the way that I perceived Sardex. Whereas in Bristol Pound, arguments for use largely centre on community or altruistic arguments that may only appeal to a certain type of business user (Bristol Pound, 2013), the use of Sardex by this business user demonstrated that in fact the model is a commercial tool. The endogenously-created credit-based currency at first poses a challenge due to the reduced options for spendability within the regional spatial scale defined by Sardex. However, the ability to create credit increases the economic activity available to local independent businesses.

5.3. Sardex is a Social Relationship

All businesses in Sardex have credit facilities that provide them the ability to make purchases from one another without the need for euros (Littera et al, 2014).

5.3.1. A Circuit of Debtors and Creditors

The income of individual businesses is an indicator of the credit being created within the circuit, as one business' debt is another business' credit. These sorts of debt-credit relationships are decentralised versions of the processes described by Ingham (2004). Ingham (ibid) recognised these relationships through the specific process of the lending of money, however in Sardex users can essentially create their own money and do not need to first borrow it from a creditor such as a commercial bank. Amato and Fantacci (2012) analysed debt-credit relationships in global circuits, whereas in Sardex this is conducted within a local circuit.

The majority of the businesses politely refused information about their balances. A minority (17) of businesses discussed some financial aspects. These businesses accepted between 2-25% of their overall revenue within Sardex. Often this is described as additional revenue, which reflects the reported increase in new customers by the majority of businesses interviewed.

> *“Around 20%”*
>
> (Visit 1 - Business 03 - Interview)

> *“...that is a 5% of the total turnover of our company. But it's all new turnover. So that's what we needed.”*
>
> (Visit 2 - Business 68 - Interview)

Some specific figures suggested a significant level of trade through Sardex, whereas Bristol Pound is often considered through a perspective of small purchases, such as coffee at a local independent cafe (Brown and Kulcher, 2012). In Sardex the local currency provides a significant income for businesses. The majority of interviewees were retailers who have higher transaction volumes of small SRD amounts, however there is evidence of much larger transactions amounts.

> *“€300,000 (SRD) per year...only in Sardex”*
>
> (Visit 2 - Business 34 - Interview)

> *"...today I have done €45,000 Sardex. where I had put only €10,000 per year. I should have done €10,000 in 2017, €10,000 in 2018 and I have exceeded. Great."*
>
> (Visit 2 - Business 35 - Interview)

The level of transactions conducted within Sardex demonstrates a significant impact on the local economy. Many of the businesses were small independent retailers, where an additional €10,000 of SRD annually is significant. On a conceptual level, there is no local currency in circulation within the scheme unless some participants within the network have negative balances, similar to the balance of payments perspective in the economy (Wray, 2015; Kelton, 2020). Within the traditional financial system, the debtor-creditor relationships are facilitated by commercial banks that charge interest or fees on transactions.

Economic geographers have highlighted the implications of providing commercial banks with dominant power positions within the economy (Corbridge, Thrift and Martin, 1994). The refusal to provide small businesses adequate levels of credit (Clark and Wójcik, 2007; Lee et al, 2009) has implications on local economies and uneven development (French et al, 2009; Pike and Pollard, 2010). In Sardex the credit facility is zero interest and transactions do not have fees. The model resonates with the Free Banking Era banks in which commercial banks created money within local spatial circuits based as credit borrowed by local individuals and firms (Rockoff, 1974). The local currency operates in a manner that illustrates Monetary Circuit Theory, as it is physically different from euros within Sardinia (Pilkington, 2009).

Around a quarter of the businesses reported using the credit line or were currently in their credit facility. They recognised the value of this option, as small businesses often

struggle with cash flow and are unable to access traditional credit facilities from the financial system will be discussed in Chapter 6 (Appleyard, 2013; Bhaird et al, 2016)

> *"Yes a lot. This is fantastic; the main thing. They trust you massively and they don't ask for interest; they don't breathe down your neck despite you are in negative."*
>
> (Visit 1 - Business 30 - Interview)

> *Yes, I use it. Of course, it depends on the expenses I have to incur. For example, now I've tried to accumulate as much as I can because I know I'm facing a slightly more important expense.*
>
> (Visit 2 - Business 68 - Interview)

The majority of businesses interviewed did not use the credit facility, even if they recognised that it was a useful tool to have. There may be psychological implications for business users to use credit facilities. Economic geographers have noted a process of a 'discouraged borrower' when considering the use of credit by small businesses (Kon and Storey, 2003; Han et al, 2009; Mac an Bhaird et al, 2016). Psychological factors, risk aversion and belief that credit would not be useful for business processes restricts the use of credit within day-to-day operations (Han et al, 2009). There was evidence of prudent financial planning among business users who were more cautious about the credit line, which may confirm similar observations with users of the WIR, Switzerland (Stodder and Lietaer, 2016).

The notion that SRD is being accumulated for future expenses resonates with the concept of a Zelizer Circuit (Zelizer, 1994; Colins, 2000). In a Zelizer Circuit individuals

add social relations to the dominant source of money and create new monies. Sardex users physically separated SRD from euros and planned specific purchases from specific businesses within their community of belief (Lee, 1999, Harvey, 2006). Sardex users were allocating funds for different purposes, distinct activities and relations (Zelizer, 2010). Business users considered their expenses within an annual business cycle, with users highlighting quiet and busy periods throughout the year. It further supports the concept of Zelizer circuits in which they are planning relationships that were short or long term (Zelizer, 2010: 89).

The members within the circuit shared similar social values which are reinforced through trust and social relationships (Ingham, 1996). The model further supports the perspectives of Evans (2009) in which values were being expressed through money, or values were 'changing' money, as users are participating in transactions with greater social meaning. The observations in Sardex would also support concepts highlighted by economic geographers, in which money transmits social norms across space and time (Leyson and Tickell, 1994; Lee, 1999).

> *"I use the credit line in Sardex only if I know that I will pay in some credits; for instance for a work that has not been paid yet. It's difficult that I will go negative without being sure that I will recover it."*
>
> (Visit 1 - Business 32 - Interview)

Due to the sampling strategy, the majority of the businesses were receiving their SRD from businesses who were likely participating in the Business-to-Employee (B2E) initiative. The SRD may be largely created within the B2B network and is then spent

with these retailers, meaning there is less need to use their credit facilities. Within a debtor-creditor relationship, the businesses operating on a B2B basis could be using the credit facilities to source core and peripheral costs. Whereas the retail businesses could be largely just recipients of the SRD. Retailers may find themselves with positive balances due the desire of other business users and their employees to spend their SRD for personal expenses.

I observed an employee of Sardex using SRD to make a payment, but some business users complained that Sardex did not accept SRD as payment. It raises questions about how Sardex itself operationalises SRD and whether it has access to a self-managed credit facility. If Sardex uses a credit facility and is in fact negative by a substantial number of SRD, this may be creating SRD across the network and reducing incentives for businesses to accept it. Sardex could be acting in a manner similar to governments within the Post Keynesian perspective of Modern Monetary Theory (Wray, 2015; Kelton, 2020). Sardex could be spending money to increase the amount of units in circulation, however there would need to be a way of destroying units at a later date. If Sardex accepted its fees within the local currency, there would be a mechanism to allow them to spend SRD which they would then destroy later. As businesses were complaining that Sardex did not accept SRD as payment, it was unclear if this mechanism was being employed. If there is not ample destruction of money, it could be causing inflation in the system which may result in businesses not valuing the currency equal to euros. There are a minority of complaints among interviewees about suppliers refusing to accept SRD as payment.

> *“However they are at the moment obscured because they have too many SRD. So I couldn’t use it. For my business the suppliers I have found now have too many SRD.”*
>
> (Visit 1 - Business 16 - Interview)

> *“There are also those who are in the Sardex circuit and did not sell me the goods in Sardex...it's an abnormal thing; that's not supposed to happen.”*
>
> (Visit 2 - Business 38 - Interview)

Furthermore, there were complaints among users that some businesses were increasing their prices in SRD relative to euros, which suggests inflation. This could indicate too much SRD within business user accounts relative to the credit facilities that need repaying, or could be as simple as businesses preferring euros over SRD. Charging higher prices in Sardex compared to euros is against the Terms and Conditions of the network and results in anger among users who did consider themselves to be following the rules.

> *“I'm not saying that he applies another price list, but he's less inclined to receive them. because he may not know how to spend, or he received too many; and so this sometimes for us traders means making us do more quotes for a certain thing because there is too much disparity.”*
>
> (Visit 2 - Business 68 - Interview)

The section demonstrated that there was a significant amount of SRD being exchanged among business users and how they operationalised the scheme.

5.3.2. Money is Credit and Credit is Trust

If business users limit the ability of other companies to purchase their goods and services it raises an issue on a central theme of credit as money: trust (Lee, 1999). Even in the traditional financial system, transactions only operate effectively if both members of sides of the debt-credit relationship have trust (Agnew, 2005; 2010). The notion of trust was a central observation within previous studies on Sardex (Littera et al, 2014; Iosifidis et al, 2015; Dini et al, 2016). The majority of businesses recognised trust and relationships as a crucial part of Sardex. When constructing their monetary circuit Sardex had developed a significant level of social capital within their community of belief, which was in turn reinforcing for the circuit.

> *"We are in total harmony...there is a relationship of trust that you don't find in the euro world."*
>
> (Visit 2 - Business 34 - Interview)

> *"If the person who has to pay in Sardex has connection problems. I say, "Don't worry; do it from home, too." So there's no mistrust or concern. You may run the risk of not getting paid, but it never happened to me. We like to trust people."*
>
> (Visit 2 - Business 74 - Interview)

These users may reflect a group of converts to the social movement that has been recognised by previous studies on local currencies (North, 1999; O'Doherty, 1999). These users may adhere strongly to the norms communicated through the local

currency among the community of belief that accept SRD as payment (Harvey, 2006). There appeared to be a realisation among business users about the positive impacts of shopping with other local independent businesses. However, as all of the individuals interviewed are themselves owners of local independent businesses, this could be expected.

> *"Very different from a store as a large retailer. that is, real people, natural persons, with whom you can talk, decide what to do. Having a certain type of relationship."*
>
> (Visit 2 - Business 41 - Interview)

> *"And it also makes you rediscover a little bit what spending is in our region; but not only because it is also a matter of trust between shopkeepers. Between traders and between entrepreneurs in general."*
>
> (Visit 2 - Business 68 - Interview)

Whilst interviewing business users my interpreter raised the issue that online businesses had impacted the number of independent retailers within the UK. Statista (2020) reports that online retail sales tripled from £33.24 billion in 2012 to a projected £99.31 billion in 2020, which has an impact on high street sales. Businesses that were most susceptible to being negatively impacted by the growth of sales on Amazon (2021) were prompted, but others brought it up without encouragement.

The notion that Amazon is an issue among these local businesses can be considered through the concepts highlighted by economic geographers, where the circuits created by the global financial system interact with the 'real economy' within a lower spatial

scale (Hall, 2013). The social norms transmitted by the global financial system prioritises profit maximisation and supports growing financialisation and is perceived to affect peripheral local economies negatively (Leyshon and Tickell, 1994; Epstein, 2005). Interestingly, some businesses considered Amazon and Sardex to be complementary. They are both seen as tools the businesses could use to access two different markets.

> "...because if you do not adapt yourself in any way, I'm doing the same thing as Amazon with Sardex."
>
> (Visit 2 - Business 35 - Interview)

> *"This morning I was about to start selling things on Amazon. We have to understand that Amazon; Amazon is not our problem."*
>
> (Visit 2 - Business 41 - Interview)

A relationship between Amazon and Sardex could be reflective of the tension that stakeholders identified between the cultural and business objectives, alongside a tension between the global spatial scale and a local one (Hall, 2013). Sardex has developed a system that does have a strong trust and local relationship-based dimension, supporting the development of a local community of belief (Lee, 1999), which provides a unique competitive advantage over Amazon. The fact that Amazon and Sardex are being considered alongside one another by interviewees, indicates that a credit-based scheme potentially is viable even within a business retail environment being upended by US technology companies operating at a global scale. There was evidence amongst a minority of interviewees that the social case for Sardex

is not an important factor, and they consider their participation merely from a self-interest perspective.

> *"...he stressed that he was only using Sardex from a business perspective, he understood the wider social arguments, but if it wasn't good for him, he wouldn't be using it."*
>
> (Visit 2 - Business 59 - Observations)

The perspective was among a minority of the interviewees. It confirms the study by Dini & Kioupkiolis (2014: 19) that found that Sardex has been successful as it does not require business users to have a "fixed and strong ideological commitment". There was a much more prevalent perspective of business users connecting with the social dimension of Sardex. It may have found a balance between Sardinian local pride and a model that has a strong business case for its users. A specific example of the strength of feeling towards Sardex was identified when interviewing a retailer. When asked what Sardex meant to her, she replied with a very powerful answer.

> *"Identity...it's ours"*
>
> (Visit 2 - Business 65 - Interview)

The recognition of Sardex as a model in which businesses express identity reflect previous studies that considered the model as social innovation that allowed the diffusion of values and ideals (Dini & Kioupkiolis, 2014). Furthermore, it would confirm the perspectives of previous researches that values have changed money in the case

of Sardex (Littera et al, 2014) which was related to the concept of Zelizer Circuits (Evans, 2009). Sardex also strongly relates to the concept of money being supported by a community of belief (Lee, 1999; Harvey, 2006) in which social values and norms are transmitted through economic exchanges within its circuit (Leyshon and Tickell, 1994). Whilst I was in Sardinia, Sardex was promoting a social media campaign termed "#ionosardex" (Sardex, 2021) which directly translates to "I am Sardex". It provides a practical representation of the arguments of Leyshon and Tickell (1994) and Lee (1999), in which social values and norms are transmitted through money. In this case small business owners were actively promoting that they embody the complementary local currency provided by Sardex. An example of this social media campaign is shown in Figure 5.3. below.

Figure 5.3. #iosonosardex social media campaign featuring small business owner



Although there was such a strength of feeling towards Sardex, the same business user has a negative perspective on plans to cooperativise the network (Dini and Kiopkiolis, 2019). The retailer is selling ethical and environmental products, yet has no desire to become part of Sardex on a governance level. I found evidence of a similar perspective from the manager of an actual cooperative that is operating within the network.

> *"He was proud of the way the cooperative operated, but wasn't too sure about Sardex operating in such a way."*
>
> (Visit 2 - Business 77 - Observations)

This is in opposition to the feeling of some researchers and practitioners that believe schemes should apply distributed governance structures (Bollier and Conaty, 2015; Augustyn, 2017). It was reflective of opposed beliefs between Sardex operating as a social movement or as a business providing a service, which was the contrast highlighted by North (2014a) in his analysis of the governance structures of complementary local currencies. The perspective reflects previous academic observations about the political environment in which Sardex was developed. Littera et al (2014) outlined how the polarised nature of Italian politics meant that the cofounders of Sardex strayed away from a mutually-owned network.

No specific questions were asked around politics or economics, but a minority of business users did highlight these issues, often within discussions about credit and the traditional financial system. Sardinia had negative impacts from the global financial crisis and this is reflective in discussions about the global financial sector. Their perspectives highlighted a scepticism of finance and banks among SMEs that has

been identified within other studies of small businesses (Han et al, 2009). It would reflect the notions highlighted by economic geographers in which the financialisation and centralisation of economies around financial centres have had a negative effect on peripheral regional economies (Martin, 1999; Hall, 2012). The insights also confirmed previous studies on Sardex that consider it a response to the global financial crises that had a significant impact on small businesses on the island of Sardinia (Melis & Guidici, 2014).

> *"Banks are poor (service provision); we work. The European Union has invented a new kind of slavery; the free enterprise. Small entrepreneur is a slave of this system, while the big entrepreneur does finance."*
>
> (Visit 1 - Business 23 - Interview)

> *"The idiocy of the banks. I would have blown them all up. I'm not ashamed to say. Enough; for me the banks are at the origin of the evil of the economy today."*
>
> (Visit 2 - Business 42 - Interview)

Stakeholders did recognise that Sardex was supporting the development of local identity, as essentially it is a currency for the region. One element that did arise whilst in Sardinia is that Sardex had sponsored the Sardinian 'national' football team. The move is controversial, as Sardinia is not a country and therefore is not recognised by international football governing body UEFA. However, there is a separatist movement that would like to see Sardinia independent, which is using the football team as a vehicle for its ambitions.

> *"He said that he had been following the development of the Sardinian national football team and that in fact in a recent match, all of the spectators had been handed Sardex flyers. This was the first time he had come across it and it was literally the week before we arrived."*
>
> (Visit 2 - Business 67 - Observations)

For Sardinians interested in the cultural elements, this was strong support for a seperatist cause, but also provided an effective business marketing opportunity to raise the profile of Sardex.

5.4. Conclusions

This chapter provided a theoretical and practical introduction to Sardex to consider the implications of its endogenously-created credit-based for individuals businesses. The initial conclusions drawn centred on the fact that the B2B mutual credit system model employed by Sardex can be understood through a heterodox lens of money and credit (Knapp, 1924; Polanyi, 1971; Wray, 1992) and geographies of money and credit (Lee, 1999; Pollard, 2003; Harvey, 2006). The local currency is created as credit, which confirmed Innes (1914: 159) in his summary of money; "credit, and credit alone, is money" and Keynes (1935) in his perspective as money as a payment for debt. Post Keynesian perspectives such as the statement that "everyone can create money, the problem is to get it accepted" (Minsky, 1986: 228) also strongly resonate with the scheme.

Sardex has succeeded in constructing a circuit in which everyone could create money with their credit facility and other circuit members accepted it as payment. The research demonstrated this model is a rejection of a traditional understanding of money and credit, described as the ‘loanable funds theory’ (Fontana, 2003). The model employed by Sardex provides a practical representation of how money is created within regional economies by the institutional and behavioural context. SRD exists because Sardex has created the conditions to create the currency through the extension of credit between users. Post Keynesian scholars have highlighted similar processes within regional economies involving commercial banks (Chick and Dow, 1988; Chick, 1993; Fuentes, 2006).

The research demonstrates that the creation of this circuit had a positive contribution for small businesses within a local economy that had contracted by 6.2% in the six years from the 2008 financial crisis (Europa, 2020). The endogenously-created credit-based local currency results in new liquidity being available to businesses. The successes in Sardinia are now being replicated across Italy, with Venetex of Veneto, Piemex of Piemonte and Liberex of Emilia Romagna identified as circuits applying the successful credit-based model (Iosifidis et al, 2015). The fact Sardex has attracted investment from Venture Capitalists (VCs) raises potential issues within its governance and strains upon the community of belief that accept SRD as payment (Lee, 1999). Local currency schemes usually apply non-profit governance structures (Bollier and Conaty, 2015; Augustyn, 2017). The profit-orientated model requires Sardex to balance the interests of investors and supporting local communities. Sardex confirms the argument of North (2014a) in which he believed models aiming to support businesses and the local economy often avoided democratic governance structures to avoid being stifled in decision-making processes.

The chapter then considers the practical implications of an endogenously-created credit-based complementary local currency. There is a recognition that the approach potentially has the limitation that users cannot convert back to euros, like Bristol Pound (Ryan-Collins, 2011), to be spent in a circuit at a larger spatial scale (Leyshon 1997; Martin, 1999). The fact that the credit-based local currency provides additional liquidity is demonstrated through increased customers and trade. This confirms research on other credit-based complementary local currencies in which these schemes have been found to increase local trade and business activity (Ruddick et al, 2015; Bendell, 2017). The research identified the need to consider the 'spendability' of the local currency, as users always need to re-exchange the currency elsewhere in the Sardex circuit (Harvey, 2006). It was evident that businesses were sourcing both 'core' and 'peripheral' costs through Sardex, with peripheral costs being prevalent. The range of processes identified within Sardex demonstrate the assertion of economic geographers that monetary and financial systems are inherently spatial (Martin, 1999; Lee, 1999).

The spendability reflected theoretical notions of monetary circuits in which individuals accepted a currency if they knew it could be spent elsewhere in the circuit at a later date (Dodd, 1994; Parguez and Seccareccia, 2000; Harvey, 2006). The use of the local currency to manufacture herbal products and also memory foam mattresses, demonstrated an uptake far beyond what has been identified within other complementary local currencies. The development of the Business-to-Employee (B2E) initiative allows a wider set of core costs to be transacted at the spatial scale defined by Sardex, in particular labour and owner-expenses. In conclusion, the operational effectiveness of Sardex is demonstrated through the wide range of uses for the local currency, which is driven by the need to ensure spendability within the growing circuit

of users. The development of circuits of suppliers for both core and peripheral costs indicates a positive contribution to the local economy.

The final conclusions from this chapter centre on the notion of Sardex as a social relationship. This was manifested within a circuit of debtors and creditors which provide the conditions for money to be endogenously-created (Motta et al, 2017). The research identified the significant balances that some users had within Sardex, in some cases €100,000s-worth. This commitment to the circuit further demonstrates the concept of the Zelizer Circuit (Zelizer, 1994; Colins, 2000), in which money is transacted based on social relationships. This implies that B2B mutual credit systems require strong bonds and relationships between its users to support this level of economic activity. The scheme offers businesses an additional credit facility, in an economy being underserved by the traditional financial system (Henry et al, 2014; 2017). However, many of the businesses reported being risk averse to credit, potentially demonstrating the concept of the 'discouraged borrower' (Bhaird et al, 2016). There was a significant amount of trust identified between its users, with interviewees highlighting their perspectives on solidarity and community, confirming previous studies on the strong social relationships demonstrated in the scheme (Dini & Kioupkiolis, 2014; Littera et al, 2014) and development of a strong community of belief and accompanying social capital (Lee, 1999). The next chapter will now discuss how this endogenously-created credit-based local currency contributes towards three sustainability themes of regional development.

6. WHAT INITIAL CONTRIBUTIONS IS THE ENDOGENOUSLY-CREATED CREDIT-BASED SARDEX LOCAL CURRENCY HAVING TOWARDS REGIONAL DEVELOPMENT?

The second empirical chapter of the case study considers the initial contributions Sardex is making to the three themes of sustainability: economic, social and environmental (Alhaddi, 2015; Purvis et al, 2019) within a regional development context. It addresses the second research objective that specifically asks how the endogenously-created credit-based model can contribute towards the broader sustainability themes of regional development in Sardinia, Italy.

6.1. Economic Contributions

The economic sustainability theme in the context of regional development is first discussed, considering: localisation of economic activity, supporting traditional high streets and small business finance and credit.

6.1.1. Localisation of Economic Activity

Over the past three decades there has been interest in how complementary local currencies can support economic localisation (Seyfang, 2001; North and Longhurst, 2013) through shortening supply chains within a local spatial scale (Seyfang and Longhurst, 2011) in a hope to increase local economic resilience (Ryan-Collins, 2011). The objective of regionalising supply chains and supporting small businesses has

become intertwined within a broader context of sustainability and regional development (Hudson, 2007). One of the key aims of Bristol Pound (2021) and the Convertible Local Currencies (CLCs) within the UK has been to support economic localisation (Bristol Pound, 2019), although research has demonstrated limited impact (Marshall and O'Neill, 2018). Lucarelli & Gobbi (2016) believed that the local currency operated by Sardex did act as a stabiliser of the local economy in the similar way that has been identified with WIR, Switzerland (Stodder and Lietaer, 2016), but this was not specifically tied to regional development.

Marshall and O'Neill (2018) believed an indication of a local currency supporting economic localisation was businesses changing suppliers within the local circuit. Sardex business users were asked whether they had changed suppliers within the local currency, indicating a change to businesses within a local spatial scale. Out of the eighty business users interviewed, thirty explicitly stated that they changed suppliers due to Sardex. Other interviewees stated they were spending more locally and only a small minority (5) explicitly stated they are unable to find suppliers in Sardex.

> *"Since we got into Sardex our purchases have changed a bit because we have extended/increased the spectrum of suppliers. Sardex stimulates the search for new suppliers because you are encouraged to look for other businesses that use this currency."*
>
> (Visit 1 - Business 30 - Interview)

> *"Yes. consumption habits and in a sense have changed in the sense that I look for suppliers in Sardex."*
>
> (Visit 2 - Business 41 - Interview)

The changing of suppliers has a positive contribution to regional development as the new firms are within supply chains operating within a local spatial circuit (Kim and Lim, 2017). Chapter 5 detailed how 'spendability' of SRD was a crucial factor in maintaining the endogenously-created credit-based local currency. Firms sourced two types of business expenses through Sardex: 'peripheral' and 'core' costs, which reflects the degree of economic localisation. Peripheral costs may have already been sourced locally as many of them are services such as accountancy, marketing and cleaning. Even though there is evidence that the businesses are changing suppliers, the impact could be negligible as the original suppliers may have too have already been operating at a local spatial scale, just not participating within the Sardex circuit.

> *"Yes; we started using Sardex suppliers...we had a range of services, from lawyers to consultants."*
>
> (Visit 2 - Business 34 - Interview)

The switching of peripheral services may however support a wider set of intangible benefits such as improving local community cohesion and fulfilling human desires through more localised social relationships, as observed with LETS and timebanks (Bowring, 1998; Seyfang, 2004; 2006). Around a quarter of business users interviewed stated that they changed suppliers for core costs (19). Chapter 4 highlighted that the supply chains of the businesses core costs consisted predominantly of products,

including food. It may indicate a greater degree of value circulating locally, further supporting regional development (Hand & Martinez, 2010). These changes of purchasing practices as a direct result of participation in Sardex is much closer to the benefits hoped for by local currency researchers (Douthwaite, 1999; 2000; Helleiner, 2000).

> *"Yes of course. About constructions I find everything. From tools to materials. Fairly there is someone that doesn't trade 100% in SRD; maybe at 50% but it's always helpful."*
>
> (Visit 1 - Business 03 - Interview)

> *"For instance; before I was buying curtains and banners in the north of Sardinia. Now instead I have everything here in Cagliari."*
>
> (Visit 1 - Business 30 - Interview)

There are also a limited number of examples where firms had located suppliers in Sardex and also switched their euro-dominated purchases to the same supplier (5). Marshall and O'Neill (2018) believed the barriers for the Bristol Pound in supporting localisation was the institutional and political logic of free market capitalism. They described an inherent perspective of business users to locate the cheapest product, which the convertible nature of Bristol Pound still allowed. Cato and Suárez (2012) had hoped that the CLCs could allow businesses to challenge this type of logic. Furthermore, it may also indicate a challenging of the societal norms associated and

transmitted within the dominance source of money as highlighted by economic geographers (Leyshon and Tickell, 1994; Lee, 1999). Business users in Sardex changing their euro-dominated purchases alongside the purchases within the local currency demonstrates a potential challenge of this institutional and political logic. It would resonate with the belief of Dini and Kioupkiolis (2019) that Sardex could allow the development of a counterculture against the rising issues associated with free market capitalism.

> *"The cafe's suppliers are in Sardex and they do make purchases in both the credit and in euros in the system."*
>
> (Visit 1 - Business 14 - Observations)

Another element that has a positive effect on economic localisation was the influence that Sardex was having on the decision-making of business users. Firms were first reviewing the Sardex circuit before making purchases within euros. The economic logic for this decision is simple: if they are able to source their requirements using the local currency, they have not used euros. That influence on decision-making could have a significant impact on economic localisation.

> *"I used to go on Google and look for coffee, I would take it from Naples. I'm not going to go in on Google now; I'm going in on Sardex."*
>
> (Visit 2 - Business 72 - Interview)

There was evidence that Sardex was contributing to the objectives of economic localisation, confirming Melis & Guidici (2014) that recognised the potential for Sardex to support these processes. The endogenously-created credit-based model of local currency is changing behaviour of users to switch their suppliers to firms operating at a local spatial scale. It would further support the analysis of Littera et al (2014) that believed Sardex was acting as a stabiliser of the local economy (Lucarelli & Gobbi, 2016).

6.1.2. Supporting Traditional High Streets

There has been increasing interest within developed countries around the need to support traditional high streets (Ntounis & Kavaratzis, 2017; Parker et al, 2017). Griffiths et al (2008) believed that the high street is an element of the economic theme of sustainability and regional development, with others believing a physical local space allows a range of objectives within the three themes to be met (Chan & Lee, 2008; Griffiths et al, 2008). Within the United Kingdom there has been a political effort to support traditional high streets and their renewal (see Future High Streets Fund, 2019). Chapter 5 outlined the development of the Business-to-Employee (B2E) initiative that allows business users and their employees to take SRD as remuneration and spend it within local retailers operating within traditional high streets. This was the original intention of the CLCs and central to the promotional activities of the Bristol Pound (Graugaard, 2012; North, 2014b). Interviews allowed business users to describe the purchases they make through the B2E initiative, as shown below.

> *“Well I buy fruits and vegetables; meat; clothes; restaurant…”*
>
> (Visit 1 - Business 09 - Interview)

> *“But to say, if you go into the circuit, go in and look for what you want: clothing, anything, you can find it.”*
>
> (Visit 2 - Business 76 - Interview)

A trend that was evident within the data set was the development of localised clusters of firms accepting SRD in traditional high streets. Through the B2E initiative business users and their employees make one visit to a high street and conduct multiple transactions. It wasn’t clear in post fieldwork analysis if this was intentional or just a coincidence as retailers do tend to locate near one another anyway. It could also be because of recruitment bias, as interviewees were mainly retailers that participated within Sardex Bisoo (2021), the Sardex initiative that encouraged consumers to shop within local retailers. Nonetheless it is having a positive economic effect supporting local independent retailers within traditional high streets and local spatial scales.

> *“Someone can come on Saturday; from a nearby village; and it goes for a grocery shop, he buys fish, meat… and then he stops here to buy wine. Here are coming customers that otherwise they would have never come.”*
>
> (Visit 1 - Business 08 - Interview)

> *"[Business 08] also believed that having a group of retail shops together is beneficial, as no one would come to Serramanna to just buy wine."*
>
> (Visit 1 - Business 08 - Observations)

Business users discussed how spending SRD within local independent retailers further reinforced trust and relationships within the circuit, further supporting its community of belief (Lee, 1999). Many interviewees stated notions of 'rediscovering' or 'reconnecting' with local businesses, after becoming used to shopping within financialised multinational firms (Epstein, 2005). To ensure the SRD that they were receiving could be spent, they looked for local retailers to meet their personal material needs. But through meeting these needs, they also fulfil social and relationship needs.

> *"And it also makes you rediscover a little bit what spending is in our region; but not only because it is also a matter of trust between shopkeepers."*
>
> (Visit 2 - Business 68 - Interview)

> *"One of the directors gave the example of a time he bought shoes from a local shop, which he thought he would have bought on Amazon, if he hadn't had Sardex."*
>
> (Visit 2 - Business 59 - Observations)

The development and use of Sardex Bisoo could further have positive implications for traditional high streets. Sardex Bisoo is targeted towards ethical consumers on the island and Sardex had already reported that there had been a significant number of

euro-denominated purchases. Whilst conducting fieldwork in Sardinia, businesses had already started promoting the recently launched Sardex Bisoo, as shown in Figure 6.1. below.

Figure 6.1. Sardex Bisoo marketing materials located within retail businesses



There were mixed perspectives among business users about the effectiveness of Sardex Bisoo. Many retailers already offered incentives such as discounts and felt that Sardex Bisoo is an additional layer of complexity. Most of the issues raised appeared to be associated with the launch of the initiative.

> *"They say it was successful in some little village but the city is not like that; it's a bit different. I prefer doing some discount."*
>
> (Visit 1 - Business 13 - Interview)

> *"What's the point of that for me? That is, the speech is this: to whom do I give the Bisoo Card?! Let's admit that in Porto Torres and Sassari province many of us did not join, because anyway we had to pay something."*
>
> (Visit 2 - Business 40 - Interview)

Among the business users that spoke positively of Sardex Bisoo there is a recognition that it encouraged greater footfall. This would have a positive impact on local high streets, especially if the consumers were switching from multinational stores to local independent shops. It also nudges consumer behaviour towards more sustainable consumption patterns, an objective that researchers hoped local currencies could support (Seyfang, 2001; Seyfang and Longhurst, 2011). It was a central feature of the CLCs and actively promoted by the Bristol Pound (Graugaard, 2012).

> *"With respects of Bisoo furthermore, the cash back you give most of the time you take it back because the 1 SRD I give today, he is going to spend it here tomorrow."*
>
> (Visit 1 - Business 24 - Interview)

I have found evidence to demonstrate that Sardex has a positive effect on local independent retailers which in turn supports the traditional high streets. Whereas in exogenously-created commodity-based models consumers spend their local currency

within high street retailers, which then convert back into GBP. The endogenously-created credit-based model created by Sardex requires business users who receive SRD to seek out local spending opportunities.

6.1.3. Small Business Finance and Credit

The model provides a mechanism to extend credit to small businesses, a demographic that economic geographers have highlighted is often underserved by, or cautious of, the traditional financial sector (Leyshon, 2009; Lee & Drever, 2014; Henry et al, 2014; 2017), which is especially prominent in peripheral regions (Ughetto et al, 2019; Cowling et al, 2020). Sardinia appears to be a region in which the withdrawal of financial services has had a significant impact on small businesses and in turn the local economy, further demonstrating the concept that financial systems are spatial (Martin, 1999).

Sardex supports business cash flow, allowing business users to make purchases using the credit and that could be repaid with increased SRD sales. Sardex can be considered as an alternative solution to address issues with access to finance for small businesses, similar to the Community Development Financial Institutions (CDFIs) developed in the USA and UK to address similar shortcomings (Ward and McKillop, 2005; Appleyard, 2013). Sardex operates an endogenous model of credit creation which more accurately represents the structure of the commercial banking system, opposed to where CDFIs operate a ‘deposits create loans’ approach (Pinksy, 2001; Mcgeehan, 2006; Buttle, 2007). Furthermore, Culkin & Simmons (2019) believed that Sardex offered a model that could support the finances of small businesses post-Brexit.

> *“A positive change is to have been able to buy, at a time when perhaps there was no liquidity, some products without having to pay out a euro.”*
>
> (Visit 2 - Business 42 - Interview)

> *“He stated that he plans for purchases in Sardex, he considers how much he is earning and forecasts, allowing him to plan investments.”*
>
> (Visit 2 - Business 68 - Observations)

The notion that business users were cautious or sceptical of the dominant financial system was evident within the interviews. Many of the business users used the questions around finance and credit to also criticise the banking system.

> *“Yes I use it. I don’t have any banking debts. For my experience of small-medium enterprises, this credit is important.”*
>
> (Visit 1 - Business 08 - Interview)

> *“We prefer Sardex. We like to avoid banks.”*
>
> (Visit 1 - Business 07 - Interview)

Local currency schemes are often considered anti-capitalistic or as a solution to the failings of the dominant financial system (Bowring, 1998; Helleiner, 2000). However, the WIR, Switzerland operates a local currency alongside traditional banking products

such as business loans. In Italy, some small businesses have access to overdrafts termed ‘FIDO’. Each of the businesses were asked about how they consider Sardex in relation to their traditional financial services. A number of them outlined how they use both Sardex and traditional banking products together, to maximise the financial options available to their business. It could be conceived as the dominant global monetary circuit (Martin, 1999; Hall, 2012) operating alongside the local currency at a local spatial scale.

> *“I have the FIDO with my bank that I use abundantly. However, having 2,000 SRD at 0% interest [rate]. If I have to spend, I have done the website only because the person who proposed it to me was in Sardex. Otherwise I couldn’t have afforded it.”*
>
> (Visit 1 - Business 25 - Interview)

The notion that Sardex was being used alongside the dominant financial was also evident within the transactions being conducted by the business users. Many of the interviewees discussed ‘blended transactions’ using both euros and SRD, where purchases were made using a percentage of each. Some business users recognised that this acts as a mechanism for making their euros ‘go further’ for their operations. However, others discussed it as a point of contention, where they accepted 100% SRD and their suppliers demanded blended payments.

> *“I have suppliers I used to pay in euros. Then I learned that they were in Sardex. When I entered [Sardex] and I started working at 50%. i.e. bought 1,000 euros of goods; I give 500 euros and 500 with the transaction Sardex.”*
>
> (Visit 2 - Business 76 - Interview)

> *“However, I am annoyed when during the year; I want to pay an invoice of 1,200 SRD; the supplier on his profile page has 100%; but eventually he asked me, kindly, to pay that 50% in euros”.*
>
> (Visit 1 - Business 13 - Interview)

At Sardex Mitzas (2018), a partnership between Sardex and Banca Popolare Etica (2021) was promoted, a socially responsible lender based in Italy. The potential partnership is interesting, as WIR is also a bank that provides financial services within the Swiss Franc (Stodder, 2012). Sardex is at an initial stage of exploring partnerships with Banca Popolare Etica, but it could develop into a more nuanced relationship to support the cash flow of small businesses. The partnership could potentially allow small businesses to access a blend of credit in both SRD and euros. The relationship also represents an innovative development in the space where there are growing calls for the development of regional banks, either publicly or cooperatively-owned (Hakenes et al, 2009; RSA, 2018).

> *“I think the strategy there is to find ways to partner with them, except the, so we avoid being in direct competition.”*
>
> (Visit 1 - Stakeholder 06 - Interview)

One thing that was noted by the stakeholders was that Sardex was too small to be significant to a wider set of traditional financial institutions. They stated that the visibility of Sardex was much higher than the impact on Gross Domestic Product (GDP). Many people within the financial services industry in Italy had heard of Sardex, but its impacts were too small for them to actively engage.

> *"For now a lot of love but still slow to actually apply. A bank cannot easily give details of its customers; now with the GDPR even more. However, now we are working more on the cultural side; creating awareness around ethics and sustainability."*
>
> (Visit 2 - Stakeholder 14 - Interview)

The credit available in Sardex provides an economic tool and initial contributions to regional development through supporting the cash flow of small businesses.

6.2. Social Contributions

The second section considers the contribution Sardex has on the social theme of sustainability within the context of regional development.

6.2.1. Supporting Disadvantaged Communities

The focus of local currencies are often on peer-to-peer networks (Aldridge and Patterson, 2002) and how they could support disadvantaged communities (Seyfang, 2002; Gregory, 2012) affected by the uneven nature of regional development affecting

Italy and its regions (Harvey, 2006). The endogenously-created credit-based B2B local currency employed by Sardex relies on trust. A significant amount of ‘social capital’ has therefore been formed to sustain Sardex (Putnam, 1993; Littera et al, 2014;). Social capital and infrastructure within local communities has been considered central to regional development (Chan & Lee, 2008; Cuthill, 2009). Sardex represents the development of ‘soft’ infrastructure that builds capacity within the community (Cuthill, 2009). Furthermore, Sardex is reflective of a social enterprise that creates and sustains social capital within communities (Kim and Lim, 2017). Whilst interviewing business users there was strong evidence that Sardex was encouraging the development of relationships of trust between individuals. It further supports the belief of Cannas (2017) that Sardex relies on values such as trust, reciprocity and mutual support.

> *“The customer type is an individual with a pronounced sense of community, someone who really understands that Sardex is producing value in the territory (locally)...It’s a big help; the beauty is being part of a community in which there is mutual assistance.”*
>
> (Visit 1 - Business 25 - Interview)

The social benefits that individuals gained from participation within Sardex encouraged them to develop the local network. It could reflect the notion that the social theme of sustainability in the context of regional development requires participation and social cohesion (Murphy, 2012) alongside supporting the development of inclusive communities (Littig & Griessler, 2005). The concept that Sardex is a mechanism for self-help was reflected in Motta et al (2017) who described it as a ‘self-funded social

impact'. There was evidence that business users were supporting Sardex to grow within their own communities to further this positive social impact.

> *"One of the strongest leverage for our development. The idea that Sardex 'unites' companies to develop the community in this territory."*
>
> (Visit 1 - Stakeholder 12 - Interview)

> *"A village close to here. There were perhaps 4 or 5 members. A clothing shop signs up for Sardex. This member has then brought in the network about 30 companies. The butcher signed up; another clothing shop signed up; then the supermarket; then hardware store… viral."*
>
> (Visit 1 - Stakeholder 12 - Interview)

Sardex provides business users that did not have access to euros an opportunity to still conduct commercial operations locally. In turn, this has a positive effect within the communities in which they operate, as keeping the businesses open may slow local economic decline. Some of the businesses are family-owned and have been open for generations at the same location. This would resonate with research on WIR that identified it helped reduce insolvencies among small businesses (Stodder and Lietaer, 2016).

> *“But I understand them because they've seen better times and it's hard to say they're not coming back. Honestly, after 30 years; 20 years of working. Sincerely changing the way you work again can be annoying, but then... then you close, you collapse.”*
>
> (Visit 2 - Business 41 - Interview)

> *“Someone that cannot achieve or struggle to achieve something with €, they can do it with SRD. Like this you are engaging those people who cannot have access to € but they have an opportunity in Sardex.”*
>
> (Visit 1 - Business 30 - Interview)

There was evidence that Sardex is playing an active role in supporting entrepreneurship and startup businesses within depressed spaces. Entrepreneurship has been regularly considered within a framework of the social theme of sustainability in the context of regional development (Patzelt and Shepherd, 2011; Prieger et al, 2016). There were two businesses within the sample that were owned by young entrepreneurs (below 25 years of age) and had recently started their businesses. The first young entrepreneur had launched a cafe business and received a grant from the local authority. Alongside this grant, Sardex provided a credit facility to allow them to purchase business requirements from the circuit. The second had opened a bookshop and too benefited from a combination of a local authority grant and the credit facility available through Sardex.

> *"The young entrepreneur had received a grant through the local authority to set up his business as part of an economic development project. Alongside this grant, Sardex had provided him a free account and a credit line. He had used the Sardex credit line to fit out his premises and the grant to buy stock."*
>
> (Visit 1 - Business 24 - Observations)

> *"A grant, but I got a grant [alongside credit]. Even those guaranteed, low rate [from the local authority]..."*
>
> (Visit 2 - Business 41 - Interview)

The model provides blended finance between a public grant and the interest free credit line within the local currency. It could potentially be the type of financial innovation highlighted by Culkin & Simmons (2019) as a way of supporting small businesses after Brexit. It is an innovative mechanism to support startup businesses within disadvantaged communities and encourages the creation of more inclusive communities (Littig & Griessler, 2005; Murphy, 2012). The businesses were now visible to new customers in the Sardex circuit. The credit facility allowed them to make purchases in the circuit to support the initial startup of the business.

In the United Kingdom (UK), there is evidence that entrepreneurs from Black Asian or Minority Ethic (BAME) experience a higher level of financial exclusion than those from traditional white businesses (Smallbone et al, 2003). Studies on local currencies in the UK found they were predominantly used by middle class white communities, and had failed to access BAME communities (Aldridge et at, 2001). One of the stakeholders of Sardex discussed the possibility of using the local currency to support immigrant communities. It would be a significant development and would be effective in supporting social aspects of sustainable regional development, such as building

inclusive and diverse communities (Murphy, 2012). There was also evidence that immigrant business users were benefiting from participation within the local currency.

> *"...the idea is to bring innovation and startup kind of thinking together with the basic support structure for migrants, maybe, or for people who are unemployed and maybe to give something that has more positive than the standard support."*
>
> (Visit 1 - Stakeholder 06 - Interview)

> *"He is a guy that repairs and manages laptops. He is Albanian. Once I visited him and he told me 'thank you because with this I gain credibility' imagine for an Albanian guy in a village it can be hard…"*
>
> (Visit 1 - Stakeholder 15 - Interview)

Another demographic that has been underserved by the financial system within the UK is female-owned businesses. Female entrepreneurs were overrepresented within the sample. Official Italian statistics state that around 25% of businesses are owned by women (Statista, 2019), although these statistics supposedly hide lower rates in the southern regions and Sardinia. My sample contained thirty one female entrepreneurs (38.8%).

> *"She began answering the questions and then she started showing us items around the shop that came from Sardex, and orders on pieces of paper for items that she was hoping to purchase in Sardex."*
>
> (Visit 2 - Business 35 - Observations)

The high female participation may be due to the recruitment methodology relying on the Sardex Bisoo (2021) map to locate businesses. Therefore predominantly retailers such as clothing shops were interviewed, which may have a higher proportion of female-owners. Some of the female-owners stated that finance was not their strong point, and suggested we spoke with their accountant about the financial specifics of Sardex. This demonstrated that the circuit did have broader appeal than just businesses looking for a cash flow solution. These business users may be more interested in the reciprocity and relationships that came with participation in the circuit (Dini & Kioupkiolis, 2014).

6.2.2. Public and Third Sector Multistakeholder Partnerships

There has been previous research on multistakeholder partnerships in supporting regional development (Bendell et al, 2010; Pattberg et al, 2012), including initiatives with complementary local currencies (Ayres and Bird, 2018). Partnerships may reflect ‘active local authorities’ such as seen with the Preston Model (O’Neill, 2016; Manley, 2017) or the concept of a ‘Foundational Economy’ (Bowman et al, 2014. Stakeholders discussed how Sardex is working with public and third sector organisations to address poverty. It resonates with studies on other local currencies, most notably timebanks, that have been used to address poverty and social inclusion (Seyfang, 2004). It was not the first time a local authority has been active within a local currency system, Brown and Kulcher (2012) discussed how the Mayor of Bristol took his salary in Bristol Pounds.

> *"...or maybe victims of assault, sexual assault, people like that, and these are using traditional instruments, some of them financial, and so some of them the church."*
>
> (Visit 1 - Stakeholder 06 - Interview)

> *"...giving to the third sector operator and help try to kick start that, it could be very productive for the very poorest, those mixed up in drug addictions, or prostitution, those at the very bottom of the pile, so we could allocate a [local] currency for the informal economy."*
>
> (Visit 1 - Stakeholder 06 - Interview)

The Sardex initiative 'Social Pay' developed from the European-funded project DigiPay4Growth (European Commission, 2017) that was a consortium that included the Bristol Pound (see Chapter 7). The aim of DigiPay4Growth was to support the development of complementary local currencies to encourage more local transactions and access to credit. These sorts of partnerships are reflective of the strategic niche management identified by Seyfang and Longhurst (2013a) as taking place within the sector to support the sharing of knowledge. Social Pay has a recent incarnation now termed, 'Local Pay', that was promoted at Mitzas.

> *"There were discussions about links to Public Administrations and 'Social Pay' - their product that provides infrastructure for paying social benefits within the system."*
>
> (Visit 1 - Stakeholder 02 - Observations)

The Social Pay initiative originally enabled the payment of welfare benefits in a local currency linked to the Sardex network. The aim of the initiative was to consider if the local currency Sardex operated could be used to maximise the local economic benefits of public welfare spending. The initiative included €70,000 of welfare spending over a time-limited period in 2016 to consider the impacts that the initiative could have on a larger scale. As discussed earlier in Chapter 5, SRD is nonconvertible with euros, so the Social Pay initiative required the creation of another parallel local currency that is essentially 'backed' by this €70,000. The initiative could be considered very similar to the Bristol Pound model (Ryan-Collins, 2011), but users had to wait a period of time before they were able to convert into euros.

> *"We have done a pilot with Caritas and Sardegna Foundation and one with the council of Ottana to test how public institutions would react. We have a supermarket, a dentist, a bookshop, gas shop, bakery, opticians, pharmacy… everything that we have been pointed to by these organisations as urgent, impactful and needed expenses."*
>
> (Visit 1 - Stakeholder 13 - Interview)

The stakeholder described how there were benefits associated with encouraging welfare spending within local independent shops. Social Pay could also limit the nature of the expenses to what was considered urgent. The aim of this was to maximise the effectiveness of the funds and reduce the likelihood that welfare recipients were spending it on expenses such as gambling, alcohol or tobacco. It was considered useful for social workers to understand what the individual being supported was

consuming. The approach raises moral concerns on whether Sardex should be able to decide what products welfare recipients are able to purchase, although it likely delivered it within a framework set by the local authority.

> *"We have explained to supermarket (till) staff that these credits could have been spent just for something and not alcohol and luxury goods. We haven't had issues. It has also been useful for social workers; they could verify living expenses within the network. Of course anonymously."*
>
> (Visit 1 - Stakeholder 13 - Interview)

The initiative raised ethical concerns about whether or not public funds should be used within such a manner. It could be seen as derogatory towards the recipients who are not trusted to spend their funds wisely. There could also be a negative economic impact as the majority of the retailers that we interviewed were upmarket offering higher cost products. There were some observed issues within the Social Pay initiative. There was an incentive for the welfare recipients to hold on to the local currency until the time period was complete, as it then was converted back to euros. This may be an issue if the person was forgoing immediate spending on essential goods, to receive euros at a later stage. There was also an issue that the system was digital and required a smartphone to operate, which may be a barrier for individuals less digitally competent.

> *“However, because there was a time limit to the project, it encouraged users to hold on to units as after the project, they could be converted to euros, which provided a disincentive to spend.”*
>
> (Visit 1 - Stakeholder 13 - Interview)

> *First the digitalization; people were not confident with mobile etc…*
>
> (Visit 1 - Stakeholder 13 - Interview)

Restricting welfare spending to Sardex retailers may reduce the spending power of the individuals using the currency. The connection to the public sector could also expose Sardex to being influenced by the dominant policy discourses of the state, a criticism of UK schemes (Dittmer, 2013). Finally, there were aspects noted at Sardex Mitzas (2018), alongside other wider media narratives associated with this initiative, that it could be considered an area of exploration for the potential development of Universal Basic Income (UBI) (Howard, 2018; Hoynes and Rothstein, 2019). Sardex offered a scheme where payments could be done through local circuits of independent businesses to maximise the social benefits and support regional development.

> *“He promoted the original Social Pay and then the development of Local Pay, the recent incarnation. He believes that there is a future with the development of a Universal Basic Income in Italy, which he believes could benefit Sardex.”*
>
> (Visit 1 - Stakeholder 02 - Observations)

In the Social Pay and more recently Local Pay initiatives, Sardex was not just relying on the public sector to develop its product. It did not appear to be a response to criticisms of the Bristol Pound's relationship with the public sector (Dittmer, 2013). It was likely evidence that Sardex may benefit from being a commercial enterprise that is looking to obtain a return on the development of its initiatives. Social Pay has been developed with a local authority, but its successor Local Pay is now in use by charities and associations.

Casa Della Fraterna Solidarieta (2021) is using Local Pay and I was given a tour by the Director. The charity offers a food bank service to local individuals, a location where mothers can access donated baby supplies, alongside free dental and medical provision. In the interview with the Director he described how the funding for the association was entirely private, from donations and philanthropists from across Italy. The initiatives that Casa Della Fraterna Solidarieta support reflect a role that charities and volunteering can have in regional development (Holmes, 2009). Local Pay allows this institution to meet basic human needs on the island (Littig & Griessler, 2005).

> *"What the model did was it allowed private philanthropists to provide a cash-like tool to the most desperate of families. In the case where they weren't able to access the food or supplies provided by the charity, they could have a Local Pay card."*
>
> (Visit 2 - Stakeholder 18 - Observations)

The foundation uses Local Pay to provide funds directly to individuals and families in extreme poverty. There are time-dependent uses of Local Pay, for instance if a family had recently had a baby and requires greater levels of assistance than is available

through publicly-funded services. The Director said that the philanthropists feel uncomfortable providing euro-denominated cash payments directly to those in need, with similar concerns around misuse of funds. Local Pay provides a model to do that whilst retaining some control over the level and type of purchases being made.

> *"For the foundation it allows us to provide essentially cash transfers, but limits are applied: where and what it is spent upon."*
>
> (Visit 2 - Stakeholder 18 - Interview)

There are potentially less ethical issues associated with this approach, as the funds are originally private donations that are then being provided through Local Pay. It does however raise concerns that individuals in extreme poverty may not be able to access the cheapest goods, if they are restricted to Sardex retailers.

6.3. Environmental Contributions

The final section considers the contributions Sardex makes towards the environmental theme of sustainability in the context of regional development.

6.3.1. Environmental Impacts of Products and Services

Local currency researchers and practitioners have hoped they can be used to reduce the ecological footprints of their users (Seyfang and Longhurst, 2011; North and Longhurst, 2013). It has been debated whether local currencies were changing lifestyles or merely attracting individuals with these sorts of beliefs in the first place

(O'Doherty, 1999; North, 1999). There is a widespread belief among interviewed business users that the circuit provided trust and relationships, supporting a community of belief (Lee, 1999; Harvey, 2006), that went beyond mere economic transactions. Some of these business users related this to a wider vision or philosophies associated with a more environmentally sustainable society.

> *"Yes, there is a relationship of trust that you don't find in the euro world. The Sardex world is a very vision-based relationship...If we can get together. Environment. the social aspect, i.e. for all, and the economic part. Because the money has to go, too. This project could improve the world."*
>
> (Visit 2 - Business 34 - Interview)

> *"It should be so. because it's a community anyway. A community in which certain philosophies and criteria are combined."*
>
> (Visit 2 - Business 74 - Interview)

The data offered initial evidence that Sardex reduces ecological footprints of users and products. The first aspect was associated with the environmental cost of products being sold. One thing that is identified is that the spendability restrictions of SRD encourages businesses to change suppliers to firms operating at a local spatial scale that accept SRD as payment, encouraging more sustainable consumption habits through localisation of supply chains (Seyfang, 2006). There are obvious potential benefits around food supply chains.

> *"[Business 73] stated that he used Sardex to cover some of his core costs, as he was able to access fruits and vegetables through the network."*
>
> (Visit 2 - Business 73 - Observations)

> *"He did say that he was able to get some of his core business costs through Sardex, as he needed vegetables and cheeses."*
>
> (Visit 2 - Business 74 - Observations)

If the businesses were changing from globally sourced vegetables to locally sourced and seasonal vegetables, this has a significant positive environmental impact though reductions in food miles (Maye et al, 2007; Jarosz, 2008; Hand and Martinez, 2010). The development of regional food supply chains has become a central feature of reducing environmental impacts and supporting regional development (Illbury & Maye, 2005; Duram & Cawley, 2012). There was evidence that Sardex is supporting businesses to localise food supply chains.

The changing of suppliers to businesses within the Sardex circuit results in the procurement of more environmentally friendly products. However, this may be due to Sardex being attractive to the types of businesses that already operate with high regards to their environmental impacts. Examples of firms who adhere to alternative values and provide goods with higher environmental standards were detailed at Sardex Mitzas (2018) as part of marketing termed; #iosonosardex (#iamsardex). There are two specific examples, a company who grows cork trees on the island and uses traditional methods to harvest, alongside an eco-plastics provider.

> *"The environmentally friendly cork supplier stated that they had regionalised his supply chain due to Sardex...there was also an eco plastic company within the network"*
>
> (Visit 1 - Stakeholder 03 - Observations)

Another potential extension of this process is when a company is looking to expand its supply chain within Sardex and a new local version of a product is developed. Although spendability is a restriction to the holder of SRD, it potentially offers a new marketplace for a seller of a product. This sort of development was intended by architects of CLC models such as the Bristol and Stroud Pounds (Cato and Suárez, 2012), but due to their convertible nature, never materialised (Marshall and O'Neill, 2018). An example of the creation of a new product within the Sardex circuit was of a business user that is an installer of insulation. Their current supplier of insulation is based in Northern Europe and offers a fibreglass solution, a product that has a high environmental impact within its production process and then has associated transport emissions. The business user detailed how in its desire to ensure the spendability of the received SRD, it identified a potential supplier of Sardinian sheep wool insulation.

> *"Due to engaging with Sardex, the company explored the potential for insulation material to come from a locally sourced sheep wool, which supports local suppliers and is more environmentally friendly."*
>
> (Visit 1 - Business 01 - Observations)

The reduction in environmental impacts is also encouraged through the Business-to-Employee (B2E) programme. As detailed in the previous sections, the B2E initiative

results in the development of a network of retailers to meet consumer demands. One business user explained that instead of travelling to another country for his holiday that year, he instead used SRD to fund his vacation. This could have significant reductions in the environmental footprint of the user's holiday procurement, especially if he was intending on flying for his original vacation. This would be a direct result of Sardex, strengthening the case that it is encouraging more sustainable consumption patterns (Seyfang, 2006).

> *"I took my vacation. This summer I spent my holidays in the area of Cagliari, Villa Simius. There was a village. 100% Sardex. We did 20 days of vacation in a tourist village. And I paid him in full in Sardex. Totally."*
>
> (Visit 2 - Business 76 - Interview)

There is an economic incentive for businesses who have unused or spare capacity to sell it through Sardex and receive SRD as payment. The other option could have been that this spare capacity is wasted. The concept could have a positive impact on the environment especially if the spare capacity is perishable, such as in the case of fruits or vegetables. However, there was evidence suggesting that Sardex is a tool to increase consumption, reflected in the views of business users who felt they had to spend to buy items that they didn't really want.

> *“For example, buying clothes, which I don't really care about...Maybe I wouldn't have done it. In my opinion it is basically a system to make the economy run more in terms of consumerism. Also...you find yourself having more money in your pocket”*
>
> (Visit 2 - Business 64 - Interview)

The increase in consumption would be contradictory to the founding basis of the environmental theme of sustainability which is considered through a framework of the limits to growth (Meadows et al, 1972; Goodland, 1995). Some ecological economists believe that societies need to be considering zero growth stationary economies (Kallis, 2011; Kallis et al, 2012; Hanaček et al, 2020) and hoped complementary local currencies could support this objective (Douthwaite, 1999; 2012). The increased economic activity that Sardex supports is detrimental to this objective. There is a little evidence that Sardex is reducing the throughput of matter and energy within the local economic and social system that would support the regenerative or absorptive capacities of the natural environment (Goodland and Daly, 1996).

Sardex appeared to be acting as a business tool to support and enhance the current dominant system, a process Seyfang (2001) described as ‘local economic development’. Her calls for a more radical approach or policy agenda she terms ‘sustainable local development’ (Seyfang, 2001) are largely unmet by Sardex. There was evidence that the local currency was supporting small reductions in ecological footprints without encouraging radical system-change.

6.3.2. Energy Efficiency and Renewable Energy

A central feature of the environmental theme of sustainability within a context of regional development is the uptake of energy efficiency measures and use of renewable energy sources (Teske et al, 2019; De Laurentis, 2020). There was a hope in Dini and Kioupkiolis (2019) that Sardex could play a role in addressing issues associated with climate change. Small businesses, the target market of Sardex, has been highlighted as experiencing an "energy efficiency gap" between the available technologies available and the actual uptake in the market, an issue that has been related to access to affordable credit (Scleich and Gruber, 2008; Dietz, 2010; Allcott and Greenstone, 2012). Although local currencies have had a strong association with environmental sustainability, there has been little evidence of their ability to directly support energy efficiency and renewable energy interventions (Dittmer, 2013).

Within Sardex there are companies who offer business users the ability to make interventions or 'requalifications' to reduce their energy usage. One of these companies offer a whole-building solution, allowing business users to install interventions such as insulation, LED lighting, heat pumps or solar panels. Although the company was very positive about participating within the Sardex circuit, ultimately his barrier is the spendability of the SRD he receives. He had made significant efforts to reorganise his business to maximise the spendability of SRD, but his core business supplies were imported into Italy.

> *"We can make a home from the construction side, from the electrical side to the hydraulic side. So we can make a home requalify a building or a country, a city or a region. All in Sardex."*
>
> (Visit 2 - Business 34 - Interview)

> *“The only thing I ask Sardex, it is not a criticism, it is to engage more. To find those companies that can provide me with those products that are needed today for energy requalification.”*
>
> (Visit 2 - Business 34 - Interview)

The credit facility within Sardex is used in a similar manner to a bank account overdraft. The above sections and previous chapter have focused specifically on the use of this overdraft-like credit facility, as it is the standard product available to the businesses in the network. The following section will focus on the evidence that Sardex can be used to provide an investment mechanism for green technologies (Seyfang and Longhurst, 2011). The initial part focuses on the limits of the standard credit facility and provides evidence of its use to support energy efficiency. The second part of the section focuses on the new product that Sardex was promoting at Sardex Mitzas (2018): Sardex Efficio (2021).

There were observations that suggest the standard credit facility and SRD income does have potential for providing an investment mechanism. In an interview, a cafe owner described how his heating unit had broken. He had engaged with Sardex about extending his standard credit facility so he was able to purchase a new one. There would be an efficiency improvement and reduction in greenhouse gas emissions from replacing the old heating unit with modern equipment. Although the cafe owner would not have seen it within the framework of an investment in green technologies, it does demonstrate that it is possible with the standard Sardex credit facility.

> *“He spoke to Sardex and they provided him a tailored credit line that was exactly the amount needed for a new heating system from a supplier within the network. He was then able to pay this back over time through sales at his cafe.”*
>
> (Visit 1 - Business 02 - Observations)

Another indication that the standard Sardex account and credit facility is used to support investments in green technologies was through interviews with an energy efficiency installer shown in Figure 6.2.

Figure 6.2. #iosonosardex social media campaign featuring energy efficiency installer



Although the Sardex Efficio product had been promoted at the Sardex Mitzas event, the business user described how their clients in particular were not yet aware of this product. It can therefore be supposed that the transactions that he discussed were mainly associated with the standard Sardex account and credit facility. He described how his business customers were always looking for ways to spend SRD, and that his company provides a way to use the local currency to reduce costs in euros. He outlined the sales pitch that he often used with Sardex customers.

> *"...you give me SRD, I'll give you euros."*
> (Visit 1 - Business 01 - Observations)

The way that the business described the transactions suggests that the majority of his customers were using the standard Sardex account. There is a significant distinction here when considering the desire of Seyfang and Longhurst (2011) to use local currencies as an investment mechanism. The type of transaction was more likely to be associated with the 'spendability' issue. Businesses may receive more SRD than they could spend, which leads this business to provide an option for purchasing energy efficiency products and services. For instance, the purchase of LED lighting for SRD would reduce the energy costs of the business, that is likely paid in euros, which would explain the sales pitch of turning SRD into euros.

Sardex Efficio (2021) is a separate credit facility for businesses to make capital investments within their businesses. Sardex outlined the product at Mitzas and stated that it had already extended additional credit of €4 million (SRD) to one hundred businesses. Sardex Efficio would be considered a separate account or credit facility

that is the standard one available to all businesses who use Sardex. In an interview with a retailer, she had received an additional credit facility through Sardex Efficio and showed me the separate balances on her computer screen.

> *"She then started showing us the computer screen and what her account within the Sardex platform looked like. It was displayed like internet banking, with her previous purchases and sales, alongside the amount in her account, the amount available in the credit line and the amount owed in Efficio."*
>
> (Visit 2 - Business 70 - Observations)

Sardex Efficio is like a loan product that businesses use to make capital investments. In the case of the retailer, she has received a large loan-type balance through Sardex Efficio, that she is paying off on a monthly basis from SRD income.

> *"She outlined that the investment...was actually being financed with the Efficio product, allowing her to borrow around €30,000, and she was repaying at a rate of €800 per month."*
>
> (Visit 2 - Business 70 - Observations)

Sardex stated that one hundred businesses were now using Sardex Efficio and there is a small number within my sample (12) using the product. A construction business user highlighted that the site in which the interview took place was financed by the Sardex Efficio product. The construction business received payment within SRD from the customer's Sardex Efficio credit facility, which he used to procure suppliers and

materials. The business user indicated that around 20% of his annual revenue was in SRD and that he had no issues locating suppliers for his projects.

> *"When I do work in Sardex I always buy in Sardex; I call him and I say 'look; I have taken this work in Sardex. If you give me all the materials in Sardex I buy from you. Otherwise I look for another supplier; anyway I can find it'. For paints for instance there are many. I asked him about saying 'if you give me in Sardex good; if not I go to another one'."*
>
> (Visit 1 - Business 03 - Interview)

Although there was no indication that the renovation was being conducted to high energy efficiency standards, it demonstrates that Sardex Efficio can be used for complex construction projects. One of the business users interviewed was from a firm that offered heating equipment installations, including renewable energy technologies, such as heat pumps and biomass boilers. Sardex highlighted through an article on how biomass pellets were now available in the circuit, sourced from sustainable forestry projects on the island (Sardex, 2019), something the business user confirmed. He stated that he had quoted businesses that were accessing the Sardex Efficio credit facility for biomass heating projects, although it was not clear if these projects had been delivered.

> *"We are making some estimates for some companies in Cagliari that have joined the credit line Efficio. In fact, we were practically required to work at 100% Sardex."*
>
> (Visit 2 - Business 77 - Interview)

The use of Eificio by small businesses to invest in energy efficiency and renewable energy technologies offers an innovative mechanism to close the ‘energy efficiency gap’ (Scleich and Gruber, 2008; Dietz, 2010; Allcott and Greenstone, 2012). Alongside tradespeople within supply chains associated with Sardex, we engaged an architect who conducted projects within Sardex Efficio. He highlights the higher cost purchases that they have due to the nature of the projects they worked upon.

> *“For our activity we pay a lot of Sardex, construction consultancy is expensive. It’s not like other activities that you pay in SRD everyday. Therefore there are moments when you have not accumulated SRD but having that credit line is useful.”*
>
> (Visit 1 - Business 22 - Interview)

Sardex Efficio is an interesting solution to the spendability issue. If a business is receiving too much SRD and struggles to spend it, Sardex can offer a larger credit facility for capital expenditure that can be paid back over a longer timeframe. Capital investments within business premises may grow the capacity of the firm and potentially increase the company’s income in euros.

> *“He's now opening a new bookstore. He's actually moving in. Thanks to the fund Sardex Efficio.”*
>
> (Visit 2 - Business 41 - Interview)

One case of Sardex Efficio identified was linked to the B2E initiative. The business user had in fact used the Sardex Efficio product as part of their B2E expenditure, borrowing an amount and was using it to renovate their home.

> *"When asked what sort of work she had done on her home, she got a video on her phone and showed us a digital recreation of the work being conducted. She said it was 100% in Sardex, stating that the architects, tradespeople and electricians all accepted Sardex."*
>
> (Visit 2 - Business 70 - Observations)

The Sardex Efficio product has demonstrated its effectiveness as a mechanism for capital investment. It could be described as another solution to address the spendability issue business users have. Although the Sardex Efficio product was new, there was evidence that it was in fact being used as an investment mechanism to support the installation of energy efficiency and renewable energy technologies.

6.4. Conclusions

Researchers and practitioners have been interested in how complementary local currencies can support regional development and have detailed a range of expansive aspirations (Bowring, 1998; Seyfang, 2009; Michel & Hudon, 2015). This chapter provided an overview of the initial contributions that Sardex is having to the economic, social and environmental sustainability themes of regional development.

The conclusions drawn around the economic contributions first considered the localisation of economic activity, a goal of local currency practitioners (Seyfang, 2001;

Ward et al, 2002). The research identified evidence that users of Sardex are switching suppliers within the circuit to conduct transactions in both SRD and euros. The endogenously-created basis of the local currency results in business users looking to maximise the 'spendability' of the local currency, as observed in Chapter 5. This switching of suppliers has a positive effect on regional development due to the businesses within the Sardex circuit being locally-based and independently owned. The research demonstrates that Sardex has achieved the goal of supporting the localisation of economic activity, an objective that commodity-based schemes like the Bristol Pound failed to achieve (Marshall and O'Neill, 2018).

The second point on the economic contributions centres on the evidence that Sardex is supporting businesses located within traditional high streets. The Business-to-Employee (B2E) initiative results in individuals travelling into city centres to spend their SRD within retail businesses clustered together. The recently launched Sardex Bisoo initiative hopes to further strengthen this trend through providing cashback in SRD to consumers who spend euros within retail businesses. There was initial evidence it was supporting behavioural change among consumers, a well-documented objective of other schemes (Graugaard, 2012). The B2E initiative was increasing the footfall experienced by retailers and in some cases resulted in them receiving a significant proportion of their annual revenues in Sardex. This innovative mechanism to support traditional high streets is dependent on first developing an active B2B circuit, however the insights do have relevance for researchers and policymakers considering how these spaces can be supported (Dempsey et al, 2011; Future High Streets Fund, 2019).

The final conclusion on the economic theme of sustainability within the context of regional development relates to the provision of credit to small businesses. There was

widespread recognition of the value of this service, even if the majority of the business users interviewed avoided using their credit facilities. A number of researchers have identified that small businesses have become an underserved demographic for financial services (Lee & Drever, 2014). This research demonstrated that Sardex successfully offers an alternative mechanism to provide liquidity to small businesses, which is also being blended with euros in payments. The development of partnerships with regional banks (Hakenes et al, 2009; RSA, 2018) within Italy suggests that the model employed by Sardex could be offered alongside the 'jigsaw' of financial services such as CDFIs, that are aiming to address the shortcomings of commercial banks (Pinsky, 2001; Aslan et al, 2018).

The chapter then considered the contributions Sardex is making to the social theme of sustainability within the context of regional development. The first conclusion focused on the ability of the local currency to support disadvantaged communities, an objective researchers have considered in other schemes (Seyfang, 2002; Gregory, 2012). There was evidence the 'social capital' generated within the Sardex circuit was being used as a peer support mechanism to help independent businesses struggling with depressed trading conditions (Motta et al, 2017). The credit Sardex provides was being blended with local authority grants targeted towards young entrepreneurs. This innovative financial mechanism may have relevance to debates on the value of entrepreneurship in supporting regional development (Prieger et al, 2016). There was some evidence that Sardex is being used to support business users from BAME communities, a demographic underrepresented by the traditional financial system (Aldridge et at, 2001). The research identifies that Sardex has made initial contributions to support disadvantaged communities through providing an alternative financial mechanism to entrepreneurs within these demographics.

The next set of conclusions with regard to the social theme relate to public and third sector multistakeholder partnerships that Sardex was engaging within to support the communities in which it operated. The European-funded DigiPay4Growth (European Commission, 2017) initiative supported the development of ‘Social Pay’, an initiative to allow welfare recipients to receive their benefit allowance within the Sardex circuit. The model has now been developed into ‘Local Pay’ which is being used by third sector institutions to support families in extreme poverty. The research demonstrates how cash-like funds can be targeted at families that require additional support whilst restricting the spendability of the currency to include local businesses. This innovative mechanism has a potential contribution to debates on how multistakeholder partnerships can support regional development (Pattberg et al, 2012). Furthermore, there are potentially initial insights into the development of a model of Universal Basic Income (Howard, 2018; Hoynes and Rothstein, 2019) that has maximum impact through restricting access to only independent small businesses. This restriction does however raise moral concerns and practical issues, as noted in the chapter.

The final part of the chapter considered the contribution that Sardex was having towards the environmental theme of sustainability in the context of regional development. The first conclusion that can be drawn relates to the question of whether the model is supporting a reduction in the environmental impacts of products and services offered by local businesses (Seyfang and Smith, 2007; Seyfang and Longhurst, 2011). The research recognised that Sardex was potentially appealing to individuals who already had a strong environmental ideology and therefore offer products with reduced environmental impacts, a process that had been highlighted in other schemes (O’Doherty, 1999). However, the economic localisation identified in the first section did seem to be supporting the sourcing of food through the circuit. Cafes

and restaurants are acquiring seasonal fruits and vegetables grown, which reduces food miles, especially if they are replacing imported foods available in multinational supermarkets. This finding resonates with research that regionalising food supply chains could have a positive impact on regional development (Maye et al, 2007; Jarosz, 2008).

There was evidence that Sardex was being integrated within production supply chains due to the ‘spendability’ restrictions within the local currency. However, this additional level of economic activity could be considered as contradictory to ecological economic hopes that local currencies could support the development of low growth or zero growth economies (Kallis, 2011; Kallis et al, 2012). Although there are some incremental improvements in the environmental performance of products and services, Sardex largely supports the dominant economic system and increases economic activity (Seyfang, 2001).

The final point regarding the environmental sustainability theme relates to the question of whether Sardex is supporting the implementation of energy efficiency measures and renewable energy technologies, a well-recognised objective (Teske et al, 2019; De Laurentis, 2020). The research found that due to the participation of small businesses offering energy efficiency and renewable energy technologies it is possible to use SRD to improve the energy performance of the built environment. The recently launched Sardex Eificio (2021) product provided an additional credit facility to allow business users to make substantial capital investments that includes energy efficiency measures and renewable energy technologies. The credit-based currency provides a mechanism to close the “energy efficiency gap” in small businesses that researchers believe is in some part a result of access to cheap finance (Dietz, 2010; Allcott and Greenstone, 2012). Sardex supports small businesses to make capital investments and there were

low and zero carbon energy technologies available for these purchases. Although evidence of this is identified within interviews, it appears to be more of a side feature of the local currency and does not necessarily mean that business users would access the credit facility to make investments in energy efficiency and renewable energy technologies.

The research has identified a range of initial contributions that Sardex is having on the three themes of sustainability within a context of regional development. It provides a case that it is meeting some of the more expansive objectives that researchers and practitioners have hoped complementary local currencies could achieve, although have failed to observe within other predominantly commodity-based models. The research has identified that Sardex is initially delivering a form of regional development through meeting individual sustainability objectives. The next chapter considers the situation of UK schemes in implementing similar endogenously-created credit-based models.

7. HOW ARE UK LOCAL CURRENCY SCHEMES PROVIDING CREDIT TO SMALL BUSINESS AND IS THIS CONTRIBUTING TO REGIONAL DEVELOPMENT?

This chapter considers the ability of local currency schemes within the United Kingdom (UK) to provide credit to small businesses and support regional development. The chapter has two sections that reviews two ontologically distinct models: exogenously-created commodity-based versus endogenously-created credit-based. It provides a framing to understand the different ontological perspectives of the role of money and credit within regional development (Rodriguez-Fuentes, 1997). These models are explored through three subsections: an overview of schemes applying the model, their ability to offer credit and an exploration of the contribution to regional development. The chapter addresses my third research objective to understand the ability of local currencies in the UK to offer credit to small businesses and contribute to regional development.

7.1. Exogenously-Created Commodity-Based Local Currency Schemes

7.1.1. Overview of Local Currency Schemes

The two dominant exogenously-created commodity-based local currency models within the UK are Convertible Local Currencies (CLCs) and cryptocurrencies. Over the period of the research, there were launchings of new CLCs in the Lake District (BBC News, 2018) Liverpool and East London (BBC News, 2017), alongside cryptocurrency schemes in Hull, Scotland and Belfast that all aimed to develop a scheme within their respective spatial scales. I collated information on the emerging and more well

established schemes and made inquiries about their ability to offer credit, which is displayed in Figure 7.1. The focus of these local currencies were largely on small businesses that aim to address the shortfall of LETS and timebanks (Ryan-Collins, 2011, Dittmer, 2013). The stated objective of many of these schemes was to stop the "leakage" of funds from a local spatial scale (Ward et al, 2002; Cato and Suárez, 2012).

Table 7.1. Credit offered in exogenously-created commodity-based local currency schemes.

Name	Location	Status	Credit Offered?
Birmingham Pound	*Birmingham*	*Did not form*	*No*
Bristol Pound	*Bristol*	*Operational*	*Yes*
Brixton Pound	*Brixton, London*	*Operational*	*No*
Colu Belfast Coin	*Belfast*	*Initial Scheme*	*No*
Colu East London Pound	*London*	*Pilot in 2017- 2018 - discontinued in current form*	*No*
Colu Liverpool Pound	*Liverpool*	*Pilot in 2017- 2018 - discontinued in current form*	*No*
Exeter Pound	*Exeter, Deven*	*Closed in 2018*	*No*
Hullcoin	*City of Hull*	*Operational*	*No*
Kingston Pound	*Kingston*	*Operational*	*No*
Lake District Pound	*Lake District*	*Closed in 2019*	*No*
Lewes Pound	*Lewes*	*Operational*	*No*

Scotcoin	*Scotland*	*Operational*	*No*
Stroud Pound	*Stroud, Gloucestershire*	*Closed in 2016*	*No*
Totnes Pound	*Totnes, Dorset*	*Closed in 2019*	*No*

Nesta (2021), the UK innovation agency, hosted a local currency event in London that brought local currency schemes and funders together (Nesta Event, 2019). The event focused on the development of blockchain and cryptocurrencies. At that event, third sector funders who had financed the core running costs of the numerous local currencies were openly sceptical with the current CLC model and their impacts.

> *"...the industry lacked any comprehensive measures or data on its impact, and that the actual effect on the local economies was negligible. There had been significant support for the models and yet the industry really needed to demonstrate a measurable impact…Bristol Pound had received more funding than Bristol Pounds in circulation, which emphasised this point."*
>
> (UK - Local Currency Event 03 - Observations)

The CLC schemes themselves recognised they needed to develop more viable financial structures, with transaction fees highlighted as an option. The Birmingham Pound Steering Group had identified it needed around £10.1million annual transactions within the Birmingham Pound (2018) at a 1.5% transaction fee to maintain core running costs of the local currency (Bowles, 2017). Bristol Pound (2021), the largest and most financially supported local currency, stated they had around £5million worth of transactions in total between 2013 and 2017 (Madle, 2017). Even if a

transaction fee could be applied to all of these transactions, which is not possible on the exchange of physical notes, it would be below a financially viable level. Scheme managers at the event stated that users had been sceptical of paying a transaction fee to participate within a CLC. These perspectives reflected the criticism of Cato and Suárez (2012) who highlighted that other costs such as cash handling and credit card charges are often not considered by small businesses. Furthermore, it reflects the issues highlighted in previous studies on the difficulties scaling CLCs (Graugaard, 2012).

At the Nesta Event it was announced that Totnes Pound (2021) were intending to close (BBC News, 2019). It was significant as Totnes, Devon was the first UK location to develop a CLC and had been featured in early academic studies on the model (Ryan-Collins, 2011; Longhurst, 2012). The Director of the Totnes Pound had some strong words for the sector.

> *"It had been an uphill battle to encourage the local community to conduct transactions in the currency, and recognised it made little sense as individuals were already shopping in local businesses. In my opinion, GBP-backed local currencies had their day".*
>
> (UK - Local Currency Event 03 - Observations)

The development of the Lake District, East London and Liverpool Pounds reflected the contemporary funding environment. Lake District Pound developed a greater commercially-focused structure that sold paper notes to tourists. It encouraged local spending and was financed on the basis that many visitors would take the notes away as souvenirs and not convert back to pounds. On the Lake District Pound website this

approach was evident as content was available in Chinese, Korean and Japanese (Lake District Pound, 2019). This is a change of focus for local currencies in comparison to previous studies which considered the focus as local middle class communities with strong environmental philosophies (Aldridge et al, 2001). It may also reflect the contrasting objectives highlighted by Seyfang (2001) and North (2014a) between radical alternative approaches and schemes that aimed to support the dominant system. The business manager of the Lake District, provided an outline of this strategy:

> *"'Lake District Pound is in the souvenir business; we want tourists to purchase these, but then not spend them' - holding up a shiny collection of Lake District Pounds. He recognised the contradiction between wanting Lake District Pounds to be used within the National Park, and wanting tourists to buy them and not spend them."*
>
> (UK - Local Currency Event 03 - Observations)

The approach potentially offered a financially viable structure, but comes with a contradiction. The Director of Totnes Pound highlighted this issue within the CLC model financing structure, as it actually relied on "leakage" of the local currency from the local space. In an interview, he stated how the Totnes Pound had become a significant collectors' item, and that original mint condition notes were sold many multiples of the face value. Collectors editions of the notes were provided by the Totnes Pound for sale outside of the local space, alongside there being a second-hand market for collectors. Ironically, many of the economic studies that promote local currencies identify leakage of pounds away from a locality as one of the problems they

were attempting to solve (New Economics Foundation, 2002; Cato and Suárez, 2012). Furthermore, it would contradict the aims of some economic geographers who argued complementary local currencies could stop the removal of the means of exchange from a local spatial scale (Seyfang, 2000).

> *"I think he paid £700-£800 for it. That's because this is a joke. I mean, this is a joke about local currencies. As they are currently set up, that actually the way you pay for them, unless you get huge grants, is by leakage"*
>
> (UK - Local Currency Scheme Manager 07 - Interview)

The CLC schemes have operational and regulatory costs in maintaining their circuits: pounds need to be stored in a bank account acting as commodity-like reserves. If there is a digital version of the local currency, it attracts financial regulation in the form of the Financial Services Direct 2 (FSD2) (FCA, 2021). In a financially viable structure these additional costs may need to be passed to users. It is difficult to justify these charges especially if the consumer is going to spend their pounds within local businesses anyway. Within interviews with local currency schemes, the fact that their currencies were 'backed' was promoted as a positive feature.

> *"Bristol Pound, which is sterling-backed; you can't lose your money"*
>
> (UK - Local Currency Scheme Manager 04 - Interview)

The CLCs developed in the early 2010s were able to attract grant finance for operational costs. However, the Lake District, East London and Liverpool Pounds formed in a different funding environment.

> *"...who's paying for it? And the answer is well if it's coming through grants and that's not very, it's a very expensive way of maintaining some kind of community solidarity and persuading people to shop local."*
>
> (UK - Local Currency Scheme Manager 07 - Interview)

Colu (2021), a venture capital-backed Israeli startup applied blockchain technology to the CLC model. Colu East London Pound and Colu Liverpool Pound were funded by $20.7million worth of venture capital (Crunchbase, 2021) that aimed to identify a financially viable business. The development of the Colu was highlighted by Torre and Seang (2019) as the "digitalisation of local currencies". They encouraged consumers to join their networks by offering an incentive: every £1 converted into these currencies, users received a £1.10 balance. However, as the models were exogenous in nature, Colu cannot create these new funds endogenously. An interview with a staff member confirmed these funds were allocated from the marketing budget.

> *"Signups were encouraged with the Colu marketing budget, that has provided an 'uplift' to the money converted into the Liverpool Pound - £1 = L£1.10."*
>
> (UK - Local Currency Scheme Manager 01 - Observations)

There are experiments to create a cryptocurrency or digital token within a local space: Hullcoin (2021), Scotcoin (2021) and Colu, Belfast (2021). Hullcoin generates cryptocurrency and allows charities to give it away for community initiatives (Bowles, 2017). Hullcoin received a grant from The KeyFund (2021) to finance its operations and it was not clear what financial planning had been undertaken. Colu Belfast is experimenting with a community reward token in partnership with Belfast City Council (2021), but its financial structure is unclear (Belfast City Council, 2019). None of these schemes are backed by pounds, but the tokens could be considered as a digital commodity and ontologically similar to a local currency backed by GBP. The issuance reflects monetarist perspectives of money highlighted in other studies of cryptocurrencies (Rogojanu & Badea, 2014; Weber, 2014).

An interview with the founder of Scotcoin found that their model had become financially unstable due to transaction fees. They built Scotcoin upon the Bitcoin blockchain and when the price of Bitcoin significantly increased in 2017, the Scotcoin scheme became unviable. This would contradict the hope by earlier studies on cryptocurrencies that their low fees could allow them to be used to support the world's unbanked (Dierksmeier & Seele, 2016).

> *"...over the years as the price of Bitcoin bubbled, the transaction costs bubbled too and it meant Scotcoin became completely unviable, as it would cost £1.50 to transfer £10, for instance."*
>
> (UK - Local Currency Event 01 - Observations)

Sector experts recognised that the CLC models had not lived up to the expectations of the local currency innovators in the early-2010s. They discussed why schemes still pursue the CLC model, even though it had struggled to scale over the past decade.

> *"I think they believe the Bristol Pound works and it's a good thing. They can also say that there's some infrastructure there if they wanted to do it. So if you can slipstream something successful, you might have some success yourself"*
>
> (UK - Local Currency and Finance Expert 06 - Interview)

> *"...the sterling-backed system was quite easy, you know, it was very low risk. It still, it's still a bit radical, but as low risk because you know it is because people knew the real money behind it."*
>
> (UK - Local Currency and Finance Expert 04 - Interview)

Since the data collection, the evidence that the CLCs had not established a viable financial model has become obvious. Stroud, Totnes and Exeter Pounds ceased trading and Bristol Pound announced the end of its local currency system (Bristol Post, 2020). The Lake District Pound stopped its operations stating it was unable to identify a viable business. The Colu Liverpool and East London Pounds ceased operations, but the Belfast Coin was operational. One sector expert believed the closing of the CLCs were inevitable.

> *"I don't know whether we're starting to see the end of the the, you know, the beginning of the end for these local currencies because I think, certainly the most of the funders that I know are kind of like; " we've done this, we've tried this route, we funded*

> *are like I'm a bit, you know, you're not going to put any more into that"*
>
> (UK - Local Currency and Finance Expert 02 - Interview)

The CLC schemes require funding, transaction fees, leakage or venture capital finance to provide their operational running costs, whilst providing limited benefit to users. The inability to identify a viable business model resonates with observations of researchers that they were reliant on elites or state support to function effectively (Dittmer, 2013). Although many of these models have now largely ceased operations, the next section will discuss the ability of these systems to offer credit to small businesses.

7.1.2. Provision of Credit within an Exogenously-Created Local Currency

The majority of local currency schemes within the United Kingdom (UK) have a greater association with exogenously-created commodity-based money. CLCs are structured to have intrinsic value by being “backed” by pounds similar to a metallist perspective of money (Knapp, 1924). The ability of these local currencies to offer credit requires the lending of this commodity-type currency from someone who holds it, to someone who requires it. It would be similar to a traditional understanding of credit where “deposits create loans” (Rogers, 1989). One sector expert provided a simple explanation. It would reflect perspectives within economic geography on the role of money and credit within regional development. Credit is provided from the deposits of savers leant out to borrowers, and the total amount of loans equates the total amount of savings within a regional space (Chick and Dow, 1988; Rodríguez-Fuentes, 1998; Dow and Rodriguez-Fuentes, 1997).

> *“I don't know if anybody actually taught that that's the way the system works, but it would be easy to assume if you weren't taught otherwise, that money lent must have been saved beforehand.”*
>
> (UK - Local Currency and Finance Expert 06 - Interview)

This has practical implications in whether CLCs can provide credit to small businesses. All of the currency schemes and sector experts recognised that there was a demand for credit among local businesses. It confirmed studies that business credit requirements were being unmet by traditional financial institutions (Appleyard, 2013; Henry et al, 2014; 2017).

> *“Oh, the market failure is massive.”*
>
> (UK - Local Currency and Finance Expert 05 - Interview)

> *“...if you're adding credit that must be a good thing. That's actually what people need, it's credit and the local currencies as currently set up, really don’t do that.”*
>
> (UK - Local Currency Scheme Manager 07 - Interview)

The use of a local currency to provide credit is deemed to be worth investigation, as they were already operating within these communities. There was recognition that the currency model may struggle to meet the demand for credit, due to their inability to endogenously create new money like Sardex.

> *“Yeah, I mean complementaries obviously to me the sensible place to start and in terms of... Yeah, so that there's this gap in the [small business finance] market and that's always a, that's also a good place to start.”*
>
> (UK - Local Currency Scheme Manager 05 - Interview)

> *“[CLCs] could never ever compete with the likes of Barclays because they can't create money.”*
>
> (UK - Local Currency and Finance Expert 05 - Interview)

Among founders and advisors to the Bristol Pound there was a notion that the CLC was a precursor to an endogenously-created Business-to-Business (B2B) mutual credit system like Sardex. There was a recognition that a CLC can only ever have a limited impact, but it can test the market desire to access credit within a local currency. They believed that the CLC model is easier to understand and therefore have greater uptake.

> *“...the decision was made that would go to the sterling-backed model to start with. Yeah in the hope that we address some of the limitations of other sterling-backed systems...make a big splash of that, get a lot of people using it to a certain level. Then we can introduce mutual credit alongside it at a later date.”*
>
> (UK - Local Currency and Finance Expert 04 - Interview)

> *“So we came up with ways of transitioning it more slowly. Where you test the capacity for lending in a local currency full stop, is there any capacity or any interest in lending and borrowing the*

> *local currency where you can only spend it in a restricted network within a region."*
>
> (UK - Local Currency Scheme Manager 02 - Interview)

The aim was to start a commodity-based local currency and transition into a credit-based system. The business credit within the commodity-based system would therefore need to "exist" prior to the lending taking place and be borrowed from institutions or individuals, known as 'loanable funds theory' (Fontana, 2003), the perspective that was found to form the majority of the research assumptions within regional development studies (Dow and Rodriguez-Fuentes, 1997). This raises tensions between the owners of capital and those who require credit.

> *"...what did that conversation look like to capital owners, versus what does that look like, and how does that feel in your [local currency] system? Borrowing £50 million from normal capital markets or individuals, and [they] will want their interest on this is saying okay, meeting the needs of the existing membership and they're not necessarily going to completely overlap, of course they don't."*
>
> (UK - Local Currency Scheme Manager 02 - Interview)

The transitioning from an exogenously-created commodity-based local currency to an endogenously-created credit-based local currency would represent a first within the sector. As highlighted in Chapter 5 with Sardex, it is not technically impossible to allow convertibility within a local currency that is structured as a B2B mutual credit system, but it would fall within the remit of financial regulation (PSD2, 2021). Bristol Pound scheme managers believed that a 'floating fund' could interact between the two local

currency models for a period of time. The fund would allow individuals with a positive balance in the B2B mutual credit system to exchange their currency for Bristol Pounds. In this arrangement, the fund takes significant risk. Individuals could swap units from the B2B mutual credit system for Bristol Pounds from the fund, which could then be converted to pounds. The floating fund might then be depleted of Bristol Pounds and have units from the B2B mutual credit system left on its balance sheet. The founders believed a time limit on exchangeability may discentivise this behaviour.

> *"Actually what you do is you set up a floating fund that allows for a period of time only one-to-one, never lending out more mutual credit than you've got in Sterling backing. So it is backed, but it's not, technically it's independent, if people want out for us at least initially, you can say; 'yes, you can have out' and you have this fund to, which you, which allows you to have that backing for a while to see how much spending goes on within the network."*
>
> (UK - Local Currency Scheme Manager 02 - Interview)

The B2B mutual credit system did form under the name "Prospects" and is explored in more detail later in the next section. Interviews with managers of the Bristol Pound and publicly available information at sector events indicated that the Bristol Pound business loans initiative was about to be launched.

> *"They also hoped that the introduction of credit may encourage a greater volume of transactions within the [Bristol Pound] system."*
>
> (UK - Local Currency Event 01 - Observations)

The partnership with the Bristol Credit Union (2021) has been recognised by previous research as being a key multistakeholder partnership that allowed Bristol Pound to attain a larger scale (Dittmer, 2013; Ayres and Bird, 2018). Bristol Credit Union is a regulated institution which allowed Bristol Pound to create electronic money for digital payments to meet the requirements of PSD2 (2021). This was outside of the scope of the smaller CLCs, but Bristol Pound did offer the ability to use their infrastructure for a fee. This partnership also allowed Bristol Pound to initially develop its pilot Bristol Pound business loans initiative within its local spatial scale.

> *"...the credit union are actually providing the funds, so what the credit union has said is that they'll make available £50,000 for this pilot scheme with up to five loan scheme agreed, in that pilot phase, and each loan will be between one and fifteen thousand pounds and repayable over twelve equal instalments with zero interest."*
>
> (UK - Local Currency Scheme Manager 03 - Interview)

The partnership with the Bristol Credit Union aims to partially overcome the tension between investors and lenders, as it operates a cooperative. The notion of zero interest is a central point for the ontological discussion between credit-based and commodity-based local currencies. Bristol Pound is backed by pounds which will always have an interest rate attached. Even if the Bristol Credit Union is aiming to benefit the community, it still has a cost of acquiring and holding essentially commodity money, as credit unions are unable to create money like commercial banks (Pinsky, 2001; Aslan et al, 2018).

> *“I have to pay in interest at [figure] percent. But you know on a decreasing balance as they get paid back, obviously. And, so we have to find a way of making it cost neutral to us.”*
>
> (UK - Local Currency Scheme Manager 03 - Interview)

Bristol Pound aimed to overcome this issue with a novel instrument termed the ‘First Supplier Levy’. The notion was that the borrower can access the funds at zero interest, but the first supplier that delivers the goods and services to the business borrowing the funds would pay a 5% finders fee.

> *“I think the interest-free loans is a potentially interesting development...you can see the logic for it, why should the person who takes out the loan be the one that has to pay all of the consequences? Especially as the person who is getting the most advantage is the person who is flogging the washing machine, or whatever it is.”*
>
> (UK - Local Currency Scheme Manager 04 - Interview)

The loan application process would include questions about the type of suppliers required. They may already accept Bristol Pound or they could be approached by the scheme.

> *“...it's in Bristol Pound, they can only spend it with suppliers who are within Bristol Pounds, its part of the application process...we will make sure we work with them in broker those relationships and if necessary gets a new suppliers into the Bristol Pound system”*
>
> (UK - Local Currency Scheme Manager 03 - Interview)

The model is potentially a precursor to an endogenously-created credit-based B2B mutual credit system. The borrower would become used to accessing credit at zero interest, which is available in the mutual credit system. The supplier would get used to offering its services within a local currency and in a future B2B mutual credit system would not have to pay the First Supplier Levy. The economic impact of the Bristol Pound business loans initiative may be limited, as the money would already exist within local institutions and not newly created money. The Bristol Pound was the only CLC or commodity-like local currency within the UK that considered credit.

7.1.3. Exogenously-Created Local Currencies and Regional Development

The CLC schemes interviewed were still focused on the notion that they localised economic activity through shortening supply chains and this would have positive social and environmental outcomes (Graugaard, 2012; North and Longhurst, 2013). The exogenous nature of the schemes meant they could not stop the outflow of money from their spatial scales, as the local currency could be simply converted into pounds. Economic geographers had highlighted the ability to stop the flow of money to financial centres from peripheral regions as a key objective of local currencies (Hughes, 2005; Leyshon and Thrift, 2007), which exogenously-created commodity-based systems do not meet. It is therefore difficult to see how they could support local resilience or offer a buffer against unstable global systems (Douthwaite, 2000; Aldridge et al, 2003). Although the findings of Marshall and O'Neill (2018) indicated that CLCs were not succeeding in localising economic activity within their spatial scales, scheme

managers did still believe this was its main contribution to the sustainability themes of regional development.

> *"So the Bristol Pound, if you follow it through, will shorten supply chains, and therefore save carbon, that's the kind of simplistic way that we were environmentally helpful, supporting sustainability if you like."*
>
> (UK - Local Currency Scheme Manager 04 - Interview)

There was a narrative evident within the interviews that CLCs support less tangible behaviour changes, an observation also made in the literature (Seyfang, 2009; Mock et al, 2013). Although the CLCs themselves do not demonstrate significant impacts on regional development, interviewees believed that their existence raised a greater awareness of monetary issues, an objective that Dittmer (2013) believed should be a main focus of activists.

> *"...what has the Bristol Pound actually achieved so far, in terms of making a difference to the Bristol economy. I think it raises awareness a lot in it, and certainly got some people thinking and behaving slightly differently"*
>
> (UK - Local Currency Scheme Manager 03 - Interview)

The more recent development of more commercially-focused CLCs appeared to lose the connection to the three themes of sustainability and regional development in favour of promoting a business offer. Lake District Pound and the Colu East London and Liverpool Pounds had no publicly-stated regional development objectives. Although

the premise is still the same, the benefits were focused on supporting independent businesses through increasing footfall of tourists, opposed to the wider objective of encouraging economic localisation. It could be considered through a framework of the less radical "local economic development" of supporting the dominant system (Seyfang, 2001a; North, 2014a).

> *"Lake District Pound is all about consumers and getting them into the local businesses rather than into the big Holiday Inn."*
>
> (UK - Local Currency Scheme Manager 03 - Interview)

The recent development of locally-based cryptocurrencies such as Scotcoin, Hullcoin and Belfast Coin had some relevant objectives to regional development. Hullcoin has social objectives through rewarding volunteering. Belfast Coin was presented within the framework of Belfast's regional development strategy, which includes a low carbon transition. Belfast Coin would act as an incentive token to encourage people to adopt greener lifestyles. These were termed "Tracks" and included recycling, public transport and using a reusable bag. It wasn't clear at the time of writing this thesis if Belfast Coin was live.

> *"Making Belfast thrive with Colu. Tracks that encourage greener lifestyle"*
>
> (Colu, 2021: https://site.colu.com/belfast)

The CLC models or cryptocurrency models did not demonstrate any significant innovations in supporting regional development. The development of the Bristol Pound business loans initiative was considered within the wider objectives of localising the economy. It was believed it would increase the volume of transactions in the Bristol Pound resulting in a positive impact for regional development.

> *"...there's two things that aren't there in terms of the power that the currency has to make a difference. One is the amount of money in the bucket, does it increase that? And the other is, you know, the speed at which it or slowing it, you know, is how quickly that money is moving through the system. Yes, and I'm hoping that this work [Bristol Pound business loans initiative] will really do both."*
>
> (UK - Local Currency Scheme Manager 03 - Interview)

The Bristol Pound business loans initiative was considered by founders as a possible mechanism to address the lack of a financial viability that the CLCs demonstrate. It was argued by interviewees that through offering a more commercial service, the Bristol Pound may justify transaction fees.

> *"...so finding ongoing grant funding is much more difficult. So we need to now really focus on transitioning to a trading model, where the currency funds itself"*
>
> (UK - Local Currency Scheme Manager 03 - Interview)

The Bristol Pound business loans initiative was considered to support the Bristol Pound to make an impact within the city. If the scheme was able to scale through

increasing the volume of transactions in the network through the loans initiative, then it could use its position of influence to encourage more behavioural changes.

> *“Let's say to be a member...you've got to have a cycle-to-work policy, a waste policy, a CO2 policy, a policy on earnings, the ratio between CEO and lowest paid worker and it comes with an agreement....which would limit the number of members, but we'd be able to say and all of this trade that we've enabled is greener, fairer, more inclusive”*
>
> (UK - Local Currency Scheme Manager 03 - Interview)

The provision of credit within a commodity-based currency has limited examples within the UK. The Bristol Pound business loans initiative demonstrated that there is an opportunity to provide credit within a local currency structured as a commodity. However, the scheme did not have explicit regional development objectives, but features as a mechanism to sustain the Bristol Pound. There were limited impacts identified by exogenously-created commodity-based schemes towards meeting regional development objectives.

7.2. Endogenously-Created Credit-Based Local Currency Schemes

7.2.1. Overview of Schemes

The aim of this section is to understand how endogenously-created credit-based models of local currency have been applied within the UK. The dominant model: Business-to-Business (B2B) mutual credit systems is like what is being employed by Sardex. The recruitment of research participants initially focused on community-based

schemes operating within local spatial scales, with only the Bristol Pound ‘Prospects’ scheme fitting the criteria. There were examples of schemes operating with a greater business-focus: Commercial Barter Networks (CBNs), which have received some academic attention (Stodder, 1998; Kaikati and Kaikati, 2013). Due to the limited number of community-focused B2B mutual credit systems operating at a local spatial scale and lack of recent research into these schemes, CBNs were included. The schemes that were contacted and agreed to be interviewed are collated within Table 7.2 below.

Table 7.2. Endogenously-created credit-based local currency schemes interviewed

Name	**Location**	**Status**	**Credit Offered?**
Bartercard	*UK and world wide (Australian Franchise)*	*Operational*	*Yes*
BBX	*UK and world wide (Australian Franchise)*	*Operational*	*Yes*
Open Credit Network	*London, UK*	*Startup*	*Yes*
Prospects	*Bristol*	*Did not form*	*Yes*
TBEx	*Aberdeen and USA*	*Operational*	*Yes*
Yewtrade	*London, UK wide*	*Operational*	*Yes*

The first area of consideration aimed to understand why there are two seemingly different approaches to implement the B2B mutual credit system model. The literature

review established that there has been limited research into community-focused applications of B2B mutual credit systems at local spatial scales within the UK (Healey, 1996). There was a recognition of the existence of commercial barter networks operating ‘private currencies’ in Dittmer (2013). When interviewing sector experts I aimed to understand these differing approaches between community-focused schemes and CBNs.

> *“I think there is a kind of commercial barter networks [in the UK], which often flies under the radar of alt currency people and practitioners interested in mutual credit and because of the really strict kind of commercial nature some of these companies, that do think they are different to the way that we would necessarily, you know, intuitively think of mutual credit.”*
>
> (UK - Local Currency and Finance Expert 04 - Interview)

> *“I think the difference is only one of intention really…this [mutual credit systems] isn't just a way of making money for the founder, this is an economic intervention.”*
>
> (UK - Local Currency and Finance Expert 06 - Interview)

The sector experts highlighted that CBNs were predominantly profit-motivated organisations, whereas local currencies were considered an ‘economic intervention’ within a framework of regional development. Unlike the complementary local currencies, the CBNs had little relationship to space, even though they appeared to be applying a successful currency model. Economic geographers believed that money relies on communities of belief to support adequate circulation within spatial circuits (Lee, 1999; Harvey, 2006), the focus of CBNs was to grow this community of belief

through appealing the self interest of its users across a global scale, with the aim to ultimately profit from the currency scheme. The difference was considered to be within the objectives and governance of the organisation implementing the B2B mutual credit system (North, 2014a). The privately-owned nature of the CBNs raised scepticism among the experts, whereas there was a unanimous view that the local currency versions of the model should be cooperatively-owned that would meet the interests of its community of belief, reflecting the literature on the topic (Bollier and Conaty, 2015; Augustyn, 2017). These views were also evident among stakeholders of Sardex discussed in Chapter 5. A local currency structured as a cooperatively-owned mutual credit system was perceived to have a stronger ethical basis by sector experts.

> *"...the fact that the governance, ownership and transparency and all of that stuff, ethical values, is there, which isn't generally in the barter industry."*
>
> (UK - Local Currency and Finance Expert 01 - Interview)

> *"So the cooperative model is right in these instances, but you've got to be focused on getting the business working, not just the community side of it, but also I think you need, you want to have those ethics, locked down somewhere. So you can't be abused in the future."*
>
> (UK - Local Currency and Finance Expert 04 - Interview)

The first reason for the belief that governance of mutual credit systems is important is related to the endogenous nature of the currency created. Douthwaite (2000) termed them "people-created monies" as participants have access to a credit facility and when they spend it, they create money. The sector experts believed that a circuit that allows

users to create money should be owned by its members. The WIR, Switzerland demonstrates this concept as it has been a cooperative since its inception in 1933 (Stodder, 2013). The second issue arises from the power the scheme managers accrue from a circuit that creates money. The sector experts were aware of instances in the commercial barter industry where the managers of privately-owned networks were abusing their position. The issue would reflect the notions within economic geography literature about the connection of money and power (Ogborn, 1998; Agnew, 2005; 2010), albeit existing in much smaller context.

> *"I think that's happened a lot in the [United] States, somebody sets one up and the original owners or founders then buy an awful lot of stuff through the system so they go into huge negative balance on the system and then it folds, or they run away."*
>
> (UK - Local Currency and Finance Expert 01 - Interview)

There was some evidence among the interviews with previous customers of CBNs within the UK of scheme managers spending the currency. One of the interviewees was previously a hotel owner and the CBN were using her premises for meetings, including wanting to spend the currency at her bar. She described a situation where the owners of the CBN wanted to pay the bar tab with their own currency.

> *"Yeah, they came down...it was like 25-30 reps, was like a motivation thing. Well it did kick off between me and them, because they didn't want to pay the bill, when they were supposed to, and they didn't want to pay the rest in cash. Eventually they coughed up, because I kicked off, because they had a budget of about £300 and they spent £800 at the bar. And they didn't want*

> *to pay the rest and they were trying to push the rest on [commercial barter currency], and I said no, because I can't do it, there was quite a standoff about it. I think [commercial barter network] were abusing it."*
>
> (UK - Commercial Barter Network Customer 02 - Interview)

The issue gets to the heart of the understanding of money within the complementary local currency systems. The use of a distributed ownership model is a potential method to increase the trust of endogenously-created units of currency (Ruddick et al, 2015). The Convertible Local Currencies (CLC) were sterling-backed and therefore scheme managers could not legally create more units without having more pounds. Within B2B mutual credit systems, the currency is created as credit and scheme managers could in theory abuse their powerful position in the circuit to create an unlimited amount of credit to purchase their customer's products and services. Potentially, these issues also relate to the approach of CBNs to attempt to build circuits that are not specifically grounded within a local or regional space. Economic geographers have highlighted that financial systems are inherently spatial (Martin, 1999), however the aim of CBNs is to operate digital circuits at a global scale. The loss of connection to a local or regional space may contribute to the undermining of trust within their currencies, alongside their potential abuse of their position of power in their circuits. Cooperative ownership may encourage greater transparency and trust about the balances and units of currency in the circuit (Bollier and Conaty, 2015; Augustyn, 2017).

The local currency and small business finance experts interviewed believe that B2B mutual credit systems is a model that local currency practitioners should now be pursuing. There is recognition that the CBNs had proven that the model could scale,

something that the previous models applied by local currency schemes had failed to achieve.

> *"...it's only really the kind of the reinvigoration that Sardex has given is forcing everybody to have another look at this and say hey, 'this is a fantastic model, can we not actually get this to work now?'."*
>
> (UK - Local Currency and Finance Expert 02 - Interview)

Another element that is addressed by sector experts was the differing culture between local currency schemes and CBNs. They all highlight the concerns of high costs and aggressive sales tactics that are employed by CBNs. There was little exploration of whether this was the reason that these schemes appeared to have financial viability and demonstrate scalability. My own experience working within the local currency sector was that the culture of local currency schemes did not desire to have this approach (Bowles, 2017).

> *"[CBN] opened up in town and started selling and it's quite an aggressive sales-led model and actually at one point, I could look their office was quite close to mine, and you could look up through the window and you can see a massive board on the wall that was quite clearly list of sales targets and you know, that kind of sales board of who's doing well, but I know it's quite aggressively sold."*
>
> (UK - Local Currency and Finance Expert 01 - Interview)

All of the CBNs I interviewed demonstrated a different culture than the local currency schemes. They explained their scheme with a greater focus on the benefits to the

individual business, appealing to their economic self interest. The two local currency schemes that were aiming to apply a mutual credit system were Prospects, which did not form, and Open Credit Network, a startup at the time of the research. Both were structured as cooperatives and had a wider set of economic, social and environmental objectives embedded within their governance structure. Neither demonstrated any revenues or financial viability, although it was early for Open Credit Network. The two different perspectives could be loosely reflected between a focus on the benefits to individual business against a wider focus on mutuality, which has been considered in the literature in how these models apply governance frameworks (North, 2014a).

7.2.2. Provision of Credit within an Endogenously-Created Local Currency

Sardex demonstrated that it was an effective tool to support the provision of credit to small businesses. These benefits were similarly evident among the interviewees of the CBNs.

> *"...we provide interest-free loans to every account and the reason we had to do that is that if you think back to the very customer, number one, if we didn't loan or make the ability for someone to buy a good or service in our credit, the first transaction would never ever have been able to take place."*
>
> (UK - Commercial Barter Network Manager 01 - Interview)

The CBNs explained the wider benefits of their models through language that the average business user may understand. They focused on 'spare capacity' within a business. This is staff time not allocated to a client account or unsold stock on shelves.

They promoted the fact a business could sell, or ‘monetise’ this spare capacity for currency in the CBN (Stodder, 1998). They then use this income in the currency to purchase ‘peripheral costs’ (i.e. marketing, accountancy, cleaning, etc), similar to what was identified in Sardex in Chapter 5. If done effectively, the business sells spare capacity and uses the income to purchase business expenses, which reduces the need to spend pounds. There has been a focus in previous literature on the use of CBNs to support marketing expenditure (Katikati and Kaitati, 2013), this was not a major consideration by interviewees.

> *“...if you can increase by 5 to 10% of turnover that will always be the spare capacity in your business, and if you can capture and monetise that and use it to offset 10 to 50% of the peripheral costs of running your business, then it'll all go to your bottom line.”*
>
> (UK - Commercial Barter Network Manager 01 - Interview)

The focus of CBNs was the business benefits and did not include the wider social benefits. Previous customers of commercial barter networks I interviewed all recognised this business benefit when using these circuits.

> *“...obviously a hotel has spare rooms most of the time, you know, you see 100% of percent occupancy of any hotel is a zero likelihood really, so I have say 10% rooms that we never use so I thought right, let's see if I can trade off the rooms against produce and stuff like that and it worked very well.”*
>
> (UK - Commercial Barter Network Customer 02 - Interview)

Within the interviews there was also recognition that this is a tax efficient way of operating. The transactions within the CBNs can still be claimed as a tax deductible expense and therefore reduce business tax liabilities. In the eighty businesses interviewed within Sardex, this benefit was not mentioned once. It was mentioned by all of the CBNs and customers interviewed, which again suggest the use of the circuit to maximise individual business benefit.

> *"...if you buy something that would normally attract a tax deduction or a VAT claim again, you can do that even though no sterling is been outlayed to buy that product or service"*
>
> (UK - Local Currency and Finance Expert 01 - Interview)

> *"I could see the benefit of it, because you can set it against tax, because if you don't want the cash flow, you can spend it that way, without spending it, do you see what I mean?"*
>
> (UK - Commercial Barter Network Customer 02 - Interview)

The CBNs and their customers considered the use of the credit facilities within a similar framework. The credit facilities were highlighted within the context of the individual business benefit, opposed to supporting the wider community of belief found within Sardex. It is pitched from a cost saving perspective to the individual business when compared to traditional banking services.

> *"...you can start buying things without having any money. It's like interest-free credit and it's like that gets their attention. It's a different message for a different audience."*

(UK - Local Currency Scheme Manager 06 - Interview)

There was recognition among the CBNs that their customers have suffered access to finance issues (Appleyard, 2013). Potentially this is where the notion of an individual benefit focus begins to cross the line into a local economic intervention. This insight confirms the hopes of Culkin & Simmons (2019) who believed these models could offer an innovative financing mechanism for small businesses post-Brexit.

> *"There were plenty of people that had a facility that were taken away from overnight without even any, perfectly good businesses that they'd made repayments every, every month for 20 years and the bank just went like that...but people generally speaking they look to us as an alternative or complementary lender."*
>
> (UK - Commercial Barter Network Manager 01 - Interview)

The development of the Prospects scheme by the team at the Bristol Pound considered B2B mutual credit within the framework of supporting the local economy. They recognised the limited impact that the Convertible Local Currency (CLC) had within Bristol, but the credit with Prospects may have a higher economic impact within the local spatial scale. There was a notion of using the credit to match the economic capacity within the region and boosting local supply chains. The approach reflects the evidence of these models to support "macroeconomic stablisation" (Stodder, 2009) or act as a "stabiliser of the local economy" (Lucarelli & Gobbi, 2016).

> *"Yeah, it gives people an additional purchasing power which in a way is what Bristol Pound has never done, because it's not additional. It's taking the same purchasing power and putting particular conditions on it. Prospects is actually creating additional purchasing, purchasing power in the local economy"*
>
> (UK - Local Currency Scheme Manager 04 - Interview)

The team behind Prospects also considered the wider implications of the potential economic intervention that its B2B mutual credit system could offer. The scaling of a regional B2B mutual credit system like Prospects would eventually play a similar role as a regional central bank. The organisation could set a monetary framework that meets the needs of the local economy, just like the Bank of England sets a monetary framework for the country as a whole. The approach could be considered a solution to the issues raised by Mann (2010) in which he believed central banks aimed to universalise economic, social and political relationships. A central bank grounded within a regional space could aim to meet the requirements of the local economy, and act as a counterbalance to national policies (Seyfang 2000). It could also be considered through the framework of an alternative to Quantitative Easing (NEF, 2013b).

> *"I think if you think about it as an established system creating the future promises; the money, then who gets the controls that operation you could have a local or regionalising the monetary policy committee working. So where they always talk to each other very clearly but they have a certain amount of regional power to do currently what the Bank of England does."*
>
> (UK - Local Currency Scheme Manager 02 - Interview)

In good economic times, the B2B mutual credit system could boost local spending. Within a recession it could increase credit availability to support local businesses. The perspective is much closer to the theoretical understanding of money and how it is managed within the dominant financial system and resonates with Post Keynesian perspectives on how money operates within regional spaces (Chick and Dow, 1988; Rodríguez-Fuentes, 1998). The currency within the circuit would be created in response to the demand for loans by small businesses and have little relationship to the amount of reserves held within local financial institutions (Dow and Rodriguez-Fuentes, 1997).

The final area of consideration is the belief among some researchers (Douthwaite, 1999; Greco, 2009) that a B2B mutual credit system could scale to replace the dominant financial system. The founders of the startup Open Credit Network (2021) considered their development within this framework. There is a reference to a key text within the literature from Thomas Greco (2009) that considered mutual credit as the end of the modern banking system.

> *“...had read Thomas Greco's books, a couple of years ago, and had been fascinated by them, and hadn't really met anyone who had any practical experience or sort of theoretical experience, of it to discuss it with so our conversations moved forward.”*
>
> (UK - Local Currency Scheme Manager 05 - Interview)

Open Credit Network is structured as a cooperative and hopes to develop a B2B mutual credit system that can provide a challenge to the traditional banking system. Their focus was to embody cooperative values within their currency scheme, which

would help them build a circuit that was not specifically tied to a local spatial scale. Their aim would again reflect the arguments of economic geographers in that money transmits social norms and values between individuals transacting economic value (Leyshon and Tickell, 1994; Lee, 1999). Their aim to use cooperative values to construct a currency circuit to challenge traditional financial institutions is an interesting pivot for local currencies, as the focus of the CLCs was to provide a challenge to money (Cato and Suárez, 2012). The aim to provide a challenge to the banking system demonstrates a deeper theoretical understanding of how the modern monetary system operates. It recognises that money is a unit of credit and the majority of money in circulation is created by commercial banks (Positive Money, 2021). These perspectives resonated with studies conducted on credit-based local currencies that hoped they could act as a challenge to traditional finance (Bendell and Greco, 2013).

> *"What mutual credit really gets at is the idea that money is fundamentally by its unavoidable nature a scarce commodity and that turns out to be just one way of making money and it's a very suitable way of making money if you want to stay in charge because you invented the system. So it's great for banks that they can have a monopoly on creating money"*
>
> (UK - Local Currency Scheme Manager 05 - Interview)

The co-founders of Open Credit Network believed a B2B mutual credit system could provide credit more cheaply to small businesses than the traditional financial system could. The concern among the team was with the long term growth of the system and therefore its ownership structure. Open Credit Network is structured as a cooperative

to aim to reduce the likelihood that the dominant financial system could take over the scheme.

> *“There's no defence from being bought out by a multinational corporation or finance institution, you see what I mean? The mutual credit world could slowly be eaten by the corporate sector.”*
>
> (UK - Local Currency Scheme Manager 06 - Interview)

CBNs demonstrated an ability to scale the model but focused on the benefits to the individual business. There was evidence that users of CBNs in the UK did access credit to support their businesses. However, there is little attempt to use these circuits to meet the credit requirements of small businesses as part of a local economic intervention. The local currency schemes wanted to apply a B2B mutual credit system as an economic intervention to provide credit to small businesses, but failed to start the circuit (in the case of Prospects), or was in the early startup phase (in the case of Open Credit Network).

7.2.3. Endogenously-Created Local Currencies and Regional Development

The final section considers the ability of endogenously-created credit-based complementary local currencies within the United Kingdom to support regional development. The CBNs are not grounded within local spaces and focus on the benefits to individual businesses. The model therefore potentially has little impact on regional development. The managers of the networks were asked about the themes of sustainability, but only one of the network managers had a response on this subject.

> *“Absolutely. So there's plenty of things like solar panels companies, that sort of stuff [in the network]. Yeah so then any company that...has spare capacity.”*
>
> (UK - Commercial Barter Network Manager 01 - Interview)

The response is centred on the ability of solar energy companies to offer ‘spare capacity’ into the circuit. When pressed about a wider perspective on environmental sustainability, the network manager responded by promoting another product available on the network.

> *“So we've got a carbon credit offsetter. There's one in our community so you can use your [corporate barter network currency], it measures and monitors your energy and your travel bill primarily that causes carbon emissions, you do a measure, your measure using their widget...so if you got a hundred tons for [corporate barter network currency], you can pay the offsetting company you get the offset in the project.”*
>
> (UK - Commercial Barter Network Manager 01 - Interview)

The service available in the CBN is primarily targeted at individual businesses, as opposed to a regional development initiative. It also is not reflective of previous studies that considered the environmental benefits as shifting consumption patterns or development of green social networks (Seyfang, 2001a). The offsetting service is potentially an interesting development within an endogenously-created currency. If the CBN was restricted to a regional spatial scale, it could offer this offsetting mechanism

to encourage donations of the currency for local environmental improvement initiatives.

The inquiry into whether CBNs can support regional development may be a misunderstanding of their objective. They are also not structured to support wider economic, social and environmental benefits, and potentially businesses do not join them for this reason. When I asked the previous customers about whether their participation within the CBNs supported the reduction of their own environmental impacts, the responses indicated that this was not a major concern for them.

> *"They were selling stuff like LEDs which could go in the rooms. No never bought them, we were just thinking long term."*
>
> (UK - Commercial Barter Network Customer 02 - Interview)

> *"No, absolutely not. I've had a decorator in. I had work done on the house. Some people have a new kitchen. Some people have double glazing put in."*
>
> (UK - Commercial Barter Network Customer 01 - Interview)

There was limited connection between interventions to support regional development and CBNs. In comparison, the development of local currencies structured as B2B mutual credit systems aimed to embed issues associated with regional development and the three themes of sustainability within their governance. The cofounders of Prospects focus on the notion of shortening supply chains, the similar argument advanced about the impact of the Bristol Pound.

> *“So simply by shortening supply chains, so that is an environmental impact. Yeah weren't using the transport costs and by having more that you could supply and source locally building resilience.”*
>
> (UK - Local Currency and Finance Expert 04 - Interview)

> *“...serve the needs of the network and kinda localise and economic relations, for social and environmental benefits that brings.”*
>
> (UK - Local Currency Scheme Manager 02 - Interview)

Scaling Prospects to a region-wide currency and seeing the potential implementation of regional monetary policy-like decision-making was considered a benefit for regional development. The founders of Prospects drew on wider debates of the remit of central banks (Dikau and Volz, 2020). Where under neoclassical economists the remit is to control inflation, a regionally-based monetary authority managing the B2B mutual credit system may also have a wider remit to consider the themes of sustainability.

> *“Local money created for the region would be a really empowering thing to do, and the remit of each of those should include certain aspects of sustainable development.”*
>
> (UK - Local Currency Scheme Manager 02 - Interview)

The local currencies applying a B2B mutual credit system also considered their schemes to be addressing the issue at a systemic level. This reflects previous studies that considered local currencies as eco-socialist initiatives aimed at challenging the issues associated with the capitalist system (Bowring, 1998). This approach would be

considered as ‘sustainable local development’ by Seyfang (2001a) as it is challenging dominant discourse through a more radical approach. It could also be considered the type of application called for by Leyshon and Thrift (2007) that aimed to challenge the extractive and speculative nature of global financial capitalism. The cofounders of the schemes highlighted the fact that money within a B2B mutual credit system was issued at zero interest and considered interest-bearing debt a mechanism for growth within a capitalist economy. The perspective has been the subject of debate within academic literature (Douthwaite, 2012; Kallis et al, 2012).

> *“...there may have been other people in the scheme that were thinking that wide strategically, but I'm not sure I was really. I get the concept, that interest-based stuff means you have to grow every year, and I am a Green Party member, so that is a bad thing.”*
>
> (UK - Local Currency Scheme Manager 04 - Interview)

> *“...it definitely is not by its fundamental nature encouraging of growth for growth's sake, so in regards to sustainable development that seems good.”*
>
> (UK - Local Currency Scheme Manager 05 - Interview)

The concept that a B2B mutual credit system could challenge the desire for growth within the hegemonic monetary system (Douthwaite, 1999; Jackson and Victor, 2015) was raised with the local currency and small business finance experts. They were aware of the debate, but had mixed perspectives about whether it was the monetary system alone that is feeding perpetual economic growth. They recognised there were a range of institutional factors that may be encouraging growth, not just the need to

pay the interest on money that is created by commercial banks. Their insights resonated with Post Keynesian perspectives that believed money creation by commercial banks is not necessarily incompatible with a stationary economy (Cahen-Fourot and Lavoie, 2016).

> *"...there is a whole debate about whether it's more of an emergent property of the entire system of which money is one part of it that kind of forces this perpetual growth...whole series of things that forces growth, not least, you know the way the markets work and companies are just expected to grow every year...so there are kind of wider things that require kind of perpetual growth."*
>
> (UK - Local Currency and Finance Expert 02 - Interview)

Greco (1996) theorised that as mutual credit is cheaper and potentially more efficient than the current monetary system, it may scale to replace the dominant currency in circulation. This perspective was highlighted in the interviews with Open Credit Network, with the hope that mutual credit could replace commercial banks that are damaging to economic, social and environmental systems.

> *"But you know eventually if mutual credit really grows beyond our wildest expectations as an idea, then it's going to push the money system further and further to the margins."*
>
> (UK - Local Currency Scheme Manager 06 - Interview)

The concept of a B2B mutual credit system replacing the dominant monetary system is actually closer to the theoretical basis of metallism, the opposite of where this thesis

demonstrates that these currencies are ontologically grounded. Under a metallist view of money, the reason we use a certain currency is due to the fact that market forces allocated it as the most efficient mechanism for exchange (Menger, 1892; Kiyotaki and Wright, 1989; 1993). However, Post Keynesian scholars and particularly those focused on Modern Monetary Theory would challenge this perspective from a chartalist viewpoint (Knapp, 1924). A B2B mutual credit system would not support regional development or the themes of sustainability by replacing the dominant monetary system as it is the government that decides what unit of currency they spend into circulation and later accept as payment for taxes and fines (Wray, 2015; Kelton, 2020).

Through the interviews and engagements with schemes operating an endogenously-created credit-based currency I identified little initial impacts on regional development or the themes of sustainability. The Commercial Barter Networks (CBNs) did not operate at a relevant spatial scale to influence regional development and their aims were not specifically focused towards these objectives. The Prospects and Open Credit Network schemes had not sufficiently developed their circuits to have the initial contributions that were associated with Sardex and outlined in Chapter 6. Their wider aims of challenging the hegemonic monetary system were considered to have limited scope within the ontological framework applied to understand their models.

7.3. Conclusions

This chapter outlined the current position of complementary local currencies within the UK in offering credit to small businesses. Firstly, it can be concluded that the majority of UK schemes operated exogenously-created commodity-based models, which have

greater resonance with metallist perspectives of money (Knapp, 1924). They either operated Convertible Local Currencies (CLCs) backed by pounds which aimed to stop ‘leakage’ of funds from a local space (Cato and Suárez, 2012), or cryptocurrencies that act as token rewards (Torre and Seang, 2019). The research confirmed that these complementary local currencies had failed to identify a financially viable business model and indeed whilst the research was being undertaken, many of the CLCs ceased operating.

There was an initial investigation to consider whether CLCs could provide credit to small businesses, with the Bristol Pound trialling a business loans initiative with the Bristol Credit Union (Dittmer, 2013; Ayres and Bird, 2018). Theoretically, the provision of credit within this model of local currency has greater resonance with a “deposits create loans” (Rogers, 1989) understanding of money and credit. These models need to initially borrow the funds from another source, before they could be lent out to businesses. Interviewees from the Bristol Pound recognised the limitations of this model and potential contradictions between creditors and borrowers within the system. The model would not increase the money in circulation within the local area, and any funds lent out were likely already available to small businesses from the creditor institution.

There was a hope among scheme managers that the Bristol Pound business loans initiative could be used as a precursor for the development of an endogenously-created credit-based complementary local currency. Both Bristol Pound and Sardex participated in the European-funded DigiPay4Growth (2017) that aimed to support the development of this type of local currency among the participants. My inquiry into whether an exogenously-created commodity-based local currency can provide credit in support of the objectives of regional development was largely inconclusive and did

not identify any impacts that the complementary local currencies were having towards it or the three themes of sustainability. Interviewees within my research focused on the fact that the provision of credit would increase the volumes of trade within CLCs and support localisation of trade, contradicting academic research (Marshall and O'Neill, 2018).

Secondly, regarding the development of endogenously-created credit-based complementary local currencies in the UK, an overview of the sector indicated that there are limited schemes employing the Business-to-Business (B2B) mutual credit system model. The study therefore included a small number of CBNs, an industry that has been largely under-researched (Oliver and Mpinganjira, 2011; Kaikati and Kaikati, 2013). The local currencies and CBNs employed the same model, but operated different governance arrangements and pursued different objectives. CBNs applied the credit-based endogenously created model of complementary local currency that this thesis argues effectively reflects a consistent ontological understanding of money. However, they had little connection to local spaces, which potentially undermined trust within their circuit among the community of belief that was using their currency as payment. Complementary local currencies that employed a B2B mutual credit system were considered by sector experts to be an 'economic intervention'. These models are expected to operate a non-profit distributed governance model such as a cooperative, indicative of the hopes of researchers (Bollier and Conaty, 2015; Augustyn, 2017). The CBNs demonstrated a focus on providing users a commercial service and their objective was profit-orientated. The CBNs demonstrated a financially viable model, as highlighted by researchers in other countries (Palia and Liesch, 1997), which the local currencies interviewed failed to demonstrate. This difference in governance and

objectives confirms the argument of North (2014a) who considered these aspects to be related within currency schemes.

The CBNs and complementary local currencies were both investigated for their ability to provide credit within their models. Like with Sardex, the currency only exists when a participant uses their credit facility, considered a “loans create deposits” approach (Rogers, 1989). CBNs included this feature within their value proposition, which largely focused on the benefit to individual businesses. They promoted the fact that businesses could buy without the use of pound sterling, which provides tax advantages. Although the scheme Prospects never formed, the interviewees highlighted that this credit-based model within a restricted spatial scale would act as a regional central bank that could control the level of liquidity available to regional businesses. This perspective resonates with other research that considered the role central banks could have in promoting objectives towards the three themes of sustainability, even if the Prospects initiative was merely theoretical (Campiglio, 2016; Monnin, 2018).

The development of Open Credit Network (2021) further emphasised the advantage of this currency model, where credit could potentially be provided to its members through the currency. Their focus on building a circuit of members that embody cooperative values, is reflective of perspectives by economic geographers of money transmitting social values and norms (Leyshon and Tickell, 1994; Lee, 1999) and may allow them to overcome the issue of not being specifically grounded within a local space. The conclusion from this part of the study is that the objectives and potentially the governance of the currency schemes were having an impact on their ability to develop (North, 2014a). The privately-structured commercial barter networks which aimed to provide benefits to individual businesses, were having successes, although

there were some evidence of the schemes abusing their position of power in the circuit and undermining trust. The non-profit complementary local currency schemes which aimed to support an economic intervention to support an alternative local economy, had little notable successes.

The final conclusions centre on the potential for schemes that employ an endogenously-created credit-based currency to contribute to regional development and the three themes of sustainability. The CBNs offered specific services to small businesses that support incremental reductions in their environmental impact, including energy efficiency products and carbon offsets. Scheme managers speculated on the impact that Prospects could have, but largely focused on the similar positive outcomes that Bristol Pound was supposed to be supporting (Marshall and O'Neill, 2018). Finally, Open Credit Network considered their potential contribution to regional development through the revolutionary perspectives promoted by early adherents to B2B mutual credit systems (Greco, 1996). Scheme managers believed that endogenously-created credit-based local currencies could one day challenge and replace the dominant monetary system. However, as this thesis considers these models through a framework of Post Keynesian endogenous and monetary theories (Wray, 1992; Kelton, 2020), I believe that they would struggle to meet these objectives. A chartalist perspective of money indicates that the government decides what unit they accept for payment of taxes and fines (Wray, 2015). The notion that the dominant money can be altered based on market demands has a greater association with a metallist perspective of money (Knapp, 1924), which is criticised within the literature review. The research identified little evidence that the development of endogenously-created credit-based schemes were having an impact on regional development or the themes of sustainability. The next and final chapter will focus on the development of

an endogenously-created credit-based complementary local currency scheme in Birmingham, UK.

The application of the ontologically opposing monetary theories to the study of complementary local currencies in the UK does provide initial insights in the role of money and credit within regional spaces. The Bristol Pound loans scheme applies a model that Dow and Rodriguez-Fuentes (1997) had highlighted as the dominant view of the role of money and credit within analysis of regional development. The scheme needed to first raise capital from the Bristol Credit Union which could then be provided to small businesses as loan. It would reflect “mainstream theory, which to many, despite its disparity with observed fact, is identified with regional economics, investment finance is equated with savings” (Chick and Dow, 1988: 3). Prospects, although not successful in launching, had a greater association with a Post Keynesian understanding of the role of money and credit within regional spaces, in which money is created as credit in response to the demand for loans. It would reflect the concept highlighted by Rodríguez-Fuentes (1998: 68), “the matter is no longer how a fixed amount of credit is divided between regions, but how credit is created regionally”.

8. AN ATTEMPT TO DEVELOP AN ENDOGENOUSLY-CREATED CREDIT-BASED LOCAL CURRENCY IN BIRMINGHAM AND CONSIDER THE INITIAL CONTRIBUTIONS TO REGIONAL DEVELOPMENT

My research activities over the past four years have been focused on understanding money and credit on a theoretically fundamental level. The initial three chapters have demonstrated a significant difference in dichotomy in the understanding of money and credit between exogenously-created commodity-based and endogenously-created credit-based. This empirical chapter discusses the development of a complementary local currency in Birmingham that applies the latter, drawing on an ontological understanding of money as a social relationship between creditors and debtors operating within a circuit (Martin, 1999; Colins, 2000; Ingham, 2004; Pilkington, 2009). The development of a specific project allowed the application of heterodox economic and geographical perspectives of money and credit using Participatory Action Research (PAR) techniques to consider initial contributions to regional development. I played a central role in the development of this complementary local currency and this chapter addresses the final research objective: to consider how this model can support small businesses in Birmingham and contribute to regional development.

8.1. The Context for the Development of a Credit-Based Local Currency

8.1.1. The End of the Birmingham Pound

The Birmingham Pound was devised in mid-2015 by a local charity as a possible economic intervention to support regional development (Birmingham Pound, 2018).

The charity had supported other regional development initiatives that aimed to challenge dominant social constructions of local and regional development (Hughes, 2005; Leyshon and Thrift, 2007) and believed a key benefit of a Birmingham Pound would stop the ‘leakage’ of money from the city. The concept of leakage is often used within the Convertible Local Currency (CLC) academic and practitioner narratives (Ward et al, 2002; Leyshon and Thrift, 2007; Cato and Suárez, 2012) and the aim of the Birmingham Pound resonated with perspectives highlighted in economic geography in which the means of exchange was being removed from peripheral regions (Seyfang, 2000; Cook et al, 2007; Faulconbridge et al, 2007). Furthermore, it reflects a monetarist perspective of money and regional development, in which a limited amount of money is shared between local and regional spaces (Chick and Dow, 1988; Rodríguez-Fuentes, 1998). Leakage was raised as a benefit of a Birmingham Pound alongside the concept of CLCs supporting the money multiplier effect (Ryan-Collins, 2011).

> *“So a plumber would earn his wage with a Birmingham Pound, and then maybe he’d go buy bread with his Birmingham Pound, then the breadmaker would go to the florist, or the local shop, or to the local photographer, and that pound would stay in the city. It wouldn’t leak out like a regular sterling pound”*
>
> *(Birmingham Pound Cofounder, 2016 - Promotional Video)*

In early-2016 the Birmingham Pound Steering Group was formed consisting of ten individuals drawn from academia, business, social enterprise and local government. When I joined the group in mid-2016 there had been significant progress made to develop a CLC. The Birmingham Pound Steering Group had received a grant from

Bristol Pound (2021) as part of DigiPay4Growth (European Commission, 2017) to develop the local currency scheme and implement a pilot. The support demonstrated previous academic observations that peer-to-peer support networks existed within the local currency sector that aimed to maximise successes through knowledge sharing (Graugaard, 2012). By mid-2017 it was clear to the Steering Group that the CLC model applied by Bristol Pound was not financially sustainable and was grant dependent, an issue identified in my Masters thesis (Bowles, 2017). A financial structure proposed by the Steering Group based on charging transaction fees required an estimated £10.1million worth of transactions each year to maintain operations, significantly above the £4million worth of Bristol Pound transactions conducted in total at that stage (Diary Entry: Y1-05 - 19/07/2017 - 20/10/2017).

In July 2017, the Birmingham Pound Steering Group met to formally stop the scheme. The meeting was only attended by three individuals including me, demonstrating a significant reduction in enthusiasm since the scheme's peak. The meeting chair asked me to discuss two alternative models to be explored which I had identified in my Masters research. Hullcoin (2021) were using a cryptocurrency to reward volunteering and community participation and a short proposal had been created for a commodity-based 'Brumcoin' (Annex 02). There was scepticism about this model as the other remaining members of the Steering Group associated cryptocurrency with criminal activities and speculative investments (Brown, 2016; Stroukal, 2016). They believed that a cryptocurrency token would not address the problem of leakage of the means of exchange from the local spatial scale (Seyfang, 2000).

> *"The other two members of the Steering Group could not see how local businesses could use a cryptocurrency like Hullcoin,*

> *or what the legal ramifications would be...the [cryptocurrency] model would not address money leaving the area"*
>
> *(Diary Entry: Y1-001 - 19/07/2017)*

The second model I proposed was a Business-to-Business (B2B) mutual credit system inspired by Sardex (Littera et al, 2014; Motta et al, 2017). I had previously interviewed Professor Paolo Dini for my Masters thesis and he highlighted that the Sardex scheme was beneficial to small businesses, supportive of the local economy and financially viable. The meeting finished and an action point was created in the meeting minutes: "Investigate a Birmingham credit scheme" (Diary Entry: Y1-001 - 24/07/2017).

Over three months from July 2017 I conducted a significant investigation of Sardex, including another video call with Professor Paolo Dini. He argued that four key features should be considered before developing the scheme. Firstly, the team would need to understand money and credit on a more fundamental level. Secondly, a local currency should be targeted towards small businesses as a commercial proposition. Thirdly, he advised a membership fee should be used over a transaction fee. Finally, the local currency market needed an element of centralised management to ensure there was sufficient supply and demand within the circuit (Diary Entry: Y1-003 - 25/07/2017-10/10/2017).

I developed an initial proposal and circulated it among the Steering Group termed 'BrumEx' (Annex 03). It highlighted the benefit of using an endogenously-created credit-based model because the local currency could not be converted and leave the circuit of users, thus addressing leakage of funds. One active member of the Birmingham Pound Steering Group considered the proposal and then stated that they could no longer be involved with the local currency, due to the new commercial focus.

> *“Brumpound [team] should be building something for people in need, not businesses.”*
>
> *(Diary Entry: Y1-003 - 25/07/2017-10/10/2017: Birmingham Pound Steering Group Member)*

The reaction potentially reflected previous academic observations of a growing trend to “appeal to elites” within the local currency sector (Dittmer, 2013) and governance structures affect this process (North, 2014a). As detailed in Chapter 7, the majority of the local currency schemes in the UK were expected to be structured as community initiatives (Bollier and Conaty, 2015; Augustyn, 2017). The member of the steering group had a perspective that reflected arguments discussed within the economic geography literature, in which a complementary local currency could connect individuals that had productivity, skills and creativity, but a shortage of a means of an exchange (Lee, 1999). The shift of focus towards small businesses indicated to him the project would further embed the regional inequalities that existed within the city. The initial reaction of a core member of the group highlighted this perceived dichotomy between commercial and community focused schemes (North, 2014a).

The change resulted in renewed interest from a set of silent observers who had followed the development of the Birmingham Pound. A public sector official and University professor contacted the Steering Group to argue that a focus on a credit-based local currency would be an effective avenue to explore. They highlighted an access to finance issue facing small businesses in the region, which reflects wider academic studies on the problem (Leyshon, 2009; Appleyard, 2013; Henry et al, 2014; 2017). The public sector official worked with the Black Country Growth Hub (2021), an

initiative to support businesses in the region. It has a role dedicated to small business access to finance. He was invited to the next Steering Group meeting and provided his perspective on the credit-based model. The concept of a “MacMillan Gap” was initially highlighted by the official, from an early report (MacMillian Commission, 1929) that raised the now longstanding issue of small businesses accessing credit between £10,000-£150,000. The concept reflected the spatial dimension to unequal access to finance by small businesses (Martin, 1999; Zhao and Jones-Evans, 2017; Degryse et al, 2018), as local variances existed across the city that was potentially affecting regional development (Henry et al, 2014; 2017). The outcome of the Steering Group meeting was to use the remaining funds provided by the Bristol Pound to research the credit-based model at the Alliance of Independent Currencies Event in Glasgow, Scotland on the 19th and 20th October 2017.

8.1.2. Peer Learning with the United Kingdom Local Currency Sector

The Alliance of Independent Currencies Event in Glasgow, Scotland (2017) was attended by eighty individuals from the sector. The event was advertised as a working session to share best practice among local currencies. Upon arrival, I was greeted by a scheme manager of the Exeter Pound managing the signing-in process. When it was confirmed I was from the Birmingham Pound, she exclaimed: “Great! The Birmingham Pound, we are really looking forward to seeing your development” (Diary Entry: Y1-005 - 19/10/2017-20/10/2017). The enthusiasm was shared by other participants over coffee. They appeared to be using the notion of a Birmingham Pound as indirect validation for their own schemes. “I’m really excited that Birmingham is now launching a local pound, it really shows the potential [the sector] has”, a scheme

manager of the Kingston Pound stated (Diary Entry: Y1-005 - 19/10/2017-20/10/2017). The perspectives could reflect the views of the local currency sector experts highlighted in Chapter 7, in that schemes were hoping to use active local currencies within larger cities as validation for the CLC model.

Local currency managers seemed uneasy with the attendance of cryptocurrency schemes, a feeling that was emphasised at this event with the attendance of the Liverpool Pound. The scheme was the development of Colu (2021), the Israeli venture capital-backed firm that was developing local pounds in the UK and Israel. Many of the participants were openly critical of Colu, as they felt that local pounds were a response or alternative to multinationals and globalisation, confirming previous research (Seyfang, 2000; Meyer and Hudon, 2017). The criticism reflects the potential combination of two monetary circuits operating within different spatial scales (Martin, 1999). The creation of complementary local currency circuits funded through venture capital raised from financial centres within the global monetary circuit that had an aim of profit maximisation (Epstein, 2005).

The event schedule provided space to support the local currency schemes and share best practice, a process that was considered a positive factor by previous research (Graugaard, 2012). The schemes were given an opportunity to provide a short talk about their current position and hopes for the future. There were speakers from Totnes, Brixton, Kingston, Exeter, Liverpool (Colu), Lake District and Bristol Pounds. They all employed the same exogenously-created commodity-based model, but with different payment infrastructure. Cyclos from the Social Trade Organisation (2021) was being used by the community-based schemes who had a digital version of their local pounds. Those who did not have a digital version had pound-backed notes. One of the few businesses in attendance was a printing company that had supplied the

notes for the schemes, who were looking for new customers. Colu had developed their own blockchain-enabled platform that was being then used by the Liverpool Pound, alongside their other scheme: East London Pound and two in Israel.

The organisers provided an opportunity for me to speak about the development of the Birmingham Pound. My talk initially began by discussing the findings of my Masters research and I shared the findings of the Birmingham Pound on transaction fees (Bowles, 2017), specifically that a 1.5% transaction fee required £10.1 million worth of transactions each year. The volume levels were surprising to the room, especially as Bristol Pound had stated at the conference they had transacted around £4million in total over five years, which would have included an estimation of exchanges of paper notes. I diplomatically stated, “we found the pound model would not be suitable for Birmingham” (Diary Entry: Y1-005 - 19/10/2017-20/10/2017). My talk then finished with an explanation of the B2B mutual credit system proven by Sardex. The developments were not well received at the conference.

> *“I ultimately wanted to gauge the reaction and see what the views of the community were on this idea. I was the only speaker that had no questions asked by the audience. I shuffled off stage in an awkward silence.”*
>
> (Diary Entry: Y1-005 - 19/10/2017-20/10/2017)

An afternoon session provided an opportunity for schemes to highlight their current challenges through breakout sessions. I hosted a challenge session termed; “West Midlands Mutual Credit Scheme”. Out of the eighty participants at the event, two came to join the session. It was two senior individuals from the Bristol Pound who outlined

that they had developed their own mutual credit system termed ‘Prospects’ (explored in Chapter 7). The scheme had been abandoned but there had been some initial development, including engagements with the Financial Conduct Authority (FCA) and the development of a video. The senior individuals outlined the legal position and described it was abandoned due to its inability to be convertible with Bristol Pounds. Developing Prospects would have required a separate complementary local currency to be launched alongside the Bristol Pound (see Chapter 7).

The conference came to a close with a final talk discussing the outcomes of the breakout sessions. A scheme manager of the Bristol Pound played the Prospects video, stating; “there are other ways to run a local currency, we had considered one called a business-to-business mutual credit system” (Diary Entry: Y1-005 - 19/10/2017-20/10/2017). I felt like it was a little deceptive, as the Birmingham Pound had received a grant on the basis that it would replicate the Bristol Pound model, without being briefed about other models (Bowles, 2017). The event finished with a heated exchange between the traditional CLC schemes and a manager from Colu. The local currency schemes considered Colu an “Uberisation” of the local currency model, in which one global technology company controlled city-level CLCs initially designed to support localisation (Diary Entry: Y1-005 - 19/10/2017-20/10/2017), which reflected the concerns raised in Torre and Seang (2019) around the digitalisation of local currencies. I understood the concerns of the individuals from the local currency schemes around the notion of a globalised local currency model, but they had failed to establish financially viable schemes. The experiments by Colu may establish how to operate a financially viable commodity-based complementary local currency.

8.1.3. Governance Concerns of a Local Currency

In November 2017, I created a proposal and shared it with the Steering Group which was termed “WestMidEx” (Annex 04). Separately, a local event was hosted in Birmingham for cryptocurrency schemes called BitBrum (2017) and the organisers believed my Masters research would be a way of connecting cryptocurrency to the city. I led a session to discuss the limitations of the CLC model and propose four local alternatives; two cryptocurrency (Hullcoin and Bitcoin), one blockchain-enabled CLC (Liverpool Pound) and then a B2B mutual credit system (Sardex). Figure 8.1. provides a photograph of my presentation at the BitBrum (2017) conference.

Figure 8.1. Session at Bitbrum (2017) discussing credit-based complementary local currencies



I had become more convinced by an endogenously-created credit-based model and used the talk to promote the successes of Sardex. A question at the end indicated there was little agreement; “why would you use a local currency, why not just use Bitcoin?” (Diary Entry: Y1-008 - 19/11/2017). The question would have usually been answered using the leakage framework (Sacks, 2002; Ward et al, 2002). My answer

focused on the access to finance issue raised within economic geography literature (Corbridge and Thrift, 1994; Hall, 2012), a commodity-based currency like Bitcoin would need to be purchased before usage (Weber, 2014). It was the first time that I found myself arguing against cryptocurrency, something I had been an early convert to. The audience disagreed and were negative about the response. Although it had felt like the conference had rejected the perspectives in the presentation, I was approached by one technically-minded individual who was keen to learn more. He agreed to join the Steering Group as he appeared to have the skills and experience to manage the technical side of its development.

Over the period from November 2017 to January 2018 I developed the WestMidEx proposal further. The Steering Group had grown to a larger size than at the peak of the Birmingham Pound. Although there was enthusiasm at the meetings, there was little engagement in between these sessions. I had taken on the majority of the development work and was growing frustrated when others were arriving without reading the documents I was circulating.

> *"Over the Christmas period I had done further development to the proposal and circulated it, including a financial and associated tasks plan. The group met again and seemed positive, although I was a little annoyed to find out that they had not read any of my work."*
>
> (Diary Entry: Y1-012 - 16/01/2018)

There was a growing divide within the Steering Group on the subject of governance. There were opposing perspectives between those who saw it as a non-profit scheme and those who considered its commercial potential, reflecting observations of North

(2014a). Although I had originally started as a volunteer with the Birmingham Pound and supported its non-profit structure, I was increasingly finding myself within the second group. The governance would influence the next stage of development and I was experiencing the range of opposing concerns raised within the literature on complementary local currency governance (Meyer and Hudon, 2017; Dini and Kiopkiolis, 2019). The two opposite groups worried about a potential issue of losing control. The individuals interested in developing a non-profit structure were worried about shareholders and investors taking control, whereas the commercially-minded individuals were worried about public sector officials taking over the scheme (Diary Entry: Y1-012 - 16/01/2018). The issues with governance were reflective of the differences between commercial barter networks and local currencies raised in Chapter 6. The issues were personally stressful, with my diary entries being termed, “existential issues”.

> *“In the days and weeks after the meeting I was very confused and torn. I felt like I was putting in essentially 95% of the work and others’ contributions were to attend Steering Group meetings and criticise my position, without having read any of the materials I was circulating.”*
>
> (Diary Entry: Y1-015 - 18/01/2018)

The Steering Group agreed to develop four potential governance options, ranging from a cooperative through to a commercial startup. One of the Steering Group members was an advisor to cooperatives and a board member of a local credit union which was another local financial institution aimed at addressing issues associated with financial service withdrawal in the city (Hall, 2012). This was an individual I trusted and had

worked with on non-profit regional development initiatives. We discussed the potential governance options for the B2B mutual credit system and I had been expecting the advice to be to develop a cooperative, similar to the perspectives of interviewees in Chapter 7. I was surprised when his advice was to pursue a commercial startup. He discussed how his experience at the credit union showed that the provision of credit required commercially-focused decisions to ensure solvency. He also highlighted his concerns with the current governance, as the Steering Group was open to the public.

> *"What even is this Steering Group? Anyone can just walk in off the street and become a founding member without any skills or experience"*
>
> (Diary Entry: Y1-015 - 18/01/2018 - 12/02/2018: *Steering Group Member)*

The developments reflected a wider debate within the local currency sector over governance (Bollier and Conaty, 2015; Augustyn, 2017). There had been negative feelings among other local currency schemes about the governance of Colu. Interviews outlined in Chapter 7 showed that the majority of sector experts believed that a B2B mutual credit system should be a cooperative to embed economic, social and environmental objectives within the governance structure of the scheme, reflecting the literature (Bendall et al, 2013; Ruddick et al, 2015). The practical realities of the Steering Group demonstrate that this perspective is not always so applicable. I had found myself with the majority of the development workload and struggled with the notion of continuing in that way. There was no intention to develop an "Uberised" scheme feared by CLC schemes in Glasgow, but Sardex demonstrated that as a

commercial operation they had scaled an endogenously-created credit-based local currency (Iosifidis et al, 2015).

In February 2017 members of the Steering Group discussed the development of a commercial proposition. I and another individual confirmed we had the skills and resources to commit to the scheme and develop a Minimum Viable Product (MVP). Three other members of the Steering Group offered free advice to help develop the scheme. The shift towards a commercial startup needed a name with a greater business focus. “Credex Network Ltd” was registered on 6th March 2018 (Companies House, 2021), a combination of “credit” and “exchange”. These governance issues specifically reflected the arguments highlighted by Seyfang (2001) who noted a contrasting perspective between radical approaches and mainstream approaches, and North (2014a) who highlighted how this difference was embedded within the governance structures of complementary local currencies.

8.2. Credex: The Initial Attempt of a Business-to-Business Mutual Credit System

8.2.1. The Development of the Credit-Based Model

Over the months from March 2018 we studied the financial industry and financial technology startups. There were the entry of new challenger banks such as Monzo (2021) and Starling (2021) and startups focused on specific functions of finance. We also considered initiatives such as Community Finance Development Institutions (CDFIs) (Appleyard, 2011; 2013) that aimed to support regional development. Alongside their core objectives, it was also interesting how these organisations

presented themselves and communicated their commercial propositions. Although the wider objective of the startup was to support regional development, we believed that if Credex could appear as a financial startup, it would appeal to a wider audience. The aim would be to use a commercial proposition to establish the local currency and allow the wider regional development benefits to then establish as a residual process (Diary Entry: Y1-031 - 05/04/2018).

The initial development of the Credex logo and wider branding reflected these insights, with shades of blue and grey to associate the brand with finance. The logo included the strapline “Business Credit Network” as we believed it was easier to understand than ‘B2B mutual credit system’. The initial messaging and communications did not promote the local currency, believing there are negative connotations associated with cryptocurrencies. Our first design of the website used imagery that replicated commercial banks, implementing stock images of 50+ year old white males making mobile transactions. Our initial market research concluded that the majority of business users within the West Midlands were of this demographic (Ward, 2021). The website featured what was believed to be the Unique Value Proposition (USP): zero interest credit.

Figure 8.2. Credex logo used from March 2018 to August 2019



The regional development charity that had supported the Birmingham Pound requested a summary of the developments at Credex to be posted as a blog (Birmingham Pound, 2018b). The article attracted attention and Credex was contacted by individuals and schemes that were aware of the B2B mutual credit system model. A book was suggested as an essential reading: The End of Money and the Future of Civilisation by Tom Greco (2009). It predicted that B2B mutual credit systems would replace the dominant model of money. The text was referred to in interviews with the cofounders of Open Credit Network (2021) and mentioned by local currency sector experts discussed in Chapter 7.

Credex was also contacted by two individuals who had tried to develop a B2B mutual credit system elsewhere in the world. The first individual launched a B2B mutual credit system in San Francisco, and provided advice on how we should structure the local currency. The focus must be on maximising the places that users can spend through building local social relationships, like those considered to be Zelizer Circuits (Zelizer, 1994; Evans, 2009) or what economic geographers consider as circuits among communities of belief (Lee, 1999; Harvey, 2006). He also highlighted the notion that transactions between users needed to be planned in advance, which resonated with the ‘spendability’ processes of Sardex discussed in Chapter 5.

The second individual had developed a B2B mutual credit system within Switzerland and considered it a hybrid between a cryptocurrency and a B2B mutual credit system. He believed that the blockchain and its international scale had contributed towards its failure. He believed that the circuits needed to be grounded at a local spatial scale to create relevant local social relationships. It would further reflect concepts raised within economic geography literature that the spatial aspect of a currency affects the ability to construct and sustain a monetary circuit (Lee, 1999; Martin, 1999). Both individuals

stated a belief there was a future for B2B mutual credit systems, even if they had both failed to scale their schemes.

> *"Basing the model in cyberspace also reduced the appeal of the model. Mutual credit systems have been described as a network of trust, whereas blockchain technology is essentially a trustless network. The failure of [the mutual credit system] had contributed to him developing a belief that there is an element of locality needed within these networks."*
>
> (Diary Entry: Y1-028 - 09/03/2018: *Scheme Manager of Mutual Credit System)*

The insights from the engagements with previous B2B mutual credit systems allowed further development of Credex. We decided to focus on the West Midlands, to provide an element of geography for business users to relate to. There was a consideration of a set of businesses that it would be useful to have on the circuit: products and services that all businesses required to operate, such as accountancy and marketing, or 'peripheral costs'. Whilst initially developing the scheme, I was contacted by a student at the University of Birmingham who had a background in B2B mutual credit systems. He had significant theoretical and practical experience working with Sardex, as it had been the subject of his undergraduate and postgraduate research. This individual joined the Credex team and brought with him a significant wealth of operational experience about how to operate a B2B mutual credit system and an interest in regional development (Diary Entry: Y1-029 - 28/03/2018).

8.2.2. An Economic Intervention for Small Business Access to Finance

A silent observer on the Birmingham Pound Steering Group was a professor from a regional university. One of his areas of interest was the access to finance issues experienced by small businesses in the region (Lee and Drever, 2014) and was an advisor to local Community Development Finance Institutions (CDFIs). CDFIs were highlighted in the literature as being an economic intervention to provide credit to small businesses within specific local spatial scales (Appleyard, 2013). He found the model pursued by Credex interesting and worth investigating if it could be used to provide credit to small businesses. He requested we create a two page summary of Credex that he could circulate among local CDFIs to raise awareness of the scheme (Annex 05).

A director of a local CDFI contacted me to discuss Credex and invited us for a meeting at their offices. The CDFI had featured within a significant number of academic papers highlighting the impact it had on the local economy. Upon arrival, I was intrigued by the simplicity of their arrangement. An initiative that provided a significant amount of funds each year for local businesses, was essentially an office and a small number of desks, a world away from the flashy buildings of financial centres (Cook et al, 2007; Faulconbridge et al, 2007). Our discussions began with what appeared to be a well rehearsed outline of the CDFIs operations, which had been in existence for over twenty years. His explanation is central to this thesis.

> *“Let me explain where our funds come from, because you can’t lend money, unless you have money.”*
>
> (Diary Entry: Y1-032 - 06/04/2018: *Director of Community Development Financial Institution)*

The director paused after this statement and looked down at the two page proposal that had been created by Credex. We all burst out laughing, he must have said that line a hundred times and we were proposing a scheme in which one could lend money, without money. As it was a generalised statement about lending money, it is a reproduction of the ‘deposits make loans’ or ‘loanable funds theory’ discourse on how money and credit functions (Rogers, 1989; Fontana, 2003). Furthermore, it is reflective of the majority of the research on the role of credit within regional development, which is largely influenced by monetarist perspectives (Dow and Rodriguez-Fuentes, 1997). However, CDFIs do not have the same legal status as commercial banks and therefore cannot create money as credit (Buttle, 2007). The statement that the director had made was true in the case of the CDFI, but false in regards to how the majority of business credit is provided within regional and national economies (Wray, 1992; Rodríguez-Fuentes, 1998). CDFIs traditionally operated as a revolving fund between the public sector or ethically-minded depositors (Buttle, 2007) which is lent onward to small businesses (Aslan et al, 2018). The money raised from the public sector is deposited with the CDFI and then they make decisions on who to lend the funds to. CDFIs have been considered within a framework of regional development. Earlier papers on their effectiveness highlighted a “double bottom line” approach of economic and social of these sorts of community based financial interventions (Rubin, 2001).

The Director of the CDFI discussed his observations of the small business lending environment within the West Midlands. Many of the commercial banks were offering business loans with interest rates of between 30-40%. There had been an influx of smaller lenders to the area, with interest rates of between 40-1000% (Diary Entry: Y1-032 - 06/04/2018). The rates appeared similar to those of payday lenders whose

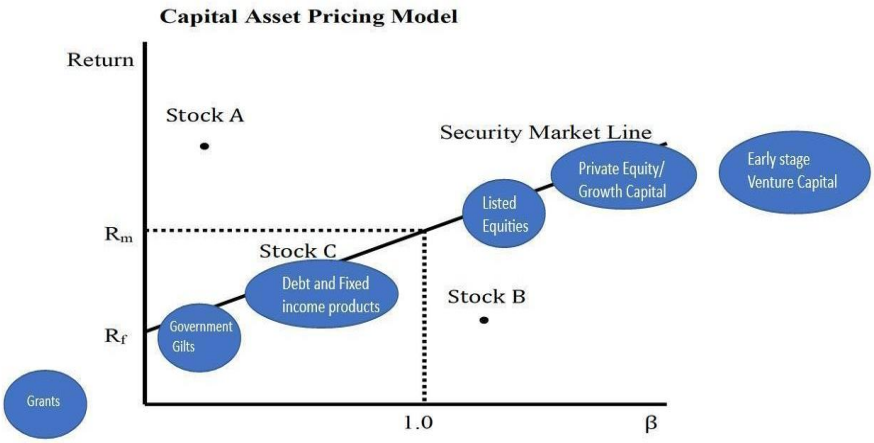
impacts on individuals and families had received significant attention (Ward and McKillop, 2005; Lee and Brierley, 2017). It could be considered as the providers profiteering from the process of withdrawal of the type of financial services available to small businesses in the city (Appleyard, 2011; 2013; Hall, 2012). The CDFI offered interest rates at an average of 25% on business loans between £10,000 - £150,000. The target amount was the level associated with the McMillan Gap (1929), a level that is considered too small to be of interest to commercial banks but needed by the majority of small businesses.

Whilst developing Credex the notion of an access to finance issue was tested with businesses. There appeared to be further granulation of the issue, with specific subgroups experiencing a lack of provision (Smallbone et al, 2003). Whilst engaging with social enterprises and their association within Birmingham, the issue of access to finance was raised by a senior decision-maker. “Banks just don’t understand social enterprises and therefore it’s easier to reject the application” (Diary Entry: Y1-079 - 05/07/2018). Whilst raising awareness about the development of Credex we also had confirmation of the difficulties experienced by Black and Asian Minority Ethnic (BAME) owned businesses. Two researchers from two separate projects in the city raised the concern that BAME-owned businesses had a significant difficulty in accessing finance (Diary Entry: Y1-073 - 22/06/2018). The observations that specific subgroups of small businesses experienced particular access to finance issues further confirmed academic research on the topic (Smallbone et al, 2003; Leyshon, 2009).

Our engagements with stakeholders in the city led us to believe there was a market opportunity to offer Credex as a financial product. We were asked to present at a small business access to finance event to discuss the development of Credex and how we believed it would operate in Birmingham (Diary Entry: Y2-004 - 11/10/2018). The event

was introduced by an investment advisor who detailed why he believed the cost of finance was high for small businesses. He presented a slide that detailed the cost of borrowing from the perspective of risk to the lender. The slide appeared recycled from a presentation that he had given to an investor. Money is considered as a commodity within the framework and its cost to borrow reflects the risk to the lender. The slide is provided in Figure 8.3. below.

Figure. 8.3. Presentation on the cost of borrowing commodity money for small businesses



Like the Director of the CDFI, the notion presented by the investment advisor was not incorrect from his perspective within the financial system. He probably did advise individuals who lent money to firms at an interest rate based on risk. However, if the financial system functions correctly, the small businesses should not need to borrow money from investors. They should be able to visit a commercial bank and have money created as credit (Chick and Dow, 1988; Rodríguez-Fuentes, 1998). The small businesses in the room all detailed stories of difficulties accessing finance, which

further reflected economic geography insights about withdrawal of financial services from local spaces for small businesses (Martin, 1999; Hall, 2012).

8.2.3. The Struggle to Provide Credit to a Discouraged Borrower

In October 2018, Credex started a six month support package from an entrepreneur-support service in Birmingham. This provided access to business advisors and hot desking that was shared with thirty-five other startup businesses. It enabled us to develop a commercial proposition alongside allowing observations of other startup business operations. One element that became clear was that we lacked a substantial sales and marketing strategy. We compared ourselves to another startup business who sat nearby and was selling a gamification software for call centres. They conducted around a hundred cold calls a day to potential customers and communicated the same elevator pitch each time. It was so effective, the Credex team would regularly say the sales pitch to one another as a joke; “do you know what gamification is?” (Diary Entry: Y2-005 - 12/10/2018). However, the joke was ultimately on us. It reflected a significant flaw in the development of the commercial proposition. We could communicate the benefits of gamification to call centres, but we had no similar elevator pitch or strategy to communicate the benefits of Credex to potential customers.

The initial sales strategy was to attend networking events across the West Midlands in a hope to meet potential customers. Over the period I attended over twenty five events and engaged with over two hundred small business-owners. There was no standardised elevator pitch or effective way of communicating the benefits of Credex to potential customers. I found myself largely talking about my research at the

University of Birmingham and the positive impacts of Sardex. When discussing Credex the focus was on the zero interest credit offer, but I consistently found that business owners would lose interest. Many of them would politely change the subject or point out that their business didn't currently require credit. The aversion to speaking about finance and credit potentially reflected the notions of self exclusion by small business owners identified by researchers (Lee and Drever, 2014; Mac an Bhaird et al, 2016). Throughout the discussions with business users, the only individuals that did appear interested were other financial providers or services such as financial consultants.

Two of the advisors within the entrepreneur-support service understood the commercial proposition of Credex as they were former users of a commercial barter network. They were incredibly enthusiastic about their previous participation within the commercial barter network. They explained how they always had "spare capacity" within the business and it was an effective mechanism to "monetise" using its private currency (Diary Entry: Y2-007 - 19/10/2018). Two crucial aspects were apparent from these discussions. Firstly, the commercial barter network had been very effective at communication, as these two individuals were reciting key benefits of a B2B mutual credit system, as outlined in Chapter 7. Secondly, they had very little interest in the credit that these individuals could have accessed through the circuit. The crucial benefit for these two individuals was the additional sales that they could conduct. They believed the circuit had provided around £30,000-worth of additional sales each year to their business. In fact they were unsure if they had ever even used the zero interest credit available within the network (Diary Entry: Y2-007 - 19/10/2018).

Figure 8.4. Photograph from the Credex Soft Launch Event



Figure 8.5. Photograph from the Credex Soft Launch Event



In March 2019 Credex conducted a soft launch with two local businesses at an event that was attended by local public, private and academic participants. The images

above in Figure 8.4. and 8.5. show myself and my colleagues at the launch event. The businesses conducted a transaction of £50-worth of the local currency in an exchange for a refurbished computer screen. Over the following months we attracted another five businesses to the circuit. Although this was an initial success, we were finding it very difficult to recruit businesses to join the B2B mutual credit system. Our branding was still associated with financial technology startups and the main benefit that we pitched to potential customers was zero interest credit. Whilst engaging with potential customers at networking events, it was still clear there was little desire among small business users for zero interest credit. Many conversations would actually not progress very far after I stated the name of the business: 'Credex'. business users displayed a slight hostility to financial products, with many of them using the discussions to raise bad experiences with commercial banks and financial institutions (Diary Entry: Y2-196 - 13/06/2018). The responses could be reflective of the notion of the 'discouraged borrower' (Han et al, 2009; Bhaird et al, 2016).

> *"After pitching the zero interest credit, he quickly lost interest in our discussion. It was strange, he had originally been very happy to talk to me."*
>
> (Diary Entry: Y2-185 - 15/04/2018).

Another crucial factor that we experienced in the months after our launch was associated with the relationship our circuit had with local space. Sardex had grown to a regional level, attracting businesses from across Sardinia (Mayer, 2015, Lucarelli & Gobbi, 2016). We had therefore launched Credex as a West Midlands scheme,

believing that as there were over 200,000 businesses in the region, we should be able to develop a circuit.

Our initial issues revolved around the fact many of the business users did not relate to this spatial scale and it was difficult to build a local community of belief around it (Lee, 1999; Harvey, 2006). Economic geographers have raised that money is a social relationship within a defined spatial scale (Leyshon and Tickell 1994; Lee, 1999; Harvey, 2006) and we had failed to adequately define the spatial scale that our local currency would be constructed within. The issues we experienced developing a financial initiative further reflected the notions highlighted by economic geographers that financial systems are inherently spatial (Martin, 1999). There were strong associations with smaller spatial scales, such as the Black Country or Solihull. In one of the interviews with a sector expert analysed in Chapter 7, he described a notion that a local currency requires a “common bond” - an element that connects the participants together.

> *“...if you can get the common bond and develop proof of concept and I think what you're doing in terms of focusing on geography, a commitment to people in place, you know, so in the sense the Brummie Pound idea, makes a lot of sense in Birmingham.”*
>
> (UK Schemes and Experts 21 - Interview)

Although we spent six months attempting to recruit business users to Credex, we felt we had structural issues that were reducing our ability to develop a B2B mutual credit system. Firstly, we had found that businesses were not motivated by zero interest credit and largely distrusted financial institutions. Even the name “Credex” was off-

putting to some business owners, which significantly reduced our ability to explain the wider benefits. We struggled to articulate the benefits of the circuit beyond this zero interest credit offer. Secondly, we had not been able to develop an effective common bond between businesses at a regional spatial scale. Business owners did not relate to the West Midlands and it was not a significant enough space to construct a community of belief who would accept our local currency as payment (Lee, 1999; Harvey, 2006), even if many of them did support the idea of doing business with local independent firms. We had developed the name “Credex” to replicate Sardex, believing the credit to be an important feature, but we realised the crucial element within the name Sardex was actually “Sar”, for Sardinia, as this was the common bond of which the local community of belief had developed (Lee, 1999; Harvey, 2006). In August 2019 we decided to go back to the drawing board and develop a new strategy to launch a B2B mutual credit system.

8.3. Parity: The Relaunch of a Credit-Based Local Currency

8.3.1. Redevelopment of the Scheme

In the first six months of Credex there had been a number of lessons. Businesses were more interested in additional sales, rather than the zero interest credit. There appeared to be a general aversion to accessing credit, meaning users did not find our zero interest offer appealing (Han et al, 2009). Engagements with over two hundred businesses had identified a desire to operate locally and work with independent firms, but the West Midlands was too big of a spatial scale. This potentially reflected criticisms of the Bristol Pound that even a city-scale local currency had lost many of the committed demographics who favoured community scale initiatives (Dittmer, 2013;

North, 2014b). We had learnt the benefits gamification could provide to a call centre - or rather, we had learnt from this company how to conduct effective B2B sales and marketing. When Credex was launched we believed that once the website was live, potential customers would contact the company. It had become clear that this wasn't the case. To obtain customers, we would need to take the offer out to local businesses.

The first area of development was around the name, logo and branding. The name Credex was too financial and had been reducing the interest in our scheme even before the wider benefits were communicated. We believed that a focus on the social aspects that a B2B mutual credit system could offer individual firms would have a greater appeal. The company was rebranded to Parity Network Ltd (Companies House, 2021), as the word parity has positive connotations of equality. We replaced the financial blue and grey colours with shades of pink and identified an emblem that reflected the notion of equality. The strapline 'business credit network' was removed. The new logo is presented below in Figure 8.6.

Figure 8.6. Parity logo and emblem used from August 2019



The second area of development was to clarify the commercial proposition to potential customers. The Credex messaging had actively avoided discussing the notion of a local currency as there were negative connotations with cryptocurrencies. However, as Bristol Pound had successfully attracted over six hundred businesses (Madle, 2017) with their local currency pitch, we decided to readopt the term. Messaging and communications were developed to focus on how potential customers could use the local currency to access local sales opportunities. It actually became easier to explain the credit, as business owners had disbelieved that credit could be zero interest due to commodity understandings of money. The restriction of only being available within a local currency appeared to make the notion more believable. Shaw (2019) had found that uptake of a local currency was possible if it was not considered too radical by business users. We aimed to create a pitch to business users in which the local currency could help them achieve their business goals such as meeting new customers and increasing sales.

The third area of development was a focus on building a ‘common bond’ and community of belief around a local spatial scale, as we had not implemented a cooperative governance structure which other schemes use as a common bond (North, 2014a). Two areas were considered in Birmingham: Digbeth and the Jewellery Quarter, as both were known for independent businesses and a business population that held alternative perspectives. The Jewellery Quarter was appealing due to one thousand independent businesses located within walking distance of its central street (Jewellery Quarter Business Improvement District, 2020a). There was a strong community feeling among the businesses based locally, who were proud to be located in the Jewellery Quarter. There were local media publications (JQ Life, 2020), an active Jewellery Quarter Business Improvement District (2020a) and regular events. It was

believed that this local space could provide the basis for the development of a common bond, which could allow the community of belief to accept the local currency as payment to develop.

The final area of development was the business processes, specifically developing effective sales and marketing activities. We gained a grasp of the terminology, describing potential customers as ‘prospects’ and ‘leads’. A ‘sales funnel’ was developed where relevant prospects were identified and targeted using marketing activities. The approach was termed an ‘outbound sales strategy’ in which hundreds of relevant businesses in the Jewellery Quarter were mapped and identified. Boards were placed on the walls of the office which featured the target prospects and we created sales targets. Ironically, the strategy was actually borrowed from a criticism of a commercial barter network featured in Chapter 7. Each morning the team arrived with a target to ring a certain number of businesses with the hope to ‘convert’ prospects into customers. We believed we had developed something that had taken the best elements of the commercial barter networks (Marvasti and Smyth, 1998; Lithen, 2002); sales and marketing processes, with the regional development objectives of complementary local currencies.

The substantial learnings-based changes that had been applied to develop the scheme resulted in some initial positive outcomes. The local currency was relaunched in January 2020 and over the first three months, local businesses began to become convinced about the concept of a local currency. A range of business types signed up to the local currency, including service providers, an event space, a brewery and a local independent pub (Parity, 2021), shown in Figure 8.7. Business users began actually using the local currency, making purchases from one another, sometimes without our knowledge. The initial sales and marketing strategy was effective at

attracting a diversity of business users. There were individuals who were responding to messages about supporting the local economy and regional development. On the other hand, there were business users who cared little for these aspects but were interested in using the local currency to identify new customers. Potentially we were replicating a benefit of Sardex, in which users did not need to be ideologically convinced to participate within the local currency (Dini & Kioupkiolis, 2014).

Figure 8.7. Sticker in an independent pub promoting acceptance of local currency



In March 2020, with coronavirus rates rising quickly across Europe, Parity hosted its first networking event. The users and a wider set of businesses were invited for drinks at the independent pub. Parity members were purchasing their drinks using the mobile application, which was a very proud moment for the team. Other business users were bemused at the sight of goods changing hands for a local currency. Our members asked why we were not using our own currency to purchase our drinks, as we were paying in pounds. The notion that we were not using our own currency due to conflict of interest issues was largely lost on them. Although we thought it demonstrated good governance to build trust in our local currency, our customers actually thought we were a little misguided. It did allow the issues of governance to be raised and we inquired

about the notion that we could have been a cooperative, a subject that had received some debate within the local currency sector (Douthwaite, 2000; Bollier and Conaty, 2015; Augustyn, 2017). The business users found the idea of a cooperative unappealing, as they were all familiar with private structures. The insight may reflect the decision of Sardex not to adopt a cooperative model for similar reasons (Dini and Kioupkiolis, 2019). The following Monday strict lockdown measures were announced by the UK Government, plunging the local currency into uncertainty.

8.3.2. Public Sector Grant Support to Develop Parity

In the weeks prior to lockdown, Parity Network Ltd had been successful in applying for a £5000 grant from the Greater Birmingham Solihull Local Enterprise Partnership (GBSLEP) (2021). The application was a presentation that had outlined the benefits that B2B mutual credit systems were having in Italy and Switzerland (Iosifidis et al, 2015; Stodder, 2016), whilst demonstrating the initial uptake in the Jewellery Quarter (Annex 06). The grant supported the development of business processes through market research.

The market research was delivered by a local agency who proposed a three stage process. First, interviews would be conducted with the current customers and other businesses who had been targeted but had rejected the offer. The aim was to understand the motivations of businesses who responded positively or negatively to the offer. Secondly, these insights would be used to develop better messaging to make the sales and marketing efforts more effective. Finally, the agency would then create a marketing strategy that could be delivered by Parity to increase the number of businesses using the local currency.

The market research and branding agency conducted twelve semi-structured telephone interviews with local business users to discuss Parity. The business users were encouraged to talk freely about the local currency to this third party, which allowed a range of interesting insights to be established. Firstly, many of the businesses were drawn to the notion of supporting the local economy and participating with shared values within a community of belief (Lee, 1999) who accepted a local form of payment. The importance of supporting local independent businesses was recognised and there was a belief a local currency could benefit this objective.

> *"I prefer to stay local when I can. There is a place across the road that I buy my packaging from. Things that I can use in the area I will."*
>
> (Market Research Agency - Retailer Interview 1)

> *"We like to think of ourselves as the [place] for the JQ so we want to work with other local businesses. There is a nice community here. We look out for each other."*
>
> (Market Research Agency - Food + Beverage Interview 4)

Secondly, even though many of the interviewees had signed up and had used Parity, there was still a limited understanding of how the local currency operated. Business users did not know how to make purchases or receive payment within the circuit. The businesses also worried about being overexposed to the local currency. They were happy to do a little bit of work through the circuit, but didn't want businesses approaching them to make large purchases.

> *“It’s quite difficult really to get your head around how it works for my business. I can’t get past that.”*
>
> (Market Research Agency - Food + Beverage Interview 3)

> *“...but we’d be racking up a lot of credit without being able to sell on it. We have got to be careful. It’s all very well using currency, but your team won't take payment of salary on Parity. So there is a resistance to overuse it.”*
>
> (Market Research Agency - Professional Services Interview 4)

Finally, there was a mixed reaction to who we were as an organisation and limited understanding of our wider regional development objectives. The market research also identified a key feature: businesses did not want to discuss finance and had largely negative views about the financial system (Appleyard, 2013; Mac an Bhaird et al, 2016). None of the businesses felt access to zero interest credit was important, they were more interested in additional sales. They understood the benefit of having access to a zero interest credit facility to make purchases, but none of them wanted to make any purchases. Many highlighted the idea of doing blended transactions with Parity and GBP. This would allow access to the benefit from extra sales the local currency provided, but also receive some GBP to cover core costs.

> *“You don’t want to ever have to get a loan, but there are times when you might have to do it to survive. You try to do everything you can to avoid it, but it is what it is.”*
>
> (Market Research Agency - Food + Beverage Interview 1)

> *“Definitely not. One, your bank charges are really high. If they charge you for that, the service should be better, but you get treated worse. There was a time where banks had a business manager, now all of that is gone.”*
>
> (Market Research Agency - Food + Beverage Interview 3)

The market research and branding agency returned some initial observations and suggestions. They specifically highlighted the notion that the users had to be aware of who accepted the local currency and what was available for purchase. It was suggested by the agency that a marketplace and ecommerce experience would address some of the issues identified by the interviewees. It would allow users to post offers of what they were happy to sell in return for the local currency, providing more control over their own participation. It would also allow business users to see what was available to purchase in the local currency, an issue that had been raised frequently.

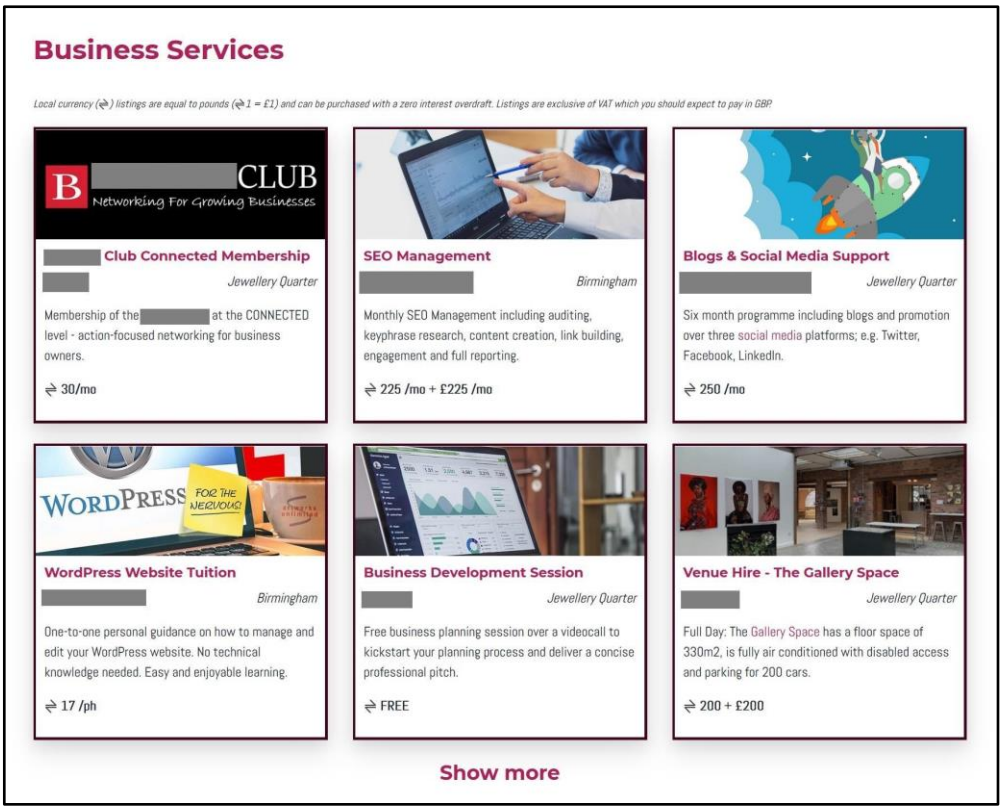
The market research and branding agency also proposed some changes to the communications and messaging. Although interviewees had stated little interest in credit, there was an underlying worry about cash flow. The agency believed that instead of focusing on credit, a focus on “trading without cash” would be more effective. Most of the interviewees had responded positively to the notion of supporting the local economy. The agency therefore proposed a new tagline for Parity: “local currency, local spending, local wins”. The final suggestion was around the commercial proposition and how this supported the understanding of the model. The agency believed that even the most effective education may not be enough to raise awareness about the unusual model. They therefore proposed the development of a “freemium

offer", as the most effective way a business user could understand the model is through conducting a transaction.

8.3.3. Further Developments and Initial Contributions to Regional Development

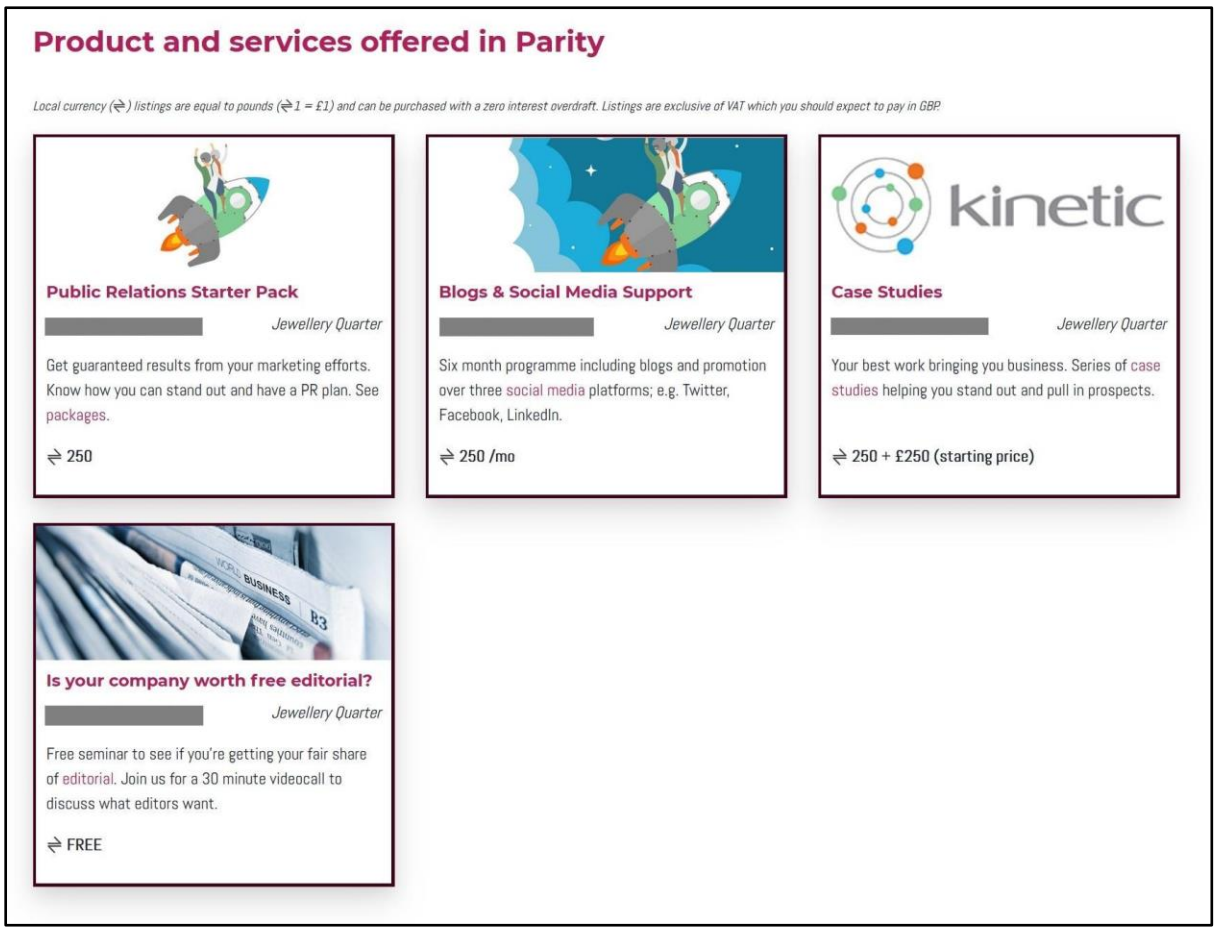
The market research had allowed an understanding of what users wanted from a local currency. The initial observations and suggestions were to reduce the reliance on the social relationship between business users through adopting a more ecommerce and marketplace experience. Sardex had been very effective at initially building its circuit within the small village of Serramanna. It had essentially built upon existing social relationships in which business users knew what each other offered (Littera et al, 2014; Iosifidis et al, 2015). Although the Jewellery Quarter offered a village-scale spatial scale to launch Parity, the number of local businesses meant that these social relationships did not currently exist. Business users were reluctant to engage one another about what could be offered, as they did not want confrontation or a negotiation. From July 2020 we developed an online marketplace and businesses were asked to submit offers that they were happy to provide in exchange for the local currency, which an example is shown in Figure 8.8.

Figure 8.8. Business Services available in the local currency (names removed) - November 2020



When engaging the users of Parity on what they could submit to the marketplace they were offered three options. Firstly, all businesses were required to submit a listing that was available completely for the local currency. Secondly, they were offered the chance to post a listing that was a “blended offer” of 50% in the local currency and 50% pound sterling. Finally, businesses wanted the option to post free services, such as assessments, consultations or advice. This would allow them to build the connections and meet new potential customers. All of the businesses submitted some combination of these three offer types to the marketplace, an example is shown in Figure 8.9.

Figure 8.9. Offers available from one company (name removed) in the Jewellery Quarter, Birmingham



The offers made by one company based in the Jewellery Quarter demonstrate how businesses used the marketplace. All of the services are essentially introductory or special offers, as the business did not post their premium services. The business user believed that the marketplace offered another way to meet new local customers, do some work within the local currency, but hoped that this would eventually lead to transactions in pounds. The approach became an easy way to explain the benefits of the local currency to prospects. Many of them had originally worried about becoming overexposed to the local currency, however the new model made businesses consider it more as a lead generation tool. On the opposite side of this arrangement, businesses

could now see what was available for purchase in the local currency. Due to the changes there was an increase in transactions within the network, including blended payments that allowed businesses to transact 50% in the local currency and 50% in pounds.

The agency had also provided a marketing strategy that Parity could implement. They identified four channels that the local currency could be promoted across: social media, local media, influencers and referrals. Although we had tried some of these channels before, the strategy provided a twelve month programme of work to build an awareness of the local currency. From July 2020 Parity began actively promoting itself across these channels and had some initial successes. We became much more active on social media, promoting the products that were available for purchase in the marketplace. We actively encouraged users to refer contacts to us, which resulted in three new customers. We wrote content for a range of local media sources including the Black Country Growth Hub (2020b), the Jewellery Quarter Business Improvement District (2020b) Birmingham Tech Week (2020b) and the Jewellery Quarter Card (2020b). The aim was to generate awareness about the local currency which would facilitate a more effective conversation when businesses were called as part of the outbound sales strategy.

There had been a significant amount of learning that had taken place. We had considered ourselves experts in the operational and technical aspects of alternative currencies. It had however become clear that this was only a starting position for the development of a local currency structured as a B2B mutual credit system. The advice to structure the model around a commercial proposition resulted in a need to understand the wider set of basic business requirements. Whilst becoming fluent in the terminology of B2B sales, I often thought back to the attendees of The Alliance of

Independent Currencies Event in Glasgow, Scotland (2017). We had essentially become everything that many of the local currencies perceived themselves to be working against. A sector expert had offered his opinion on why he felt the B2B mutual credit system model had not proliferated in the United Kingdom.

> *"...just hasn't been the right combination of people in the right area, with the right skills of bringing businesses together, you know, to make it happen."*
>
> (UK Schemes and Experts 10 - Interview)

I had originally perceived this insight as being associated with the understanding of the model or the technological barriers. Over the following two years I had come to believe that the main reason was associated with the skills of B2B marketing and sales. It had become clear why commercial barter networks had scaled, but there had been little in the development of endogenously-created credit-based local currencies. The individuals attracted to local currencies, including myself, tended not to be those who wanted to spend their time engaging in B2B marketing and sales. It appeared the right combination of people for the model rested on their skills to conduct these activities.

Although there had been a focus in both Credex and Parity on supporting regional development throughout the scheme, as of January 2021 there were very few demonstrable impacts. Businesses were attracted to the scheme due to the focus on supporting the local economy, however this only appeared to be a secondary feature

to meeting individual business objectives. This potentially reflected research that found small business users did not believe that their businesses had significant impacts on regional development or the themes of sustainability, even if they could implement positive changes (Simpson et al, 2004; Lewis et al, 2015). Sardex appeared to have impacts on regional development, but these are only evident with a large circuit. Parity had attracted twenty five businesses to its circuit who had conducted a couple of thousand pounds worth of business through the local currency. The scheme was at a too early stage to consider whether there will be impacts on regional development. The research did not identify any impacts on regional development or the themes of sustainability.

8.4. Conclusions

This final empirical chapter studied the development of an endogenously-created credit-based complementary local currency within Birmingham through the application of Participatory Action Research techniques. It considers its ability to provide credit to small businesses and the potential contributions to regional development. The first set of conclusions can be drawn from the focus on the period that was considered the end of the Birmingham Pound. It had a similar objective to stop the ‘leakage’ of funds from the city (Ward et al; Cato and Suárez, 2012) and the removal of the means of exchange (Seyfang, 2000), but had struggled to adopt a financially viable business model. The perspective reflected monetarist notions of the role of money within local and regional spaces which have been challenged by Post Keynesian scholars (Chick and Dow, 1988; Rodríguez-Fuentes, 1998). There was an interest in exploring alternative models: a commodity-based token and credit-based B2B mutual credit

system, but little knowledge of the ontological basis of money informed this decision-making process. It was clear there had been little critical analysis of the effectiveness of the commodity-based Bristol Pound-like model, which was also evident in the wider sector. There had been little exploration of using a credit-based model, but this was only raised to the Birmingham Pound Steering Group due to me highlighting the successes of Sardex (Littera et al, 2014; Motta et al, 2017).

Once there was a focus on the development of a credit-based model in Birmingham, there were a series of governance challenges that were apparent, which have a contribution to the debate around complementary local currencies and governance (North, 2014a; Bollier and Conaty, 2015; Augustyn, 2017). There was a divide among the Birmingham Pound Steering Group about how the model should be structured: private and focused on the benefits to individual businesses, versus cooperative and focused on the benefits to the region. This resonated with the arguments of North (2014a) and also reflected the divide identified between the commercial barter networks and local currencies in Chapter 7. The research identified that the ontological basis of money is not considered within the formation of schemes and that governance presents practical challenges that may not be fairly represented in the literature.

Credex was formed by insights from previous attempts to develop a B2B mutual credit system elsewhere in the world, which helped to develop Credex's processes. However, these insights provided further confirmation of theoretical perspectives, such as the need to ground it within a local space and focus on developing circuits of users with social relationships (Zelizer, 1994; Evans, 2009). The issues experienced developing the model reflect the notion that financial systems are inherently spatial, requiring a consideration of how they relate to their relevant spatial scales (Martin, 1999). Engagements with Community Development Finance Initiatives (CDFIs) further

confirmed theoretical understandings of money and credit, in particular a ‘deposits makes loans’ versus and ‘loans make deposits’ perspective (Rogers, 1989). These insights reflect regional development research that considers credit through this monetarist framework Dow and Rodriguez-Fuentes (1997).

Research indicated that there was significant market failure in access to finance within the city (Lee and Drever, 2014) and that institutions aiming to support small businesses largely worked within a ‘deposits make loans’ framework. Further granulations in the barrier to access to finance among small businesses within the study were identified, including social enterprises and BAME-owned businesses (Smallbone et al, 2003). The initial experience pitching Credex as an endogenously-created currency that applied a ‘loans make deposits’ framework, resulted in feedback that businesses were largely uninterested in this concept or accessing credit more generally. The insights relate to previous research on business users not believing credit could help their business operations (Kon and Storey, 2003), even when it was essentially free. The experiences reflect the theoretical concept of the ‘discouraged borrower’, business users that may benefit from credit, but do not seek to borrow it (Han et al, 2009; Bhaird et al, 2016). The negative feedback received by our initial focus on credit made us reconsider the way that the complementary local currency was being pitched within the marketplace. The research indicated that although credit is the central feature of the B2B mutual credit system model, it may not be directly appealing to the target audience.

Experiences engaging with business users and a review of the research on Sardex indicated that we needed to build a circuit within a spatial scale that could be related to by business users. The company was rebranded to Parity Network Ltd and had a greater focus on supporting users to find new customers, opposed to solely pitching

zero interest credit. There was initial traction with the change of focus, with a series of businesses signing up to Parity. There were a variety of initial firms, including those who were not ideologically committed to the notion of a local currency and were interested in the additional business opportunities. This indicated we had successfully replicated a feature within Sardex in which Dini & Kioupkiolis (2014) highlighted that users were not all ideologically committed to the social aspects of the scheme and developed an initial community of belief (Lee, 1999; Harvey, 2006). Market research identified that businesses were largely uninterested in credit and were sceptical of the dominant financial system, further resonating with research on 'discouraged borrowers' (Bhaird et al, 2016). The market research established that focusing on the local trade element was interesting to businesses, but they struggled to understand the concept of the B2B mutual credit system.

The journey established that the significant difficulty in developing an endogenously-created credit-based complementary local currency was the commercial offer, in particular the processes associated with marketing and sales. The change could be associated with criticisms in the literature that complementary local currencies need to appeal to elites to encourage a greater level of adoption (Dittmer, 2013). Through this process they then reduce the ability to implement more radical system change initiatives (Seyfang, 2001) or adopt a greater level of distributed governance (North, 2014a). Through the development of Parity we can conclude that by implementing a commercial offer and appealing to small businesses, we largely lost many of the initial regional development and sustainability objectives that were central to the Birmingham Pound Steering Group. We had essentially become a commercial offer whose main task was marketing and sales.

Through its development the research did not identify any initial impacts that the scheme was having towards regional development or the themes of sustainability. The focus on providing a commercial service to maximise the sales made by small businesses through a local currency circuit may eventually have positive impacts on regional development if the model was able to scale, as what was observed with Sardex in Chapter 6. The focus on providing credit to small businesses and supporting regional development through responding to the withdrawal of financial services (Martin, 1999; Hall, 2012) did not appear to be a successful outcome at the small circuit of this circuit, but may have potential if the scheme could scale further. It potentially indicates why there has been very few successful complementary local currencies structured as B2B mutual credit systems. Practitioners start local currencies to support radical system change initiatives (Bowring, 1998; Douthwaite, 2000; Mock et al, 2013), but developing a successful circuit appears to need tools that are central to the system that practitioners are attempting to change. Sardex demonstrated that a radical model can be appealing to small businesses if these contradictions are balanced and the benefits identified within this research indicates it is a model that UK practitioners should aim to apply. The next chapter will discuss the overall conclusions from the thesis and directions of future research.

9. CONCLUSIONS

The aim of this investigation was to consider the contributions complementary local currencies could have to regional development through providing credit to small businesses. Economic geographers have considered money as the most spatial of economic phonenomen (Lee, 1999), highlighting how the exchange and circulation of money is directly connected to space. However, although there has been significant interest in how money relates to space, much of the academic work is largely grounded within orthodox neoclassical perspectives of how money circulates within spaces, with Pollard (2003) believing these were ‘theoretical legacies’ within the discipline. The more recent development of heterodox ontological understandings suggest that “credit, and credit alone, is money” (Innes, 1914: 159), created by states (Wray, 2015; Kelton, 2020) and commercial banks (Ingham, 2004).

Researchers and practitioners largely focus on convertible local currencies and cryptocurrencies, which resonate with orthodox commodity understandings of money and largely do not challenge the ontological basis of money within their analysis (Cato and Suárez, 2012; Bjerg, 2016). My PhD journey began when Professor Paolo Dini at the Blockchain and Sustainable Communities Conference (2016) in Cloughjordan, Ireland called for local currency practitioners to understand this fundamental difference in perspectives of money. The investigation aimed to bring together these two theoretical strands: firstly, to use complementary local currencies as a concept to highlight two fundamental differences in the ontological basis of money and credit. Geographies of money and credit largely do not apply heterodox economic understandings of money and credit, yet its application as a lens could provide a new avenue for analysis (Chick and Dow, 1988; Chick, 1993; Fuentes, 2006). Secondly, to

apply heterodox economic understandings of money and credit to complementary local currencies to understand their initial contributions to the themes of sustainability and regional development. Economic geographers have a strong interest in regional development, a concept that complementary local currencies have been associated with (Seyfang and Smith, 2007; Dittmer, 2013), but the contribution of credit-based schemes was unexamined. The following chapter draws together the conclusions from this investigation to begin to address these knowledge limitations.

9.1. Addressing the Research Objectives

Each of the original research objectives are now considered to outline the findings and contributions from the research.

i. *Understand the Sardex complementary local currency through the lens of heterodox economic theories and geographical perspectives of money and credit. To consider how the local currency is created in response to the demand for credit and how it is used by small businesses.*

The thesis established the origins, current position and future potential of Sardex to provide context. Interviews with Sardex business users and stakeholders provide insights into the scheme and it was considered through the lens of heterodox understandings of money (Knapp, 1924; Polanyi, 1971; Wray, 1992). The model of local currency used by Sardex resonates with chartalist perspectives of money (Knapp, 1924; Keynes, 1930) with users agreeing on an exchangeable value, alongside supporting the notion that a range of monetary structures exist to allow the

payment of debts (Keynes, 1935). The model can be understood through economic geography perspectives, who consider the state as the ultimate validator of the currency in circulation within its defined space (Lee, 1999). In the case of the Sardex complementary local currency, it is the Sardex company that is the validator of the currency within its defined spatial scale. The model, a Business-to-Business (B2B) mutual credit system, allows units of local currency to be created as credit and accepted as payment between users within a defined spatial scale. This directly reflects an infamous description of money, “everyone can create money, the problem is to get it accepted” (Minsky, 1986: 228).

Sardex allows additional liquidity to be created for businesses in the form of zero interest credit, meaning it thrives within a local economy where euros are in short supply. The model contrasts with the dominant focus of complementary local currency academics and practitioners: Convertible Local Currencies (CLCs) such as Bristol Pound (2021) and cryptocurrencies such as Bitcoin (Nakamoto, 2008), which are commodity-based and have to be first purchased. The success of Sardex is demonstrated by its expansion across Italy to other regions and a growth in transactions (Sardex, 2021). Its commercial focus and recent venture capital investments raised implications for its governance, a subject that is contested within the field (Bollier and Conaty, 2015; Augustyn, 2017). The profit-orientated model is in contrast with other local currencies that are often structured as non-profit social enterprises (Bendall et al, 2013). However, this insight directly supports the arguments of North (2014a) who argued that governance was associated with the objectives of schemes, believing initiatives that aim to support the local economy prefer private structures and “feel stifled by commitment-building mechanisms” (2014a: 190) within cooperatives.

The study applied further theoretical frameworks to understand the impact that the scheme has for small businesses and the local economy. The model of currency creation was considered through a framework of the endogenous-exogenous (Wray, 1992; 2000) and demonstrates how money is created in response to credit within regional spaces (Chick and Dow, 1988; Chick, 1993; Fuentes, 2006). Sardex operates as a circuit of debtors and creditors, that could be considered a decentralised version of the monetary circuits (Dodd, 1994; Parguez and Seccareccia, 2000). Furthermore, it resonates with the concept of a Zelizer Circuit (Zelizer, 1994; Collins, 2000), in which users 'earmark' money for specific purposes based on social relationships. These observations largely contradict orthodox understandings of money as a depersonalised leveller of social relationships (Evans, 2009). The notion highlighted by economic geographers that money transmits social norms and values were further identified within Sardex, with its users demonstrating a commitment to the community of belief that accepts the currency as payment (Lee, 1999; Harvey, 2006).

Sardex endogenously-creates its local currency as credit which is unconvertible to euros, a diverse circuit of producers, suppliers and consumers within its defined spatial scale is needed to ensure the 'spendability' of SRD. The research demonstrated how this operates in practice, highlighting how they access 'peripheral costs' - accountants, cleaners, marketing, even if their 'core costs' were unavailable through Sardex. Businesses within the Sardex circuit are all local and independently-owned, which ensures supply chains are localised, an objective of researchers and practitioners of complementary local currencies (Dittmer, 2013; North, 2014b). The local currency supported additional economic activity with business users reporting between 2-25% extra trade and customers. This increase confirms other studies on credit-based complementary local currencies (Ruddick et al, 2015) and the positive contribution to

the regional economy. Sardex has developed a ‘Business-to-Employee’ (B2E) which has attracted retailers and personal service providers who operate a Consumer-to-Business (C2B) model, that is similarly visible on high streets in Sardinia, like the CLC models in the United Kingdom (Ryan-Collins, 2011; Cato and Suárez, 2012). The research facilitated by the existence of a publicly available map of Sardex users was available that highlighted C2B businesses participating in the B2E initiative.

ii. *Establish whether Sardex and its credit-based complementary local currency has initial contributions towards regional development. To establish how the scheme is sustaining positive economic, social and environmental outcomes.*

Regional development was considered through three broader themes: economic, social and environmental (Alhaddi, 2015; Purvis et al, 2019). The first conclusions are drawn about the economic theme. Interviews with business users identified evidence that Sardex is supporting the localisation of economic activity, a key aim of complementary local currency academics and practitioners (Seyfang, 2001; North and Longhurst, 2013), although commodity-based models have failed to achieve this objective (Marshall and O’Neill, 2018). Interviews with business users found that most of them switch to local suppliers encouraged by the ability to purchase products and services with SRD instead of euros. Although the majority of these exchanges centred on ‘peripheral costs’, there is evidence that businesses were able to locate ‘core costs’, further strengthening regional supply chains.

Another contribution to the economic theme centred on Sardex acting as an innovative mechanism to support traditional high streets, an objective pursued by academics and

policymakers (Parker et al, 2017; Future High Streets Fund, 2019). The B2E initiative supports retail businesses located within traditional high streets, with customers journeying to town centres to be able to spend their SRD. This increased footfall and in some cases resulted in businesses receiving a significant proportion of their annual revenues in SRD. The need for circuit users to maximise the spendability of SRD encouraged them to seek out purchases from other circuit members who are located within the local spatial scale, indicating evidence of the behavioural changes sought by complementary local currency academics and practitioners (Graugaard, 2012).

The final contribution to the economic theme centres on evidence that Sardex offered an alternative mechanism to provide credit to small businesses, a well recognised underserved demographic of the dominant financial system (Appleyard, 2011; 2013; Henry et al, 2014; Lee & Drever, 2014). The research demonstrated that Sardex provides additional liquidity to small businesses, which is also being blended with euros in payments and is considering partnerships with regional banks (Hakenes et al, 2009; RSA, 2018). This evidence indicated that the model employed by Sardex could be offered alongside the jigsaw of financial services aimed at addressing the shortcomings of commercial banks (Pinsky, 2001; Aslan et al, 2018).

The second conclusions are drawn on the contributions that Sardex has to the social theme of sustainability within the context of regional development. The first contribution focused on the ability of Sardex to support disadvantaged communities. The study identified evidence of the significant amount of social capital needed to operate the Sardex circuit with business users reporting a pronounced sense of community and solidarity, confirming previous studies (Littera et al, 2014; Motta et al, 2017). Furthermore, these business users demonstrate a potent community of belief within the currency, where norms and values are transmitted through the local currency

among its users (Leyshon and Tickell, 1994). Sardex also acts as a financial mechanism used alongside public sector grants for startup businesses and young entrepreneurs, which potentially meets the call by Culkin & Simmons (2019) who believed it could offer an innovative financing mechanism for small businesses post-Brexit. Furthermore, the research indicated that there was an over-representation of demographics usually disadvantaged by the dominant financial system: female and BAME-owned businesses. This insight has some relevance to previous studies that highlighted that these groups find it more difficult to access financial services for their business operations and indicates some contribution to inclusivity as raised within the literature on the social sustainability theme in the context of regional development (Littig & Griessler, 2005; Murphy, 2012).

The second contribution to the social sustainability theme of regional development is associated with the multistakeholder partnerships that Sardex participates within. ‘Social Pay’ allows the payment of welfare benefits to individuals and encourages spending within local businesses, maximising their spend within independent businesses. The initiative offers an innovative insight to calls for a Universal Basic Income and how these policies can maximise the impact of public spending (Howard, 2018). The research found that the recent incarnation of the initiative: Local Pay, is used by foundations to distribute funds to individuals and families in extreme poverty. Although an effective mechanism to provide support to these groups, it did raise moral questions about the role Sardex has in limiting the ability to spend on certain items. The research offered contributions to the debate on the role that multistakeholder partnerships can have on regional development (Bendell et al, 2010; Pattberg et al, 2012), including with complementary local currencies (Ayres and Bird, 2018) and the Foundational Economy (Bowman et al, 2014; O’Neill, 2016).

The final set of conclusions for this objective are drawn from the contribution of Sardex to the environmental theme of sustainability in the context of regional development. There is evidence of the development of more environmentally-friendly products and services, a goal of previous academics and practitioners (Seyfang and Longhurst, 2011; North and Longhurst, 2013). The research identified cases such as supporting local food supply chains which would reduce the food miles of these products (Illbury & Maye, 2005; Duram & Cawley, 2012). Reductions in environmental impacts of products or services were seen in examples promoted at Sardex Mitzas (2018), which included a cork producer and manufacturer of eco-plastics. However, it is acknowledged that this could be a result of these sorts of businesses being attracted to the ethos of Sardex, as found in previous research (O'Doherty, 1999; North, 1999). The endogenously-created credit-based model implemented by Sardex encourages firms to maximise the spendability of the SRD. Therefore they seek out local suppliers, an objective highlighted by previous research (Seyfang, 2006), but not identified in commodity-based models such as the Bristol Pound (Marshall and O'Neill, 2018). However, hopes that Sardex could contribute to the objectives of some ecological economists that believe societies need to adopt zero growth stationary economies (Kallis, 2011; Kallis et al, 2012; Hanaček et al, 2020) appear unfounded, as the evidence indicates the scheme supported an increase in economic activity.

The final contribution to the environmental theme of sustainability is associated with the evidence that Sardex was supporting small businesses to implement energy efficiency and renewable energy technologies. Business users were using the local currency to make purchases such as energy efficient lighting and to install insulation. The ability of complementary local currencies to support these initiatives was highlighted as a crucial objective by Seyfang and Longhurst (2011), but there has been

little evidence of schemes being able to achieve these goals (Dittmer, 2013). The insight is relevant as small businesses are often considered a hard-to-reach demographic and access to credit is often considered as a contribution to the 'energy efficiency gap' (Dietz, 2010; Allcott and Greenstone, 2012). The need to spend the SRD was supported by evidence of the introduction of an additional credit facility for capital investments: Sardex Efficio (2021). It provides an innovative mechanism for businesses to make larger energy efficiency interventions. Interviews with energy efficiency technology installers found that some circuit members have already started using this facility. Sardex demonstrates a range of initial individual contributions to the three sustainability themes within the context of regional development. Evidence was identified that it is meeting some of the expansive objectives that researchers and practitioners have had for schemes, but until now have found little evidence of them meeting them.

> iii. *Review complementary local currency schemes within the United Kingdom and their ability to provide credit to small businesses. Consider how these schemes can be considered through the different ontological lenses of money and credit, and their initial contributions to regional development.*

The data collected in this research on UK schemes considers both exogenously-created commodity-based and endogenously-created credit-based schemes. It provided a comparison of the different ontological perspectives of money and credit through their application in alternative models (Chick and Dow, 1988; Rodríguez-Fuentes, 1998), alongside understanding how these relate to the spatial context in which they are located. It first explored exogenously-created commodity-based

initiatives, including the dominant Convertible Local Currencies (CLCs) such as Bristol Pound (2020), but also the development of cryptocurrency-based initiatives such as Hullcoin (2021). The research found evidence that industry stakeholders believed that CLCs had not adopted a viable financial model, confirming previous insights with the Birmingham Pound (Bowles, 2017). It confirmed that CLCs relied on grant finance or income generated through the sale of local pounds to collectors from outside the local space, a process termed ‘leakage’ (Ward et al, 2002). This insight contradicts the belief that CLCs were designed to stop leakage of money from a local spatial scale (New Economics Foundation, 2002; Cato and Suárez, 2012). The research highlighted that the fact that exogenously-created commodity-based models could be exchanged for pound sterling limited their ability to construct local supply chains, whilst the spendability of SRD was considered as a key driver for Sardex. The research then considered later entering, more commercially-focused schemes, in the form of the Liverpool, East London and Lake District Pounds and found evidence that they too did not identify a viable financing model. It appeared that schemes were suffering from a degree of groupthink and not sufficiently questioning the financial viability of the CLC model. Previous research has recognised the effectiveness of the CLC sector to share learning and provide peer support (Seyfang and Longhurst, 2012), however this study suggested this may have actually contributed to the eventual decline of the sector.

The inquiry into whether commodity-based models could provide credit to small businesses centred on the Bristol Pound business loans initiative. Due to the fact that the model is backed by pounds there was a need to first raise capital via the Bristol Credit Union (2021), resonating with the ‘loanable funds theory’ (Robertson, 1940; Tsiang, 1989) or ‘deposits create loans’ perspective of money and credit (Rogers, 1989). The model reflected the dominant understanding of the role of money and credit

within regional spaces, in which there is a finite amount of money available to be lent onwards as loans (Dow and Rodriguez-Fuentes, 1997). This research raised questions about its effectiveness, as these funds would have already been in existence and possibly accessible to small businesses. There was recognition by interviewees of tension between the lenders and the borrowers.

There was a hope among Bristol Pound managers that the model was a precursor to a Sardex-like B2B mutual credit system termed Prospects. The research indicated it would have required the development of an interconnected complementary local currency system in which a commodity-based and credit-based system could interact. The model would likely attract regulation under the Financial Services Directive 2 (FCA, 2021) and its financial viability was unclear. The final area of inquiry was whether the provision of credit in this manner could contribute to regional development. Many of the arguments from interviews were associated with increasing circulation of the Bristol Pound, a scheme that had already been identified as having little impact on these objectives (Marshall and O'Neill, 2018). I identified little evidence there were contributions to regional development from the exogenously-created commodity-based local currencies operating within the UK.

The investigation then considered the limited UK schemes that implemented endogenously-created credit-based complementary local currencies, which included Commercial Barter Networks (CBNs) that are largely ignored within the literature (Bendell, 2017). Interviews with sector experts found that private governance arrangements and the profit-motive was the reason for low interest by complementary local currency practitioners, which would reflect the arguments of North (2014a). Through interviews with CBN managers the research found that they had developed a scalable model with a commercial offer, resonating with previous studies on this sector

(Marvasti and Smyth, 1998; Lithen, 2002). However, the aim of the CBNs were to operate on a global scale and the schemes were disconnected from a specific local scale like the complementary local currencies. There was evidence that the CBNs were abusing their positions of power within their circuits, which was undermining trust among their community of belief who accept the currency as payment. This may reflect the notion highlighted by economic geographers that financial systems are inherently spatial (Martin, 1999), through trying to disconnect themselves from a specific space, the CBNs may be undermining their circuits.

The development, but non-launch of Prospects aimed to apply this model alongside the objectives and governance arrangements associated with local currencies within a specific local space. Interviewees recognised that the scheme could have a larger impact on regional development, with the potential to increase the liquidity available to small businesses, as demonstrated with Sardex in previous chapters. The development of the Open Credit Network (2021) appeared to indicate that practitioners were beginning to understand the fundamental nature of money and credit. Their aim to embody cooperative values within their circuit to build a community of belief to accept their currency as payment, supports the notion highlighted by economic geographers that money not only transmits economic value, but also social norms and values (Leyhson and Tickell, 1994; Lee, 1999), even if it was not specifically tied to a local space. They focus on providing an alternative to commercial banks, whereas CLCs consider themselves as an alternative to pound sterling (Cato and Suárez, 2012).

The final area of consideration is the potential contribution to regional development of endogenously-created credit-based schemes. The commercial barter networks appeared to be having an initial contribution, as there were services available that

could result in a reduced environmental impact. However, these schemes were not grounded within a specific space and therefore did not consider themselves as an ‘economic intervention’ to support regional development, but a business tool to maximise the profits of individual businesses, again reflecting the arguments of North (2014a). There was very little evidence to suggest that these schemes were actively supporting these objectives or that business users with these ideological perspectives were being attracted to these networks. Nevertheless interviewees from Prospects suggested that the development of a credit-based local currency could have resulted in contributions to regional development. A scaled Prospects scheme could result in the development of a regional central bank-type arrangement in which monetary policy is set at a regional level (Dikau and Volz, 2020) and reflects Post Keynesian perspectives on how money functions on a regional level (Chick and Dow, 1988; Rodríguez-Fuentes, 1998).

The final area of consideration was the potential for a local currency created without interest to challenge the capitalist growth logic associated with the dominant monetary system (Douthwaite, 2012; Kallis et al, 2012). Sector experts were sceptical of whether this could have a significant contribution and whether money is even a central feature within the growth logic of capitalism, as reflected in Post Keynesian literature on the topic (Cahen-Fourot and Lavoie, 2016). The ability for a B2B mutual credit system to challenge the dominant model of money is also contested in this thesis. The credit-based model resonates with heterodox understandings of money, which consider it as a tool of the state (Knapp, 1924). It is difficult to conceive of how a scheme could replace this fundamental feature of money, which would then question the effectiveness of this strategy in eventually supporting regional development, especially as Modern Monetary Theory (Wray, 2015; Kelton, 2020) is now gaining wider

acceptance. There was little evidence that the endogenously-created credit-based complementary local currencies were having an impact on regional development within the UK.

iv. *Apply the findings from the first three objectives through Participatory Action Research to develop a complementary local currency in Birmingham, UK employing a endogenously-created credit-based model. To understand the barriers, opportunities and initial contributions to regional development.*

My thesis highlights the journey taken as a researcher and a practitioner. Alongside conducting research to meet the initial three objectives, I contributed to the development of an endogenously-created credit-based local currency in Birmingham, which I studied through Participatory Action Research (PAR) techniques. Initially, the Birmingham Pound scheme had aimed to apply the exogenously-created commodity-based Convertible Local Currency (CLC) model. The Birmingham Pound Steering Group provided a platform to consider alternatives to the CLC model after it struggled to start the scheme, as discussed in Bowles (2017). A commodity-based cryptocurrency model termed “Brumcoin” was conceived (Annex 02), alongside a credit-based B2B mutual credit system initially termed “BrumEx” (Annex 03), with the steering group believing the latter to be more applicable to meeting its objectives of stopping ‘leakage’ of funds from the city (Sacks, 2002; Ward et al, 2002).

The focus on a credit-based model resulted in interest from a range of stakeholders that were not usually engaged with the local currency sector which raised the issue of small businesses struggling to access affordable credit in the city (Appleyard, 2011; 2013). Attendance at a local currency conference allowed observations which

confirmed that schemes were not applying credit-based models, even with successes in Italy (Iosifidis et al, 2015; Motta et al, 2017) and Switzerland (Stodder, 2016). The reorientation of the Birmingham Pound Steering Group towards a commercially-focused credit-based model resulted in observations of the governance concerns that have been prevalent within the industry and associated literature (Seyfang, 2001a; North, 2014a). Although a cooperative model is often considered as the most suitable way of developing local currencies (Bollier and Conaty, 2015; Augustyn, 2017), there were practical issues with this approach in Birmingham, with me experiencing a disproportionate time contribution to the scheme. The observations highlighted tensions between developing a commercial proposition versus a non-profit community initiative and provide first hand insights to the debate on the governance of complementary local currencies (North, 2014a).

The next stage was the development of a commercial proposition and formation of an initial attempt of an endogenously-created credit-based complementary local currency termed, Credex Network Ltd. Its development attracted interest from other B2B mutual credit systems from around the world, which provided observations about the failures of other schemes. The insights from these schemes strongly resonated with theoretical perspectives about the nature of money. They highlighted the need to develop diverse local circuits resonating with monetary circuit theory (Ingham, 2004; Pilkington, 2009), alongside the need for strong social relationships to encourage transactions, resonating with the concept of Zelizer Circuits (Zelizer, 1994; Evans, 2009) and the need to build a community of belief who would accept the currency as payment (Lee, 1999; Harvey, 2006).

Engagements with local stakeholders resulted in Credex focusing its development as an ‘economic intervention’ in an attempt to offer an innovative ‘jigsaw’ piece in the

services in the city that addressed the small business access to finance issue (Henry et al, 2014). Other interventions such as Community Finance Development Institutions (CDFIs) (Rubin, 2001; Appleyard, 2011; 2013) were supportive of Credex, and observations were made through the lens of heterodox monetary perspectives such as a local incarnation of ‘deposits create loans’ (Rogers, 1989) and ‘loanable fund theory’ (Fontana, 2003). The impact of these institutions within local economies compared to commercial banks was limited, as CDFIs essentially considered money as a commodity that was lent onward from depositors (Pinsky, 2001; Aslan et al, 2018), whereas commercial banks are able to create new money as credit (Chick and Dow, 1988; Rodríguez-Fuentes, 1998). Although the literature highlighted a clear market failure in the provision of credit to small businesses (Henry et al, 2014; 2017), Credex failed to sufficiently attract enough interested businesses to its scheme. There appeared to be a clear aversion to even discussing credit among the businesses targeted. This resonates with the notion of a ‘discouraged borrower’ among the small business-owner demographic (Han et al, 2009; Bhaird et al, 2016).

The scheme was then relaunched as Parity Network Ltd, which was based on understanding the failures of Credex, such as the overreliance on the zero interest credit proposition. The branding and messaging were retailored to reduce the emphasis on the provision of credit and focus more on additional local connections and sales. This pivot significantly strengthened the perspective that the scheme aimed to support commercial objectives and the local economy, which reflected studies on complementary local currency objectives and their associated governance structures (Seyfang, 2001a; North, 2014a). The relaunch was within a specific spatial scale that aimed to create a mutual bond between users, resulting in some early successes and sign-ups. The resulting successes from the change of spatial scale reflected the

notions highlighted by economic geographers, that financial systems are inherently spatial (Martin, 1999). We felt that we had structured the proposition to ensure that there was no need for a “fixed and strong ideological commitment” (Dini & Kioupkiolis, 2014: 19), with a variety of businesses joining for different reasons.

There were transactions being conducted in the local currency and the scheme appeared to be gaining momentum before the Covid-19 lockdown in March 2020. Parity attracted a £5000 public sector grant to develop its model further, using this to conduct market research (GBSLEP, 2020). Interviews with local business users confirmed similar themes as within the data obtained on Sardex. There was an interest in trading locally, aversion to using the credit facility and most importantly, difficulty in understanding the credit-based model. Parity adopted a marketplace in which businesses could post special offers in exchange for local currency. This development did support further growth in the network, with the membership reaching twenty five businesses. The focus on developing a commercial offer required me and the team to gain an understanding of how to conduct more general business activities. Interviews with sector experts in Chapter 7 suggested the model had not proliferated due to a team with the right skills not being in the right place at the right time. The insight from this research is that the required skills are largely traditional business competencies: sales and marketing.

The early stage development of Parity Network Ltd did not demonstrate an initial contribution to the themes of sustainability or regional development. However, the application of the endogenously-created credit-based model demonstrated that widely held discourses associated with the role of money and credit with regional spaces (Chick and Dow, 1988; Rodríguez-Fuentes, 1998) could be challenged through an innovative complementary local currency. Small business access to finance was

highlighted as a significant challenge to regional development within the city of Birmingham, but the key stakeholders tasked with addressing this issue held beliefs about the monetary system that have since been challenged on a theoretical level (Wray, 2012; Wray, 2015, Kelton, 2020). Although no initial contributions were found with Parity Network Ltd, the scaling of an endogenously-created credit-based complementary local currency model may offer initial contributions to the themes of sustainability and regional development, as demonstrated through the case study on Sardex. The thesis provides significant insights to the theoretical and practical challenges of starting and scaling this model and hopes to provide researchers and practitioners a basis to consider the development of future schemes.

9.2. Implications of this Research

The next section will detail relevant insights for researchers, practitioners and policymakers.

9.2.1. Theorising Geographies of Money and Credit

This study provides theoretical insights relevant to geographies of money and credit. Firstly, it allows the application of perspectives from economic geography to complementary local currencies, that are usually reserved for monetary circuits operating at national and global scales. Complementary local currencies aim to offer an alternative to dominant social constructions of the economy and money (Leyshon and Thrift, 2007; Hall, 2017). They facilitate regionalised notions of exchange and transactions to provide a direct response or challenge to global currency systems and

circuits (Gibson-Graham, 1996; North, 2006a). The consideration of the complementary local currencies as circuits operating within local and regional spatial scales reflects theoretical perspectives within economic geography. It demonstrates that financial systems are inherently spatial (Martin, 1999) and that the local spatial context needs to be a consideration within their development. Furthermore, Sardex operates as a non-state issuer of a currency, but uses its central position in the circuit to be the ultimate validator. This is reflective of the intersection between money and power, highlighted by economic geographers at a nation-state spatial scale (Ogborn, 1998; Agnew, 2010). The Commercial Barter Networks (CBNs) highlighted these specific issues. They appeared to successfully apply the credit-based model, but they lacked any specific sense of place which in turn affected the trust that users had within these circuits. They undermined their position of power within their circuits by making transactions that were detrimental to the interests of their users.

The users of the Sadex complementary local currency demonstrated a wider social commitment to the scheme, forming a community of belief that accepted it as payment, a phenomenon which has also been argued within economic geography as essential to national currencies (Lee, 1999; Harvey, 2006). The circuit not only transmitted economic value across space and time, it also transmitted a wider set of social norms, discourses and values among the users of the complementary local currency. These were notions of solidarity supported by the creation of social capital within the Sardex circuit, but also provided a context to challenge the dominant values associated with globalised circuits of value observed in the global financial system (Gibson-Graham, 1996; North, 2006a). It was reflective of the social norms that economic geographers have highlighted are transmitted among the communities of belief that accept national currencies (Leyshon and Tickell, 1994). The application of these understandings were

applied to the development of Parity Network Ltd. The scheme first failed to establish a relevant spatial scale for its circuit, as it struggled to build a community of belief at a regional level. Once it relaunched the model within the Jewellery Quarter, Birmingham, it found greater willingness among local businesses to participate, with a small number of transactions taking place in the circuit. However, it did not sufficiently build an adequate community of belief around its scheme and failed to scale the circuit beyond its initial experimental stage.

The second contribution of the study to geographies of money and credit is through its ontological framing. The thesis has outlined and applied opposing monetary theories to progress an ontological understanding of complementary local currencies. The literature review identified that the study of money and credit within economic geography has been influenced by theoretical legacies that largely derive from neoclassical economics and monetarism (Martin, 1999; Pollard, 2003, Christophers, 2011b; 2011c). The understandings of the role that money and credit have within analysis of regional development have been influenced by the same set of theoretical constructs (Dow, 1992; Dow and Rodriguez-Fuentes, 1997; Fuentes, 2006), demonstrating the strength of hegemonic monetary discourses (Bindewald, 2018). The thesis provided an insight of these opposing theoretical perspectives of money and credit through the models of complementary local currencies studied that are constructed within these opposing ontological frameworks. The Bristol Pound Loans Scheme was structured within a more conventional understanding of money and credit, similar to that applied by economic geographers in their analysis of regional development. The funds needed to be first allocated by the Bristol Credit Union before provided to small businesses as loans. It indicates a neoclassical and monetarist perspective that money is exogenously-created commodity-created concept and the

issue with access to credit within the context of regional development is limited availability of deposits to facilitate supply of loans.

Sardex exemplifies an endogenously-created credit-based model of local currency that has greater association with Post Keynesian monetary theories (Wray, 2015; Kelton, 2020), in which money is created in response to the demand for credit by small businesses. Through demonstrating how these different ontological perspectives for understanding money and credit affect the structure of complementary local currencies, it offers a direction of travel for economic geographers hoping to apply Post Keynesian monetary theories within the study of regional development more broadly. According to this perspective, money is endogenously-created within regions by commercial banks as credit (Dow, 1992; Dow and Rodriguez-Fuentes, 1997; Fuentes, 2006). The barriers to small businesses accessing finance are associated with the institutional structures that create this money, alongside the demand for credit among small businesses. Money itself is a social construct that is supported by discourses, legal structures and the state, ensuring that there is a dominant form of money in circulation (Gilbert, 2011; Bindewald, 2018; Kelton, 2020). The societal discourses that have shaped the understandings of the role of money and credit within regional development were potently demonstrated in this thesis by a Director of a provider of loans to small businesses stating, “you can’t lend money, unless you have money”. Although Parity Network Ltd failed to scale past its initial experimental stage, through the application of Post Keynesian monetary theories it demonstrated that one can lend money, without having money.

9.2.2. Insights for Practitioners and Schemes

When I began my PhD journey I understood money and credit within the framework of the dominant orthodox perspectives. I had unquestioningly pursued the CLC model in the form of the Birmingham Pound and believed cryptocurrencies to be fundamentally different. However, considering money and credit through orthodox and heterodox theoretical frameworks, I began to understand the similarities between these models. The research applies these frameworks and identifies that ontological understanding of money likely contributes to why schemes are more successful than others. The CLC model is essentially an exchange of a commodity that has to be first bought, which restricts its ability to offer a viable mechanism to small businesses struggling with cash flow. The first insight from this research centres on practitioners understanding how the fundamental understanding of money affects how successful a scheme is. Money is credit, so to maximise the effectiveness of a scheme, practitioners should structure it to allow the endogenous creation of money as credit, which B2B mutual credit systems allow.

The second insight for practitioners centres on the business model that is implemented to manage a scheme alongside the locality in which it is launched. It is clear from the research that CLCs like Bristol Pound do not have a financially viable model. Once a scheme aims to develop a financially viable initiative there becomes a need to focus on providing a commercial offer. The thesis has shown that Sardex has walked a line between a commercial proposition and community benefit, demonstrates the ability to scale and is making contributions to regional development. Users have a strong business incentive to participate within the circuit and Sardex provides significant benefits which results in an ability to charge a membership fee, sustain an income and subsequently scale up. The focus on a commercial proposition meant the majority of

our time at Parity Network Ltd is focused on creating sales and marketing processes. The focus on a specific locality for Parity Network Ltd provides a strong basis to develop a local currency. A greater level of success may be achieved within a smaller, even isolated locality. One of the difficulties we experience is building trusted relationships between local business owners. Sardex started within the small town of Serramanna and likely benefited from the fact that business-owners already had long-established trusted relationships.

The third insight from this research is specifically focused on how theoretical perspectives can understand the development of cryptocurrencies and their application within local currency projects. Although I was an early convert to this model, using the credit vs commodity lens applied within this thesis, it potentially identifies why they have had limited uptake. Bitcoin was originally promoted as an alternative means for conducting transactions, but has now largely morphed into an alternative investment option: a ‘digital gold’. The thesis highlights why there may be limited uptake among consumers and small businesses. For them to participate in the alternative currency they must first purchase the commodity. This largely raises the question of why it would be used for daily transactions, as conversion attracts transaction fees. Bitcoin is likely suffering from the same problem as Bristol Pound but on a global scale. It may explain why the only non-investment market in which cryptocurrencies have had adoption is the illicit dark web markets, which can’t be accessed using traditional payment options. The commodity-basis of cryptocurrencies do not increase the liquidity available to their users. Through a Post Keynesian lens, they are not money at all, as all money is credit. The development of a cryptocurrency that creates units as credit would be a suggested avenue for exploration for local currency practitioners. However, this may contradict the fundamental basis of the

technology which is to create commodity-like units on a decentralised blockchain for trustless transactions.

9.2.3. Insights for Regional Development Policy

The thesis is written within a time of upheaval in the local currency field. The CLC model, just like the previous timebanks and Local Exchange Trading Systems (LETS), received public support in the hope of developing a mechanism to support regional development. The concern is that policymakers will reject the option of a complementary local currency due to the failures of high profile schemes such as the Bristol Pound. This thesis highlights that they should continue to support innovation in this field. Firstly, it demonstrates there are different ontological bases for local currency models which may go some way to explaining why the CLCs were not able to gain traction. A focus on credit-based complementary local currencies such as B2B mutual credit systems provides an avenue for exploration, especially within regions that suffer from economic depression. These credit-based models are largely unexplored within the UK and should gain policymaker support, like what is now happening in Wrexham, Wales with the launch of the Celyn (2021). One critical insight from applying a heterodox lens is that the option of accepting a credit-based local currency for taxes, like with Bristol Pound, is now unavailable. Unlike CLCs, B2B mutual credit systems create their own money which is not the dominant money, which indicates the government would not accept it as payment for taxes. Policymakers should consider alternative avenues for support for credit-based schemes, such as startup grants and building credibility through joint promotional initiatives.

The second insight is specifically around the three themes of sustainability. The thesis shows that Sardex has demonstrated a range of initial individual contributions that meet some of the expansive goals highlighted by researchers and far in excess of what has been achieved with local currency schemes within the United Kingdom. The cases this research highlights resonate with key objectives of policymakers. Sardex has demonstrated that once the difficult task of scaling a credit-based complementary local currency has been achieved, it can have a wide range of contributions to regional development. Policymakers should consider the economic impacts that Sardex achieves, creating an innovative way to support local businesses and the spaces in which they operate. With a focus on the 'Preston Model' in the UK which encourages more active and interventionist local councils, a credit-based complementary local currency may support these initiatives. Sardex also demonstrates social contributions, including supporting business owners from disadvantaged backgrounds. The multistakeholder partnerships undertaken by Sardex provide further avenues for exploration by policymakers, with initiatives to address extreme poverty. Finally, Sardex demonstrates a contribution to the environment theme of sustainability in the context of regional development. The ability to localise supply chains and support investments in low carbon technologies have been the focus of policymakers. Sardex demonstrates an innovative way to engage with SMEs on energy issues, a widely recognised hard-to-reach demographic.

The final insight for policymakers is associated with the small business access to finance issue, which was relevant when conducting research with small businesses on money and credit issues. Once the barrier of creating a viable circuit of businesses who accept payment in the local currency was overcome, Sardex provides zero interest credit, which could be considered within the 'jigsaw' of provision for small

businesses. The core overdraft-type product provides day-to-day working funds, which is further enhanced through the Business-to-Employee (B2E) initiative. Sardex reported in 2020 that their largest B2E business actually provides €1milllion-worth of transactions through this scheme. That is enough to support a workforce of 25-30 employees, further strengthening the local economy. The recently launched Sardex Efficio (2021) product provides an additional credit facility for investments. This allows an increase within business capacity through improving or extending premises, generating euro-denominated benefits. The additional credit can also be used to make energy efficiency interventions which would reduce energy costs and associated carbon emissions. Through the fact that this additional credit is made available through the circuit, these investments further support local supply chains and employment. The consideration of the small business access to finance issue through the lens of heterodox perspectives of money also provides policymakers an insight into the effectiveness of the jigsaw of provision for the withdrawal of commercial banks from local spaces. Ultimately, these replacement providers have a difficulty in meeting the needs of small businesses as they are unable to create credit as book-money like commercial banks. Although reform and potential regionalisation of the financial system is a greater priority, a B2B mutual credit system should be considered as an objective for policymakers considering the issue of small business access to finance.

9.3. Future Directions of Study

The research had resource limitations and constraints. There are two areas of interest that need further exploration. The first area would be to understand the implications of the growth of Sardex across Italy on regional development in the regions in which

circuits are developed. There are questions about the replicability of the impacts that were being observed in Sardinia. Does the circuit need to be of a certain size to allow the contributions observed to take place? If Sardex is moving towards one large national circuit, will this ultimately reduce the contributions that were being observed in Sardinia? A future study on regional development including the other regions may allow an understanding of potential contributions. Furthermore, the study also warrants an investigation into the impacts that WIR is having on the three themes of sustainability in the context of regional development within Switzerland.

Secondly, this study did not fully account for the size of the commercial barter industry or the relationship it had with complementary local currencies. Previous studies have largely disregarded this sector, but it does seem to have the ability to scale and operate commercially viable schemes. This study did not have the resources to conduct a similar sized set of interviews with users and this is something that the literature is currently missing. Applying the methodology developed in this thesis with Bartercard (2021) or WIR (2021) users may allow an understanding of the impact these schemes are having on the businesses that are using them. The majority of studies on these networks appear to have been conducted in partnership with the companies managing the circuits, whereas this thesis provides a methodology to reduce influence and bias within understandings of the impacts.

Over the past four years I have undergone a theoretical and practical journey. My initial starting position of largely accepting orthodox understandings of money and credit has been significantly challenged by my research. The growing interest in Post Keynesian understandings through the development of Modern Monetary Theory has made the work on credit-based complementary local currencies relevant to the changing landscape of the dominant monetary system. The application of a lens of geographies

of money and credit allowed me to understand complementary local currencies through applying perspectives usually reserved for the dominant monetary system. Through this application I have also realised that the way that the discipline understands the role of money and credit within regional development is also influenced by orthodox understandings, which I hope my research will contribute to the development of this field. Framing the investigation into complementary local currencies within this commodity-credit dichotomy allowed an understanding of the failures of the dominant local currency models and the application of these insights within a practical scheme. I hope that through submission of this thesis my insights can be relevant for researchers and practitioners hoping to develop credit-based complementary local currencies within regions outside of Italy and eventually contribute towards regional development.

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Annex 1. Overview of Currency Schemes

Name	Location	Supporting Information
Bartercard	*Northallerton, UK*	*https://www.bartercard.co.uk/*
BBX UK	*Bournemouth, UK*	*https://bbxuk.com/*
Birmingham Pound	*Birmingham*	*https://brumpound.wordpress.com/*
Bristol Pound	*Bristol, UK*	*https://bristolpound.org/*
Brixton Pound	*Brixton, London*	*http://www.transitiontownbrixton.org/groups-and-projects/brixton-pound/*
Celyn	*Wrexham, Wales*	*http://www.celyn.wales/*
Colu Belfast Coin	*Belfast*	*https://site.colu.com/belfast*
Colu East London Pound	*London*	*https://web.colu.com/community/london*
Colu Liverpool Pound	*Liverpool*	*https://web.colu.com/community/liverpool*
Exeter Pound	*Exeter, Deven*	*http://www.exeterpound.org.uk/*
Hullcoin	*Hull, Yorkshire*	*https://www.hull-coin.org/*
Kingston Pound	*Kingston*	*https://kingstonpound.org/*
Lake District Pound	*Lake District*	*https://www.lakedistrictfoundation.org/product-category/lake-district-gifts/lake-district-pound/*
Lewes Pound	*Lewes*	*https://www.thelewespound.org/*
Open Credit Network	*London, UK*	*https://opencredit.network/*
Prospects	*Bristol, UK*	*https://silo.tips/download/deliverable-15-at-dec-2014-marketing-plan*
Stroud Pound	*Stroud, Gloucestershire*	*https://en.wikipedia.org/wiki/Stroud_pound*
TBEx	*Aberdeen, UK*	*http://www.tbex.com/Trading/Marketplace/marketplace.aspx*
Totnes Pound	*Totnes, Dorset*	*https://en.wikipedia.org/wiki/Totnes_pound*
Yewtrade	*London, UK*	*https://www.yewtrade.com/*

Summary
Brumcoin is a local currency network that facilitates the trade of good and services between individuals within the West Midlands area. It is a platform, that provides users with a profile and digital currency wallet, which is connected to a marketplace of goods and services. It is the aim of Brumcoin to encourage individuals to share skills and experiences, through a token-based exchange, which can be used for the purchase of other skills and experiences. There is no intrinsic value associated with the Brumcoins, which should reduce the barriers of access.

Structure
The structure of the digital currency network can be understood through the way that users access the scheme. The following steps are taken;

1. Download free Android or Mac Smartphone Application
   Smartphones are ever reducing in cost and are now available for as low as £30. It is hoped that a free app will widen access to the network.

2. Register to the Brumcoin Network and Prove Identity
   The network will require individuals to register a prove their identity. This is possible through free third party apps including the one offered by the Post Office. Prove of identity is necessary due to individuals offering one another services, the geographical restriction of the network and the fact Brumcoins are initially offered free upon signup. Once registration is confirmed, user is provided with [X] Brumcoins free.

3. Make account "active" through offering goods or services onto the marketplace
   Brumcoin requires individuals to offer goods or services to ensure their account stays active. This will ensure that the network has a substantial offering and will facilitate the circulation of Brumcoins. The offer can be anything for any price, but users would need to consider the marketplace and the price of similar goods and services. Accounts that do not have any trade over a 3 month period are made inactive. If this account continues to be inactive, any Brumcoins are redistributed to a community chest.

Theoretical Perspectives
The digital currency network described has not actually been attempted before, although it is inspired by developing world notes where the currency has not defined value. The issue with other local currency schemes is that they are often "backed" one-for-one by national currencies. This provides a barrier to disadvantaged populations, as money is needed to participate. They also raise the question of the point of the schemes. Local currencies do facilitate local transactions, but these transactions may have happened anyway.

Brumcoins are different as they are given away. This means that the relative value of each Brumcoin is set by the price of goods and services offered on the marketplace which is in turn supported by the perception of its users. Initially it could be expected that users of the network might offer services as a way of promoting future purchases with fiat money. As the Brumcoins are perceived to have little value, it can be expected that only "free" services will be offered; hour guitar lesson, fitness instruction or yoga lessons. These may be offered with the aim of signing an individual up for further lessons. However, as more services are offered on the network, the Brumcoins in turn would be perceived to be more valuable, especially if useful services can be purchased. For example, an accountant may be willing to offer a service in Brumcoins, if they know that later those Brumcoins can be used to purchase legal advice. A strong network of services may in turn support the trading of goods. Someone who has a abundance of vegetables from their garden may sell them, or even a small coffee shop owner may consider Brumcoins valuable enough to offer coffee.

The approach of Brumcoin is pure speculation as it has not been tried within an advanced economy. However, theoretical underpinnings may support the idea of the scheme. Currency is often regarded as valuable when an individual knows that it can be exchanged for goods and services later. If there is a substantial offerings on the network, encouraged by the fact an account has to offer a service to be active, this may provide the basis of perceived value for the Brumcoin. The scheme could be considered a hybrid between a cryptocurrency, a time bank, a local currency and a LETS.

Network Development and Support

The value of the network derives from the number of individuals on the marketplace offering goods and services. To achieve this critical mass, users will be encouraged through the offer of a higher number of Brumcoins at the beginning of the scheme. This profile of this distribution will be;

First 200 Users – 20 Brumcoins
201-500 Users – 15 Brumcoins
501-1000 Users – 10 Brumcoins
1001+ Users – 5 Brumcoins

Brumcoins have no value, but the "fear of missing out" perception of individuals may encourage people onto the network, which in turn would boost the value of the network and its Brumcoins. The requirement of users to offer a good or service should provide the basis for a healthy marketplace for exchange. The restrictions on the account of requiring activity within a 3 month period will also ensure that goods and services are provided.

Currency Structure

Cryptocurrency and blockchain systems could theoretically provide the necessary infrastructure for Brumcoin. However, transactions through this system require fees to be paid to support the servers maintaining the blockchain. The Cyclos system is a open source platform that allows the issuance of a digital currency. The currency is not cryptographically ensured, however the organisation supporting Brumcoin can overcome this through good governance and transparency. Brumcoin will be structured either as a cooperative or social enterprise that will ensure transparency of the printing process. Real time statistics of the network will be provided within each user profile, so they are able to see how many individuals are on the network and how many coins are in circulation.

Revenue Model

The aim of the initial stages of Brumcoin is to build a network of indiviiduals offering goods and services. It is therefore in the interests of the network to be free in its initial stages. However, the network will then charge an annual fee of [X] for individuals to keep access to the network. If individuals are active on the network after 6 months, it is likely that they derive some value from it. They would be therefore inclined to pay the annual fee to start part of the system. Accounts will still be required to stay active even if a fee is paid.

Another revenue model within the marketplace will be via the use of sticky listings, promotions or advertisements. If individuals derive enough value from the network they may be more likely to pay a small fee to have their listing appear towards the top of the marketplace.

Finally, there may be options of revenue generation through gamification or a lottery scheme.

As the project is innovative, it is unclear the long term costs or revenue options for the network. Brumcoin will aim to acquire initial start up costs through grants, crowdfunding or a share issue.

Executive Summary

BrumEx is a mutual credit and exchange system based on the issuance of an alternative currency (BRX). BrumEx provides a platform for the trade of goods and services between Birmingham-based organisations using BRX. The use of BrumEx provides the following benefits to organisations;

- A zero interest credit facility
- Zero costs for payments and transfers
- A source of short-term liquidity
- Access to a local market for goods and services
- A local network of organisations
- A marketing and promotion tool

BrumEx provides a clear business case to organisations and has the potential to directly support the Birmingham economy. The BrumEx design is based on successful schemes of WIR in Switzerland and Sardex, Italy which facilitate €100 millions transactions each year and support thriving local economies.

General Description

There have a been a range of high profile academic and governmental studies that have identified the lack of availability of credit for UK organisations. Furthermore, Localise West Midlands and the Birmingham Pound Steering Group intends to support the regionalisation of economic activity. The use of an alternative currency traded within mutual credit and exchange system could enable the group to meet the simultaneous objectives. BrumEx would be modelled on WIR and Sardex, where the organisation issues an alternative currency alongside being a market maker and mediator of local trade. The focus on the business-case to organisations would resolve the issues observed with other local currency schemes where there is a lack of incentive to trade within the currency. The social and environmental benefits would be achieved indirectly through the localisation of trade and the promotion of a set of values.

Operation of BrumEx

The operational of BrumEx has two key features; a centrally managed platform and a network of organisations. When each member registers for the service they are credit checked which enables the allocation of a credit limit. Organisations then receive an account for BRX with a balance of zero. Experiences from Sardex have indicated that a credit line of 1-2% of annual turnover has been effective for organisations. They have also required organisations to sign an agreement stating that they are willing to accept up to 10% of total annual revenue within its alternative currency. The agreement has ensured that there are organisations within the network willing to accept the currency. Experiences from other schemes have shown an unwillingness of organisations to accept the alternative currency even when signed up to the network, due to being unsure about where it can be spent. The signing of an agreement upon joining the network should also be structured to ensure it is legally enforceable in the event a negative balance is sustained and not repaid. A final element of the agreement may be to encourage social responsibility or associated values.

Once an organisation is on the network with an account, they are able to use it for transactions with other organisations on the network. BRX have a value equal to Great British Pound Sterling (GBP) although BRX within the network are not “backed” like in other local currency schemes. The purchase of goods and services in BRX would result in a negative balance for the organisation buying, and associated positive balance for the

organisation selling. The negative balance will need to be replaced through the selling of goods and services within the network. There may be a role for the Aston Reinvestment Trust (ART) to act as a "lender-as-last-resort" to ensure that businesses with high positive BRX balances can exchange for Sterling and organisations with high negative BRX balances can purchase BRX with Sterling. However, the architects and researchers of Sardex are skeptical of this conversion facility as it may undermine the requirement of spending of the currency within the network. The ability to convert a currency into fiat may be one of the reasons of lack of observation of high transaction volumes within other local currencies. Observations within Sardex have suggesting that the publishing balances has resulted in organisations purchasing goods and services from organisations with high negative balances. Although, this act of solidarity should only be a secondary consideration within the design of the network.

The centrally managed platform allows organisations to set up profiles that promotes their goods and services within the network. The platform also facilitates the transactions between the organisations as the accounts would be within this system. Sardex have demonstrated that their value proposition is based on its brokers working within the central platform to actively mediate trade between organisations. Organisations are required to submit information about demand which the mediators use to match with supply. These brokers are what is unique about the WIR and Sardex systems and appear to be a central reason why trade has been thriving on these networks. These systems are also considered to be a cross between central economic planning and market economies, as information about demand can be used to recruit new members to the network.

Value Proposition

The criticism of other local currency schemes have centred on their inability to provide a economically sustainable business model. Sardex has succeeded as it provides a strong business case to users of the network. The following aspects will make up the business case of BrumEx, each one with a brief summary:

- A zero interest credit facility

  Organisations would benefit from access to a zero interest credit facility. This would provide an alternative to other credit facilities available to organisations; credit cards (>15% interest + fees), supply chain financing (8-25% costs), short term loans (>8% interest + fees) or overdraft facilities (>5% + fees).
- Zero costs for payments and transfers

  Organisations would benefit from zero costs for payments and transfers. This would provide an alternative to other payment methods including; BACS (fixed fees), Paypal (3.4% + 20p), Credit/Debit Cards (>2%), cash (management time and risk).
- A source of short-term liquidity

  Organisations would benefit from another source of liquidity to purchase supplies and fulfill potential orders. These may support sales in GBP through the purchase of supplies in BRX.
- Access to a local market for goods and services

  Organisations would benefit from having access to another market for their goods and services. This would provide new sales and revenue opportunities and BrumEx would support the process through market making and mediating.
- A local network of organisations

  Organisations pay for networking events and access to local opportunities. BrumEx would provide a local network of organisations that could be further encouraged with

events and internal tendering opportunities. If large “anchor institutions” can be obtained organisations would benefit from being able to supply large organisations.

- A marketing and promotion tool
  Organisations promote wider social aspects including Fairtrade and locally sourced. Although this would not be a main selling point for the network, it is complementary to organisations. Large organisations may also see it as a potential CSR promotion opportunity. Research on Sardex found that organisations valued SRX transactions as they knew it could be traced and were taxable.

BrumEx Income and Costs

The experience of Sardex is that transaction fees reduce the incentive of the use of the network and raise conflicts of interest. The business-case for BrumEx must be a holistic one that provides a broad range of services and wider advantages that allows the charging of an annual fee. BrumEx as a mediator of trade can also remain impartial when supporting organisations within the network to make transactions. Observations within Sardex have indicated that organisations within the network value the relationship of the brokers within Sardex and have more trust if a flat annual service fee is charged. This fee should be based on the size of the organisation to ensure it is competitive for all organisations on the network. This could maybe be structured around three or four categories, the model uses three. As BrumEx would be maintaining a business network there may be further opportunities for marketing and promotion among participants that may yield further income.

Transactions within BrumEx would be directly applicable for sales and income taxes. Sardex work on the premise of all transactions are invoiced in Euros and then another invoice is issued in SRX. They also require transactions of €1000 (1000 SRX) in Sardex and below to be 100% in the currency, whereas purchases above €1000 (1000 SRX) are allowed to be mixed between SRX and Euros. BrumEx could follow a similar structure that could be automated using the platform.

Governance Arrangements

Sardex was initially conceived as a social project or cooperative to improve the local economy, but its founders felt this was an reputational risk. It was the belief that making it a charitable project would seem to undermine the business case for the network. Some of the academic literature does allude to this division, where systems set up for “ideological” reasons rely on volunteers and goodwill, struggle to maintain themselves economically. Sardex has thrived providing a strong value-proposition to its members which has in turn significantly improved the local economy. BrumEx should learn from this perspective, especially as funding received by previous schemes are not available.

The development of BrumEx should done using a non-profit social enterprise model, but this should not be its main selling point. BrumEx will need to ensure that its value proposition is the central tool promoted to businesses, which may therefore benefit from a “Limited by Guarantee with asset lock” opposed to a “Community Interest Community.” Strong governance arrangements can still be implemented and the “Ltd” gives the impression of business-oriented approach. Sardex are now considering the development of a cooperative as the value of the network has been established and members understand the need for distributed ownership.

Technical Considerations

BrumEx could be launched using the Cyclos platform which would have an initial cost of a registration fee of €1, but would climb based on the amount being transacted. The Birmingham Pound Steering Group already have some of technical capabilities and have seen the usage of Cyclos for the Bristol Pound. The Sardex system is based on the Cyclos system, which facilitates the network and payment system. The open source nature of Cyclos and the broader social mission of the organisation provides the flexibility on costs needed to experiment.

Development of the Network

BrumEx would be only as effective as the network in which it is used. It would be the role of BrumEx to grow and sustain the network. The offer to organisations would be focused on value-propositions of being part of the network. The most effective way of doing this would be through engaging with existing business networks in the Birmingham area with the value proposition. BrumEx may also aim to attract the attention of larger organisations such as the City Council and Universities to provide an incentive for organisations to join the network.

BrumEx would benefit from startup funding or issuance of shares to enable the network to be offered free for the first year. This would reduce the barriers of entry and allow organisations to observe its value proposition. BrumEx employees would also actively manage supply and demand, using information to attract new participants. Sardex believed that the critical mass for their network was 500 organisations. It had the following experience with the development of its network;

	2010	2011	2012	2013	2014 (July)	2014 (projection)
Members	237	439	852	1457	2053	2550
Transaction volume	€304,366	€1,171,703	€3,499,122	€14,935,267	€15,459,605	€35,545,937
N. of transactions	402	1195	4556	24991	28692	75723

Researchers state that there is only a limited amount of large organisations within the network and 80% of the organisations have below 5 employees. A breakdown of transactions volume by sector in 2016 are; 29% services, 27% wholesale, 16% construction and real estate, 10% manufacturing and crafts, 10% retail and 8% hospitality. The diverse sectors demonstrate that a scheme like Sardex may be viable within an economy like Birmingham that is predominantly service, retail and hospitality. The Sardinian economy was around £30 billion, whereas the economy of the West Midlands is around £110 billion.

Individuals

It was the focus of Sardex to develop a network of trade between businesses. The scheme however successfully experimented with allowing organisations to pay employees with SRX. It was a voluntary scheme based on employees being able to exchange their SRX for required goods and services. Researchers credited this scheme for reducing layoffs within the depth of the financial crisis as firms could use SRX alongside Euros to pay staff. There have also been European-funded initiatives to consider the payment of welfare within SRX. Sardex are now considering making Sardex accessible to individuals. BrumEx should follow a similar model; focus on a business network to begin with and consider individuals later.

7.24. Proposal Outline - West Midlands Mutual Credit and Exchange System

Executive Summary

WestMidEx is a mutual credit and exchange system based on the issuance of an alternative currency (WMX). WestMidEx provides a platform for the trade of goods and services between Birmingham-based organisations using WMX. The use of WestMidEx provides the following benefits to organisations;

- A zero interest credit facility
- Zero costs for payments and transfers
- A source of short-term liquidity
- Access to a local market for goods and services
- A local network of organisations
- A marketing and promotion tool

WestMidEx provides a clear business case to organisations and has the potential to directly support the Birmingham economy. The WestMidEx design is based on successful schemes of WIR in Switzerland and Sardex, Italy which facilitate €100 millions transactions each year and support thriving local economies.

General Description

There have a been a range of high profile academic and governmental studies that have identified the lack of availability of credit for UK organisations. Furthermore, Localise West Midlands and the Birmingham Pound Steering Group intends to support the regionalisation of economic activity. The use of an alternative currency traded within mutual credit and exchange system could enable the group to meet the simultaneous objectives. WestMidEx would be modelled on WIR and Sardex, where the organisation issues an alternative currency alongside being a market maker and mediator of local trade. The focus on the business-case to organisations would resolve the issues observed with other local currency schemes where there is a lack of incentive to trade within the currency. The social and environmental benefits would be achieved indirectly through the localisation of trade and the promotion of a set of values.

Operation of WestMidEx

The operational of WestMidEx has two key features; a centrally managed platform and a network of organisations. When each member registers for the service they are credit checked which enables the allocation of a credit limit. Organisations then receive an account for WMX with a balance of zero. Experiences from Sardex have indicated that a credit line of 1-2% of annual turnover has been effective for organisations. They have also required organisations to sign an agreement stating that they are willing to accept up to 10% of total annual revenue within its alternative currency. The agreement has ensured that there are organisations within the network willing to accept the currency. Experiences from other schemes have shown an unwillingness of organisations to accept the alternative currency even when signed up to the network, due to being unsure about where it can be spent. The

signing of an agreement upon joining the network should also be structured to ensure it is legally enforceable in the event a negative balance is sustained and not repaid. A final element of the agreement may be to encourage social responsibility or associated values.

Once an organisation is on the network with an account, they are able to use it for transactions with other organisations on the network. WMX have a value equal to Great British Pound Sterling (GBP) although WMX within the network are not "backed" like in other local currency schemes. The purchase of goods and services in WMX would result in a negative balance for the organisation buying, and associated positive balance for the organisation selling. The negative balance will need to be replaced through the selling of goods and services within the network. There may be a role for the Aston Reinvestment Trust (ART) to act as a "lender-as-last-resort" to ensure that businesses with high positive WMX balances can exchange for Sterling and organisations with high negative WMX balances can purchase WMX with Sterling. However, the architects and researchers of Sardex are skeptical of this conversion facility as it may undermine the requirement of spending of the currency within the network. The ability to convert a currency into fiat may be one of the reasons of lack of observation of high transaction volumes within other local currencies. Observations within Sardex have suggesting that the publishing balances has resulted in organisations purchasing goods and services from organisations with high negative balances. Although, this act of solidarity should only be a secondary consideration within the design of the network.

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I. Executive Summary

Credex is developing an innovative lending model that aims to meet the funding gap experienced by Small and Medium Enterprises (SMEs) in the West Midlands. The company's key offering is a business credit network that will allow members to access interest free finance for the payment of goods and services through its platform. The use of Credex has the following value propositions to its users:

- A zero interest credit facility that acts as a source of short-term liquidity
- Zero costs for payments and transfers
- A brokerage service that will connect businesses to new customers
- Reduced costs and improved resilience through promotion of regional supply chains
- A marketing and promotional tool

Credex is inspired by the successful schemes of WIR (Switzerland) and Sardex (Italy). These models facilitate the equivalent of hundreds of millions of Euros in transactions each year and support thriving regional economies. These initiatives provide a complementary currency that is equal to the Euro and can only be spent with businesses within its network. The model was selected as part of PhD research conducted by one of the co-founders at the University of Birmingham. It applies innovative strands of economic geography and financial technology to develop a complementary offer that will aim to meet the requirements of regional SMEs. Credex is currently reviewing the regulatory environment to consider its position. It is positive about legal implications, as a similar model in Bristol has been authorised by the Financial Conduct Authority (FCA). The model; Prospects, is not currently being pursued due to its contradictions with its sister project; the Bristol Pound.

1. Regional Need

High profile academic and governmental studies conducted at both national and regional levels consistently identify the lack of credit available to SMEs. These studies identify high costs or unavailability of finance at levels of £0-£150,000, traditionally known as the "MacMillan Gap". Businesses often require this level of finance to meet short-term liquidity needs, such as paying suppliers. Although there have been new innovative financial products available to SMEs in recent years; including invoice financing and peer-to-peer finance, these are still expensive and unattainable to some businesses. Credex will aim to provide an additional source of liquidity to SMEs that will meet their day-to-day business needs and support growth.

2. Credex Network

Businesses join the Credex network and receive an account with a balance of zero. Credit is made available by allowing balances to go negative, similar to an overdraft on a bank account. The application process will include a credit check that will dictate the size of the available negative balance. Companies then use credit to acquire goods and services that results in corresponding debits in the accounts of the suppliers. The credit is issued within a complementary currency equal to the value of GBP Sterling, that can only be used by companies on the network. Businesses will only be allowed to accept around 5% of their total revenue in Credex, making it is complementary to other liquidity. It is the role of Credex to ensure that there are diverse goods and services available. A brokerage service will connect businesses with relevant suppliers and new clients. Members pay a flat annual fee based on the size of the company and will not be charged interest. This income will maintain and grow the network, allowing Credex to support further socioeconomic development in the West Midlands. The project aims to attain the "B Corp" accreditation to ensure it structures itself as a social enterprise and is accountable to its stakeholders.

3. Financial Technology

Credex is currently building the platform that will allow companies to access credit and make transactions. Powering the network is an established and market proven electronic payments system. Credex will automate the onboarding of new organisations and potentially adjust lending levels based on transaction volumes. A digital marketplace and directory of members will allow companies to promote their products and services as well as find new regional suppliers. The payments platform is fully secure using the latest in cyber security standards. It will be accessible through an online portal alongside a mobile application for Android and iOS, which will make the payments accessible and easy to complete for its users.

4. Proof of Concept

Credex has been developed through extensive research on the application of similar models in different European and American contexts. The cofounder has had extensive engagement with a variety of projects and conducted interviews with significant individuals within these initiatives. Credex has primarily been modelled on Sardex, which has undergone exponential growth within an economy a sixth of the size of the West Midlands, as shown in *Table 1*.

2010	2011	2012	2013	2014	2015	2016	2017
€177,000	€600,000	€1,750,000	€6,939,762	€14,465,166	€24,328.806	€33,214,655	€40,000,000*

*Table 1. **Annual volume of Euro-equivalent transactions in Sardex using GDP accounting measure. *Sardex estimate***

5. Organisation and Management Team

Credex evolved from a two year project researching a local currency for Birmingham, modelled on the Bristol Pound. Two members of that group; Stuart Bowles and Max Edwards are pursuing Credex as an alternative developed in response to criticisms that a local pound was not economically sustainable. Stuart is a PhD candidate who is researching financial innovation and alternative currency systems. He has experience coordinating European-wide innovation projects and developing social enterprises. Max has 16 years experience working and consulting in the IT industry, including designing and building a lending platform for Barclays. Credex has attracted the interest of key stakeholders who may form an advisory board once the company is closer to market. Potentially interested individuals have experience in regional development, credit unions, access to finance for SMEs and accountancy.

6. Access to Market and Delivery

Credex will provide a complementary service that can be offered alongside traditional financial solutions in the West Midlands. The network would be most effective to its users when there is a meaningful number of regional suppliers using the system. Research on Sardex suggests that three hundred diverse businesses provided a critical mass. It is hoped that Credex would be promoted alongside other financial services aimed at SMEs including; Community Development Finance Institutions, social lenders, startup support programmes and private sector providers. Credex is not a competitor to these services, but will allow them to maximise the potential of their capital and help reduce the risks associated with lending to SMEs. Credex requires engagement with business networks and individual organisations in the West Midlands to understand how to best meet their requirements. It is hoped that the platform can be further developed through a co-creation process to maximise the utility to its potential users. Interested parties should contact updates@credex.network to engage with the project.



parity

Sell your spare capacity to local independent businesses

Grow your Birmingham business with an innovative local currency



Problems and Trends

Business

***Spare capacity**, downtime or slow moving stock*

*Difficulty accessing **day-to-day liquidity***

Society

*Local authority innovation and **inclusive growth***

***Cryptocurrency challenging status quo** of money*

*Need **economic resilience***

Environment

*Desire to **operate ethically and locally***

*Move to **reduce CO2 from supply chains***

Our Solution

Birmingham platform with a local currency (PRX) to **support business growth**.

Sell spare capacity

Purchase with 0% credit

Brokered local connections

Currency will be scaled to West Midlands region.

Proof of Concept

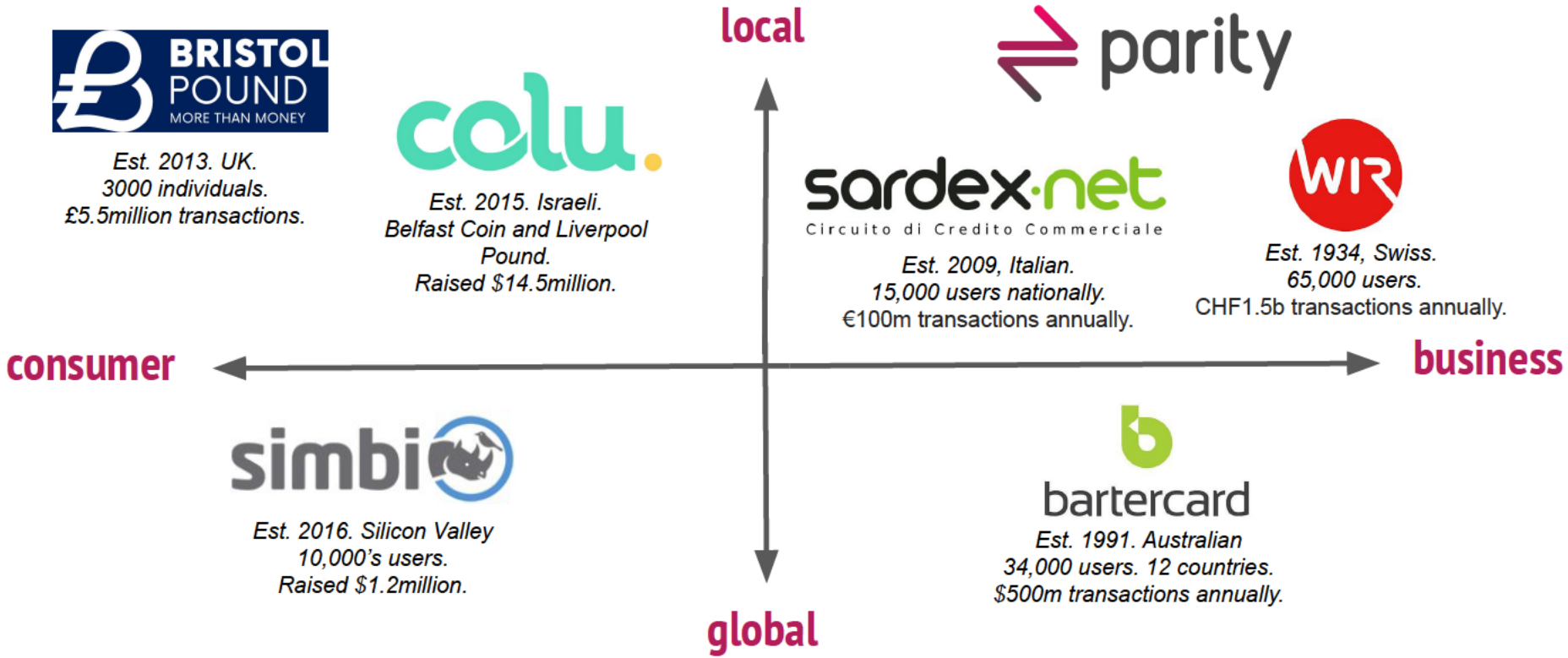
Sardex currency launched in Sardinia, 2009. ***Exponential growth*** *to 15,000 businesses in 13 Italian regions and €15 million revenue.* ***Currency provides:***

- Construction projects and supply chains
- Director and employee wages
- Support for manufacturing supply chains
- Footfall for local high street retailers
- Low carbon and efficiency initiatives

2010	2011	2012	2013	2014	2015	2016	2017
€177,000	€600,000	€1,750,000	€6,939,762	€14,465,166	€24,328.806	€33,214,655	€40,000,000*

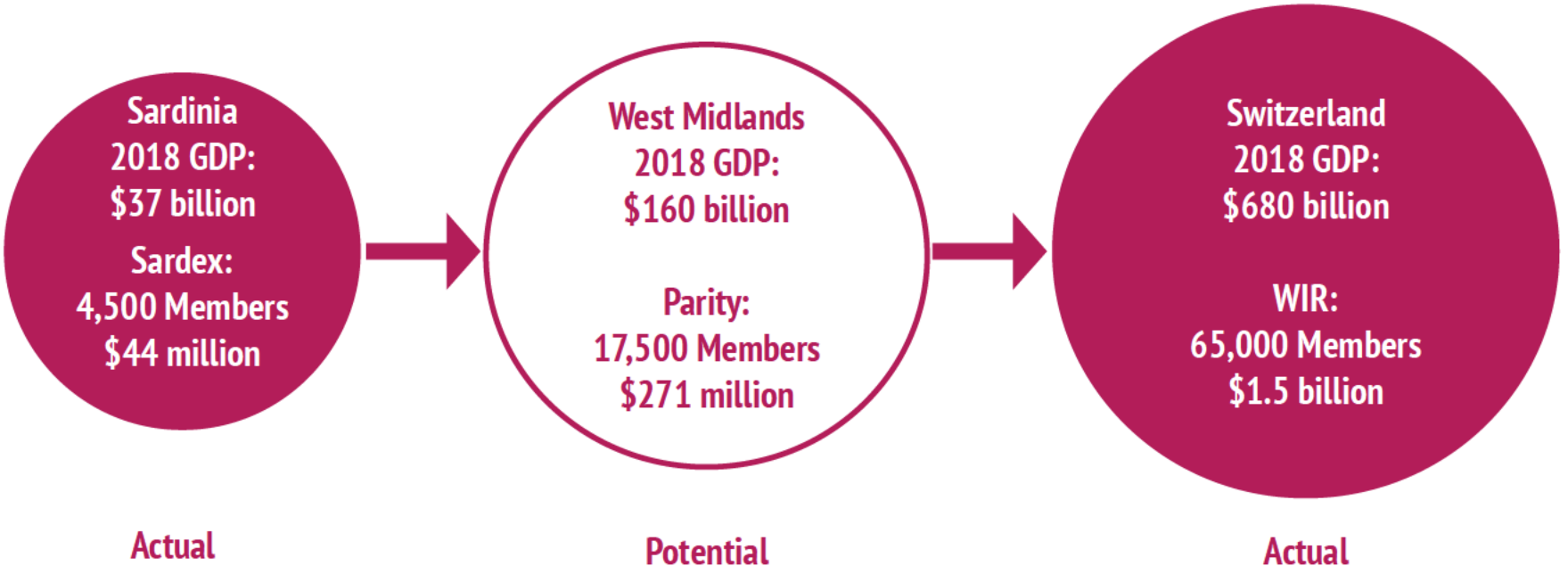
Table 1. *Annual volume of Euro-equivalent transactions in Sardex, Sardinia. *Figure est.*

Market Participants



Potential Market Size

*Parity **replicates a local/business** approach validated by Sardex and WIR.*



The Product

Members receive balance of 0 PRX and 0% credit line to make purchases from one another. ***New liquidity and spending power.***

1 PRX

=

1 GBP

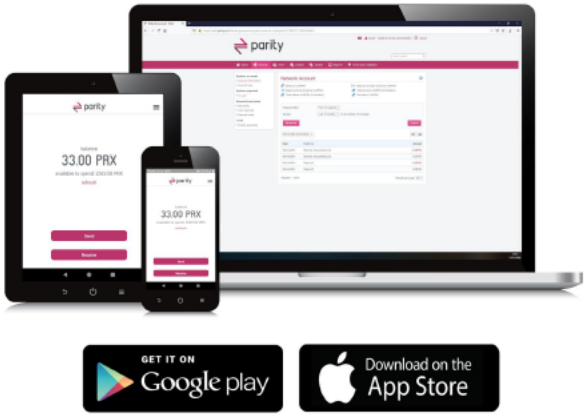
Not convertible with GBP

Not cryptocurrency or blockchain

The Product

*Mobile app and web platform allows **instant transactions** between members.*







Customer Profiles



Breslins Birmingham Ltd

Accountancy
Fixed costs; staff time
Spare capacity; unutilised time

Uses Parity
Sells; accountancy
Buys; event space, beers



Repc Ltd

Social enterprise; IT recycler.
Fixed cost; warehouse rent
Spare capacity; slow moving stock

Uses Parity
Sells; IT equipment
Buys; marketing, accountancy



Iron House Ventures Ltd

Event / Conference Space
Fixed cost; rent, staff time
Spare capacity; unutilised space

Uses Parity
Sells; event venue
Buys; recycling, beers

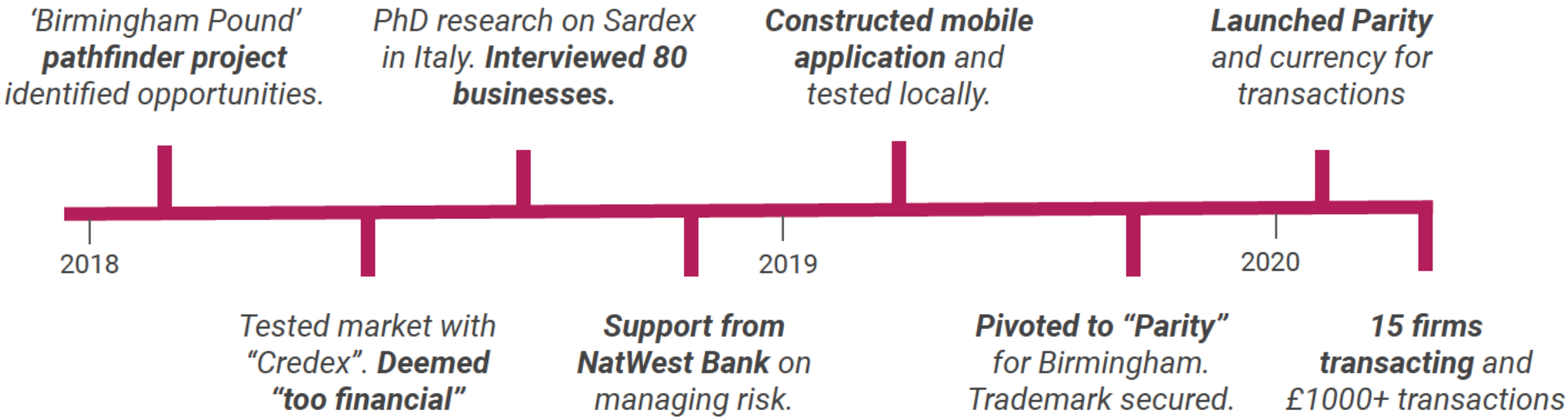


Rock and Roll Brewhouse Ltd

Microbrewery
Fixed cost; time, brewery equipment
Spare capacity; unutilised production

Uses Parity
Sells; beers; wholesale, retail
Buys; IT equipment, marketing

Milestones


'Birmingham Pound' **pathfinder project** identified opportunities.
PhD research on Sardex in Italy. **Interviewed 80 businesses.**
Constructed mobile application and tested locally.
Launched Parity and currency for transactions
2018
2019
2020
Tested market with "Credex". **Deemed "too financial"**
Support from NatWest Bank on managing risk.
Pivoted to "Parity" for Birmingham. Trademark secured.
15 firms transacting and £1000+ transactions

Business Model

Initial Revenue

Monthly subscription fee from £35 per month

Potential Revenue

Comparative scale to Sardex / WIR = ***£10.5 million p/a in West Midlands alone.***

Future Growth

- *Multiple regions across UK*
- *Startup, sole trader and freelancer accounts*
- *Muslim businesses as credit Shariah-compliant*
- *Data, marketing and advertising revenue*
- *Developing world markets*

Team

Stuart Bowles

Stuart Bowles is a PhD candidate at the University of Birmingham. He leads sales and operations and helps shape our strategy.

Max Edwards

Max has 17 years experience in the IT industry, he's built a financial platform for Barclaycard. He's the technical expert in the team.

Matteo Vanzini

Matteo has researched local currencies around the world. He's worked for Italian networks and has operational expertise.



Competitive Advantage

***Hard to replicate team**: PhD on local currencies, operational experience of Sardex and strong technical skills.*

Regional networks

In-house technology

Theoretical know-how

***UK competitors;** either global/business or local/consumer.*
<u>No projects</u> replicating local/business validated by Sardex and WIR.

Barriers to Growth

Communicating innovation

Undeveloped brand

Ineffective marketing

Lack of awareness in market

Limited credibility

Undeveloped processes

Restricted capacity



GBSLEP Innovation Challenge

Business, Professional & Financial Services Challenge would provide Parity the following outcomes:

Core Messaging and Brand Development Develop pitch and offer | Improve prospect understanding of model	£1250
Communications and Marketing Plan Measurable programme for 2020 | Increase visibility across multiple channels	£1250
Media and Third Party Ambassadors Strategy Local media strategy | Engage with local influencers | Referral programme	£2500
Support and Mentoring Improve operations | Develop inbound sales | Prepare business for investment	4 Days

Project completed within eight weeks of funding confirmation, through support of external agencies.

Result of GBSLEP Support

Improved understanding and brand = Greater interest and uptake

Communication plan for 2020 = Increased engagements and leads

Local media articles = Raised awareness in market

Brand ambassadors = Higher local credibility and referrals

Mentoring and support = More efficient processes

Preparation for investment = Eventual expanded capacity

*Support will allow Parity to scale model **to first 100 clients** in 2020, considered **"critical mass" by Sardex**.*

parity

Thank you

For any questions contact:

[redacted] | https://parity.uk | [redacted]

[redacted] Vyse Street, Jewellery Quarter, Birmingham, B18 6HA

