HOUSES OF PARLIAMENT
PARLIAMENTARY OFFICE OF SCIENCE & TECHNOLOGY

POSTNOTE

Number 475 August 2014

Alternative Currencies

Alternative currencies are types of money or exchange that can be used instead of and alongside national currency. A number of alternative currencies are used in the UK today. This POSTnote outlines the different types and aims of these currencies. It also sets out how alternative currencies are being used and highlights regulatory and policy challenges regarding consumer protection, financial crime and taxation and benefits.

Overview

- Alternative currencies include global currencies like Bitcoin and local community currencies such as the Bristol Pound.
- They are meant to complement, not replace, national currency.
- Local community alternative currencies are designed to regenerate local areas, address social exclusion and value unpaid work and activities.
- Global alternative currencies are designed to bypass intermediaries like banks.
- Alternative currencies are largely unregulated in the UK.
- Consumers may not be protected against loss of global alternative currency.
- The use of some local community currencies may affect eligibility for benefits.

Background

There is no commonly accepted view on what counts as money or currency,[1] but currencies typically fulfil three functions: providing a unit for measuring the value of an item; acting as a store of value for future use; and being used as a 'medium of exchange,' which allows goods and services to be purchased using commonly accepted units and tokens (e.g. a five pound note). In the UK, people are free to accept any currency that they wish and alternative currencies can be used alongside pounds sterling. Alternative currencies have developed historically in response to concerns relating to financial crises[2,3,4] and ecological, economic and social sustainability.

Types of alternative currency

Alternative currencies are objects of monetary value, which can range from loyalty schemes like Amazon Coins or Starbucks Stars to advanced technologies like Bitcoin. Most alternative currencies fall into two types: local community currencies or global currencies. A third type, corporate currencies, is explained in Box 1. This POSTnote does not consider those alternative currencies that do not form a wider financial ecosystem, such as vouchers or loyalty schemes.

Local community currencies

There are three main types of local community currency in use in the UK, each with distinct aims. These are Transition Town Pounds, Time Banks and Local Exchange Trading Systems (LETS).

Transition Town Pounds

The Transition Town movement was launched in Totnes in 2006 as part of an effort to re-organise local economies in response to a changing climate and perceived over-dependence on oil. The Totnes Pound was the first Transition Town Pound in 2007. The Lewes (2008), Stroud (2008), Brixton (2009) and Bristol (2012) Pounds followed. Transition Town Pounds are paper notes with a legal status equivalent to a retail voucher. In contrast to vouchers, they are subject to tax in the same way as cash and are used to keep money flowing within a particular town or city. Each Transition Town Pound is backed one-to-one by sterling by the managing Community Interest Company or membership organisation. Their use is geographically restricted (e.g. the Brixton Pound can only be used in Brixton). The largest of the five Transition Town Pounds, Brixton and Bristol, involve 300 and 660 businesses respectively. Around 2,000 residents in Brixton have accounts that allow them to pay with Brixton Pounds via text.[5] There are 1,600 Bristol Pound account holders at the Bristol Credit Union. More than

£600,000 Bristol Pounds have been issued since 2012, although some may have been removed from circulation and held as souvenirs.[6] Both Bristol and Lambeth councils accept business rates in local pounds and in Bristol, the council's elected mayor George Ferguson draws his salary in Bristol Pounds.[7]

Time Banks
The currency of a Time Bank is time. A member can volunteer to work for an hour for another person, and in exchange be credited with one hour. This can be redeemed for a one hour contribution from any other member of the Time Bank (the exchange need not be directly reciprocal). This alternative time-based currency assumes the efforts of all members to be valued equally. Time Banks are usually run by a broker supported by a social care organisation. The first Time Bank in London, Rushey Green, was launched in partnership with a GP's surgery.

Local Exchange Trading Systems (LETS)
Whereas Time Banks are usually run by a broker and associated with social care provision, LETS are membership organisations in which members exchange an internal currency with each other for skills, goods and services. LETS currency is not denominated in time but in LETS units. These units do not usually take the form of a token or note, but are recorded in a computerised ledger. Any member can issue the currency. LETS currency can be issued as a 'credit' in another member's account in exchange for goods or services received. Currency can also be issued as a 'commitment', or a negative account balance that shows a member's willingness to provide goods or services to other members in the future. A person can leave the LETS without providing goods or services to which they have committed. However, it is assumed that people will not do this within LETS because they are co-operative schemes. They may also have difficulty returning to the LETS. The Bright Exchange LETS scheme in Brighton has been running for 12 years.[8]

Global currencies
Global currencies allow units of value to be transferred electronically between businesses or individuals and across national borders. The two main types of global currencies are Cryptocurrencies and Private Digital Currencies.

Box 1. Corporate Currencies
Corporate currencies are based on the exchange of products and services from business to business (B2B), rather than business to consumer. B2B currencies cannot be exchanged against legal tender and are not subject to financial conduct regulations. Examples of B2B schemes in the UK include Recipco and Gets Global.[9,10] B2Bs are used all around the world in networks of businesses, typically small and medium sized enterprises (SMEs), giving their users cheaper lines of credit and low transaction and credit costs compared to conventional currency. Some well-known international examples are in Switzerland and Latin America. B2Bs are particularly appealing to industries with low marginal costs,[11] and can support profitability.[12]

Cryptocurrencies
Cryptocurrencies are payment systems with their own internal currency. They are designed to allow payments to be processed without any financial intermediaries like banks, and to generate units of currency without any single issuing authority like a central bank. The original and most widely used cryptocurrency is Bitcoin (Box 2). The designers of the Bitcoin system set a cap of the number of new coins that can be generated. New coins will be issued gradually until 2140 up to a limit of 21m. This limit is meant to prevent bitcoins from losing value through inflation. The value of cryptocurrencies like Bitcoin fluctuates considerably, making them unlikely to replace national currencies outright.

Private Digital Currencies
Private digital currencies are typically issued by a company or a social network to their customers or members. Well known examples include Linden Dollars, which are issued within the online role-playing game Second Life. Players of the game can earn Linden Dollars online and these can then be exchanged into national currencies like sterling. Debates are ongoing in the US and the EU about how Linden Dollars should be taxed.[13,14]

Not all private currencies can be converted into national currencies. The now-defunct Facebook Credits (2009-2012) were not convertible into national currencies nor transferrable between users. This is because the Credits were designed to encourage users to spend more time consuming gaming or other services within Facebook. To compete with national currencies, private digital currencies must be transferrable among users and exchangeable for other currencies.[15] Private digital currencies designed to increase consumption, such as Facebook Credits, differ from the competitive private currencies created by financial institutions that have been proposed as alternatives to centrally-issued national currencies like sterling.[16]

Aims of alternative currencies
Alternative currencies are designed to bypass banks and put control in the hands of members or users. Alternative currencies have both social aims and financial aims.

Box 2. Bitcoin
Bitcoin (with a capital 'B') is a payment system that allows units of currency ('bitcoins' with a small 'b') to be transferred between any two individuals who have a Bitcoin address. In the sterling economy, financial intermediaries like banks ensure that the same units of currency (e.g. a ten pound note) are not 'double spent' or fraudulently used to pay more than one recipient. Cryptocurrencies are designed to remove these intermediaries and as an alternative, they use a ledger called the 'blockchain,' which records the entire transaction history of the Bitcoin network. A copy of this ledger is kept on the computer of every person running the Bitcoin software. Each Bitcoin address is secured by a private key which is used to sign transactions and provide proof that they came from the owner. It is also prevents anyone from altering the transaction once it has been issued.[17] Before a new transaction can be confirmed, it is checked by all computers on the Bitcoin network to make sure that the bitcoins have not been used before or sent to more than one person at the same time. The first computer to confirm this is rewarded with a new batch of bitcoins.

The social aims of alternative currencies

Local community currencies have three social aims: to regenerate local areas, to achieve more socially inclusive communities, and to value unpaid work and activity.

Local regeneration and sustainability

The contexts and forms of local community currencies vary, but in general, users share a belief in the power of people to shape their local economy, society and environment.[18,19,20] For example, only locally-owned businesses that commit to certain ethical standards in their supply chains can participate in Transition Town Currencies. When consumers exchange sterling for local currency, they commit to spending in independent local businesses and prevent money from "leaking out" of the local economy. Research shows that users of Transition Town Currencies are developing "new practices of payment"[21,22] involving changes in consumer culture,[23] relationships between customers and retailers and more consideration of consumption decisions. If firms and consumers using the local notes can support local supply chains (i.e., from farm to fork), it is hoped that this can help reduce a Transition Town's carbon footprint and sustain the needs of the community with products and services from the local area.

Social inclusion

Local community currencies such as LETS and Time Banks may address social exclusion by offering the opportunity for unemployed people, or those on very low incomes, to supplement their income.[24,25] LETS are also seen to support unemployed people by increasing job-readiness.[26] Because local currencies do not require people to have debit or credit cards or bank accounts, they might also address issues of financial exclusion. However, data suggest that LETS have attracted only a small minority of members that are economically deprived.[27] Research suggests that Time Bank members in the UK include higher than average numbers of women,[28] people from lower-income households and unemployed people.[29] Transition Town Pound schemes have been criticised for being used primarily by more affluent consumers.[30,31] However, schemes such as the Bristol Pound are being used to launch other community exchange projects such as the Real Economy scheme which aims to provide fresh, healthy local food to areas with high unemployment and limited choice of food shops.[32]

Valuing unpaid work and activities

Both LETS and Time Banks currencies value work and activities that are typically neglected by the sterling economy.[24] Time Banks can encourage retired, out-of-work or isolated individuals to exchange previously undervalued contributions. This can include caring services such as visiting and befriending, or help with daily tasks like shopping or filling in forms.[28,33,34] 14,000 volunteer hours were exchanged at Rushey Green Time Bank between June 2012 and January 2014. Studies suggest that Time Banks can increase the efficiency and cost-effectiveness of healthcare service delivery.[26] Critics argue that Time Banks are being used to plug gaps in state provision of welfare services at a time of austerity.[28]

Box 3. Decentralised Payment Systems

Decentralised payment systems allow banks to transfer currency cheaply and instantly, without any delay between the agreement and the actual transfer of funds. One example is Bitcoin. Customers can pay in national currency to a bitcoin exchange. The exchange then uses its network to transfer bitcoins to another branch which immediately cashes the bitcoins out into another national currency. This avoids the fees normally charged by payment services or banks, and means that there is no prolonged exposure to changes in bitcoin value. Because processing fees are minimal, bitcoin can also be used for 'micropayments' that are too small to be processed by credit card or bank payment services. This has potential applications in machine-to-machine communication, where micropayments might be made for access to data from 'smart' devices (see POSTnote 423). It is unclear whether regulation of these exchanges or remittance services would add compliance costs that would make them impractical.

The financial aims of alternative currencies

Alternative currencies provide users with a way to buy, sell or exchange goods without using national currency. Advocates argue that this empowers users by transferring power from legal and financial bodies to individuals. While Bitcoin operates in a decentralised way, it is governed by a small number of highly skilled programmers.[35,36] Global currencies like Bitcoin can also be used as a low-cost payment or money transfer system (Box 3). The payment system underlying Bitcoin is considered to be of more likely future importance than the currency itself.[37]

Trends in the use of alternative currencies

Usage data for both local community currencies and global currencies is limited. Many local community currencies are run by small-scale non-profit organisations with limited data collection capacities. Collecting usage data is complicated further by difficulties in obtaining circulation figures for paper notes. Recent adoption of digital 'text-to-pay' systems in both Brixton and Bristol may facilitate richer data collection in the future. Funding from the EU and BIS has been released to collect data on Transition Town Pounds and support their expansion.

- It is estimated that there are 250 LETS active in the UK, with average membership of around 70.[38]
- There are 250 Time Banks active in the UK today with an average membership of 60-100.[39]
- Five Transition Towns in the UK have launched their own Pounds (see page 1).
- Over 320 business in the UK and over 4,500 worldwide accept payment in bitcoins.
- Data suggest that the total value of all bitcoins created by June 2014 was £505 bn. Monthly transactions average 60,000, compared to the daily Visa transaction rate of around 200 million.[40]

Regulation and Policy Challenges

Alternative currencies present challenges for regulation and policy in the areas of consumer protection, financial crime and taxation and benefits. A review of two EU Directives may have implications for these areas (Box 4).

Box 4. European Regulation
A review of the Payment Services Directive (2007) was initiated on 24 July 2013 and a review of the E-Money Directive (2009) is due to commence in 2015. The Financial Conduct Authority and HM Treasury are feeding in to this process, and into reviews initiated by the European Banking Authority and the Financial Action Task Force. These instruments are designed with consumer protection in mind, but they also shape money laundering and financial crime regulation.

Consumer Protection

Local community currencies such as LETS and Time Banks do not pose any risks to consumer protection. The Bank of England has advised that users of Transition Town Pounds do not have the same credit protection as holders of sterling notes,[28] since transition currency notes have the same legal standing as retail vouchers. However, because the organisations operating Transition Town Pounds back the currency by sterling, there should be little risk to users, and this should not affect the Bank of England's ability to manage the economy. In January 2014, the European Banking Authority warned that consumers are not protected if they lose holdings of cryptocurrencies should exchanges or online wallets be hacked or go out of business.[41] Cryptocurrency advocates point to the emergence of secure online wallets and offline 'cold storage' systems as safe alternatives.[42] Transfers of currencies like bitcoin are irreversible. This can protect retailers from chargeback fraud but could affect consumers' abilities to secure refunds for faulty products.

Financial Crime

Alternative currencies are not captured by existing regulatory instruments in the area of financial crime.[43,44] The Financial Conduct Authority has not issued regulatory guidance however, HM Treasury has recently announced that it will investigate the benefits and risks (Box 5) of global currencies like Bitcoin and whether they should be regulated.[45] The Payment Systems Regulator, which covers UK payments, will be launched in April 2015. This is unlikely to have regulatory oversight over cryptocurrencies because of their international dimension. Low levels of Transition Town Pounds use means there is minimal risk of money laundering.

Box 5. Anonymity and Cryptocurrencies
Cryptocurrencies are often described as anonymous, leading to concerns about criminal use. Recent research has challenged this view and suggested they are 'pseudonymous' at best. Tools have been developed to identify Bitcoin addresses likely to belong to the same user, or associated with a given IP address[46,47] (see POSTnote 436). The Bitcoin Foundation has argued that because of these tools and the fact that the underpinning technology makes the entire transaction history of the Bitcoin network visible, cryptocurrencies are best understood as facilitating surveillance rather than anonymity. There are nonetheless efforts underway to develop truly anonymous cryptocurrency protocols like Zerocoin, Anoncoin and Darkcoin,[48] but use of these alternatives is not widespread compared to bitcoin.

Taxation and Benefits

The local community currency scheme LETS is taken into account as earnings and can affect eligibility for Jobseekers' Allowance. This may affect its ability to contribute to the livelihoods of the poorest households. Time Banks are not classified as voluntary work by the Department of Work and Pensions and therefore may affect entitlement to means tested benefits (2000, re-stated 2014).[49] It is unclear whether Transition Town Pounds affect benefit eligibility.

HM Revenue and Customs (HMRC) published interim guidance in March 2014[50] stating that VAT is payable on goods exchanged for bitcoins, but not on bitcoin creation or the exchange of bitcoins for other currencies. Income and Capital Gains Tax rules for Bitcoin are similar to those for foreign currency.

Future directions

The future impact of alternative currencies is unclear. Evidence suggests that the use of LETS local community currency schemes has declined in the UK and there is limited evidence showing some Time Banks in the UK having an effect on social care.[51] Further research is required to determine the economic or social impact of Transition Town Pounds. The extent to which cryptocurrencies and other global currencies prove to be useful payment systems also remains to be seen and depends on regulatory developments. The technology underpinning cryptocurrencies may have applications beyond currencies and payment systems. Potential proposals include registries for land and other assets,[52,53,54] and automated election monitoring systems.[55]

Researchers have noted significant interest in currency innovation in other countries and regions. A parliamentary review of alternative currencies has been conducted in Iceland,[56] a legal review in France[57] and alternative business-to-business currencies have provided significant support to small and medium enterprises in Latin America (e.g. SUCRE)[58] and Switzerland (WIR) (see Box 1).[59,60]

Endnotes

1 Nigel Dodd. 2014. *The Social Life of Money*. Forthcoming Manuscript, London School of Economics, pp. 10-14.
2 Josh Ryan-Collins, Tony Greenham, Richard Wernre and Andrew Jackson. 2014. *Where Does Money Come From? A Guide to the UK Monetary and Banking System*. London: New Economics Foundation
3 Michael McCleay, Amar Radia and Ryland Thomas. 2014. Money Creation in the Modern Economy. *Quarterly Bulletin*, 2014 Q1: 1-14. http://goo.gl/DAoJdn
4 YouGov-Cambridge. 2013. Public Trust in Banking. http://goo.gl/tXUjHC
5 Tom Shakhli, Director, Brixton Pound. Interviewed 05/06/2014.
6 http://bristolpound.org/media
7 Tim Smedley. 2014. Could community currencies produce a more sustainable financial system? Guardian. 15 May http://goo.gl/7CL3Y4
8 http://www.brightexchange.org.uk/brights.htm
9 http://www.recipco.com/
10 http://www.getsglobal.com/
11 Z/Yen Group Limited. 2011. Capacity trade and credit: Emerging architectures for commerce and money. London, City of London Economic Development. http://goo.gl/C0ppJq
12 Correspondence with Jem Bendell. 07/07/2014.
13 European Central Bank. 2012. Virtual Currency Schemes. http://goo.gl/EZSHHU

POST is an office of both Houses of Parliament, charged with providing independent and balanced analysis of policy issues that have a basis in science and technology. POST is grateful to Paul Gilbert for researching this briefing, to the ESRC for funding his parliamentary fellowship, and to all contributors and reviewers. For further information on this subject, please contact the co-author, Dr Caroline Kenny.

[14] US Government Accountability Office. 2013. Virtual Economies and Currencies. Report to the Committeeon Finance, US Senate. http://goo.gl/VB5zmJ
[15] Ben Fung and Hanna Halaburda. 2014. Understanding Platform-Based Digital Currencies. *Bank of Canada Review*, Spring, 12-20. http://goo.gl/m52WSu
[16] F. A. Hayek. 1990 [1974]. Denationalisation of Money – The Argument Refined. London: Institute of Economic Affairs.
[17] Satoshi Nakamoto. 2008. A peer-to-peer electronic cash system. https://bitcoin.org/bitcoin.pdf
[18] Gill Seyfang. 2002. Tackling Social Exclusion With Community Currencies: Learning from LETS to Time Banks. *International Journal of Community Currency Research*. 6(3): http://goo.gl/OVEz3Q
[19] R Douthwaite. 1996. *Short Circuit: Strengthening local economies for security in an unstable world,* Green Books, Totnes, UK
[20] New Economics Foundation. 2008. *Plugging the Leaks.* http://goo.gl/gDeYaI
[21] Mark Perry and Jennifer Ferreira, School of Information Systems, Computing and Mathematics, University of Brunel, Interviewed 14/05/2014
[22] Jennifer Ferreira and Mark Perry. 2013. Bristol Pound: Research Highlights. http://bristolpound.org/library/ResearchFeedback.pdf
[23] Tom Shakhli, Director, Brixton Pound. Interviewed 28/05/2014.
[24] J. K. Gibson-Graham. 2013. A Diverse Economy: Rethinking Economy and Economic Representation. http://goo.gl/w5B8SB
[25] Kathleen Powerr & Margaret Dalton. 2003. Co-Production, Service Exchange Networks, and Social Capital. The Social Policy Journal. 2(2-3) pp. 89-106
[26] Gill Seyfang. 2001. Community Currencies: Small Change For A Green Economy", *Environment and Planning A.* 33(6) pp. 975-996
[27] C Williams. 2000. Are Local Currencies An Effective Tool for Tackling Social Exclusion? *Town and Country Planning*, 69(11) pp.323-325
[28] David Boyle. 2014. The Potential of Time Banks to Support Social Inclusion and Employability. *EC JRC Scientific and Policy Reports, Report ER 26346 EN*
[29] Peter North, Department of Geography, University of Liverpool, Interviewed 29/05/2014.
[30] E Collom. 2005, "Community currency in the United States: the social environments in which it emerges and survives" *Environment and Planning A* 37(9) 1565 – 1587
[31] Joanna Simmons. 2008. Lewes Pound – sparkler or damp squib? *Guardian* 1 November http://goo.gl/IvuEnK
[32] http://realeconomy.co.uk/
[33] Gill Seyfang. 2000. The Euro, The Pound And The Shell In Our Pockets: Rationales For Complementary Currencies In A Global Economy. *New Political Economy,* 5(2), pp 227-246
[34] Gill Seyfang. 2001. Community Currencies: Small Change For A Green Economy", *Environment and Planning A.* 33(6) pp. 975-996
[35] Brett Scott. 2014. Visions of a Techno-Leviathan: The Politics of the Bitcoin Blockchain. *E-International Relations*. http://goo.gl/kBEl6G
[36] Bill Maurer, Taylor Nelms and Lana Swartz. 'When Perhaps the Real Problem is Money Itself.' The Practical Materiality of Bitcoin. *Social Semiotics*, 23(2): 261-277.
[37] Derek De Vries, CFA, John-Paul Crutchley, Jack Hwang and Ivan Jevremovic. 2014. Bitcoins and Banks: Problematic Currency, Interesting Payment System. *UBS: Global Research*, 28 March 2014.
[38] Gill Seyfang and Noel Longhurst. 2013. Growing Green Money? Mapping Community Currencies for Sustainable Development. *Ecological Economics*, 86: 65-77. Available at http://core.kmi.open.ac.uk/download/pdf/9838084.pdf
[39] David Boyle. 2014. The Potential of Time Banks to Support Social Inclusion and Employability. *EC JRC Scientific and Policy Reports, Report ER 26346 EN*
[40] http://blockchain.info; http://goo.gl/mIbxlh
[41] European Banking Authority. 2013. EBA warns consumers on virtual currencies. http://goo.gl/MbwbvH dated 13/12/2013.
[42] Hakim Mamoni, Seedcoin & Bitcoin Institute, Interviewed 05/05/2014
[43] Robert Stokes. 2012. Virtual money laundering: the case of Bitcoin and the Linden dollar. *Information and Communications Technology Law*, 21(3): 221-236
[44] Niels Vandezande. 2014. Between Bitcoins and Mobile Payments: Will the European Commission's New Proposal Provide More Legal Certainty? *International Journal of Law and Information Technology*, 2014, 1-16
[45] http://www.bbc.co.uk/news/uk-28670414
[46] Michele Spagnuolo, Federico Maggi and Stefano Zanero. 2014. Bitlodine: Extracting Intelligence from the Bitcoin Network. *Financial Cryptography and Data Security 2014, Bridgetown, Barbados.* http://goo.gl/T6bcjC
[47] Philip Koshy, Diana Koshy and Patrick McDaniel. 2014. An Analysis of Anonymity in Bitcoin Using P2P Network Traffic. *Financial Cryptography and Data Security 2014, Bridgetown, Barbados* http://goo.gl/ca5Pl3
[48] Christina Garman, Matthew Green, Ian Miers and Aviel D. Rubin. 2014. Rational zero: Economic security for Zerocoin with Everlasting Anonymity. *Paper presented at Financial Cryptography and Data Security 2014, Bridgetown, Barbados*. http://goo.gl/L9pL6P
[49] http://goo.gl/5yKKQV
[50] HMRC. 2014. Revenue & Customs Brief 09/14*: Tax treatment of activities involving Bitcoin and other similar cryptocurrencies*. Issued 3 March 2014. http://www.hmrc.gov.uk/briefs/vat/brief0914.htm
[51] David Boyle. 2013. The Barriers to Choice Review: How are people using choice in public services? London, HM Government. http://goo.gl/bdF5ul
[52] Shawn Wilkinson and Jim Lowry. 2014. Storj: Decentralized Autonomous File Storage: BitCumulus and Storjcoin. http://storj.io/
[53] Nick Szabo. 1997. The Idea of Smart Contracts. http://goo.gl/EYTM2L
[54] Ethereum, https://ethereum.org
[55] http://restartdemocracy.org/
[56] http://goo.gl/QbCHV2
[57] http://goo.gl/FaaIAb
[58] http://goo.gl/ocluX2
[59] Wojtek Kalimowski. 2011. Currency pluralism and economic stability: The Swiss Lesson. Institut Veblen. http://goo.gl/WtWPTV
[60] James Stodder. 2000. Reciprocal exchange networks: Implications for macroeconomic stability. Rensselaer at Hartford. http://goo.gl/q3RzcU