ABSTRACT

This article investigates which digital currencies are best fit for purpose? Ten reasons why digital Australian dollars are not fit for purpose as a medium of exchange and unit of account/value are identified. To provide a reference unit of value to compare Bitcoin and other crypto-currencies, a hypothetical inflation resisting currency described as $Z is introduced. Twenty benefits are identified for the Australian Parliament and its regulators to accept $Z like currency. It is recommended that $Z like currencies be promoted or accepted.

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Inquiry into digital currency: Which ones are fit for purpose?

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Dear Senators

To provide a framework of analysis for your inquiry I invite your committee to consider if official forms of digital money that represent around 97% of all money in Australia are fit for purpose? In this way the committee can establish criteria for evaluating existing[1] digital currencies and a proposal for adopting a long term stable, democratic form of digital money with a inflation resisting sustainable unit of account/value referred to in this submission as $Z. This submission identifies ten reasons why Australian money is not fit for purpose and why $Z is fit for purpose offering twenty advantages.

The purpose of money as a medium of exchange

Even though the Internet has greatly reduced the cost of bartering without money, Bank of England (BoE) economists concluded that the use of money still provides costs savings (Capie, Tsomocos, & Wood 2003). The matching of savers and investors through Internet crowd funding also requires money.

However, central banks may not be needed as anticipated by former BoE governor Mervyn King (1999: 47). A view confirmed by the BoE last month by Ali, Barrdear, Claws, & Southgate (2014) when explaining the Bitcoin technology[2]. Central banking is but a specialized form of central planning. It requires one policy to fit everyone even if big differences exist.

Textbooks typically describe money as performing three functions being:

a. Medium of exchange - to facilitate trade and investment without the cost and inconvenience of bartering;
b. Unit of account/value – to allow resources to be priced for their efficacious allocation by market forces;
c. Store of value - **however, it is not logical for interest earning money to be both a medium of exchange and a store of value.**

A currency that can increase its value by earning interest will create a bias for investment in money that is now just a social construct rather than in assets that can maintain and increase prosperity. Australian notes and coins, like Bitcoins, do not earn interest. But this is insufficient to create a level investment playing field between money and life sustaining commodities or prosperity increasing investments that deteriorate with use and wear out.

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[1] This approach was used by Münchau (2014) who stated: "Bitcoin may just end up playing the role of the useful idiot that is ultimately usurped by a worthy successor – call it bitnote". This submission advocates $Z.
[2] Refer to the BoE video at https://www.youtube.com/watch?v=CxDKE_gQX_M.

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To overcome this problem Gesell (1916) proposed that money should also depreciate like the goods it was supposed to serve. For practical reasons supporters of Gesell issued currency notes that required stamps to be attached to them at specified times. This acted like a negative interest rate to obtain the support from Fisher (1933), Keynes (1936: 234), Suhr (1989) and Buiter (2009) et al. "Stamp Scrip" currency was privately introduced in many different forms in Europe and the US during the Great Depression (Fisher 1933). So successful were the private initiatives requiring a 2% usage fee per week that this provided the basis for the Bankhead-Pettengill Bill introduced into the US Congress on February 17, 1933 to get the economy out of the depression. The bill would have provided the US government with one trillion dollars of stamp scrip to revitalize the economy **without debt or taxes** to finance welfare and infrastructure. However, after President Roosevelt was inaugurated two weeks later he announced the New Deal[3]. This replaced the Bill that would have replaced the Federal Reserve with the US Post Office who would have sold the stamps. The New Deal expanded the powers of the Federal Reserve. This **increased bank debt, government debt and taxes**.

However, without a Great Depression, privately issued stamp scrip has again emerged since 2003 in Germany (Gelleri 2009, Migchels, 2012). Mobile phone technology could be adapted to eliminate stamps to introduce digital negative interest rate money (Turnbull 2010a). Since 2007 mobile phones in Africa have been used to make payments without banks (*The Economist* 2013). Bitcoin technology now allows central banking and record keeping of transactions to be replaced with decentralized record keeping of payments.

The compelling political incentives for governments to introduce negative interest rate digital money arises from its ability to:

1. Reduce wealth inequality[4];
2. Reduce or eliminate the need for carbon taxing or trading (Turnbull 2010b);
3. Reduce the size and cost of the financial system and replace "Quantitative Easing";
4. Eliminate the need for either banks or the government to increase debt, or taxation to reduce debt. Like Bitcoin, negative interest rate money does not need to be created by creating debt. It is created out of nothing. It may be referred to as "helicopter" money.
5. ***Be given aw*ay** to finance welfare, infrastructure and small businesses, as the usage fee raises sufficient revenues to cancel the money created. It is self-liquidating money.

The last point may seem impossible. But history proves it has been practical, even with only private initiatives. The value of the usage fee for some of privately issued notes used in the 1930's was 2% per week or 104% over a year. The notes issued could only be redeemed if 52 stamps valued at 2% of the note were pasted on the back of each note. The issuer of the notes also sold the stamps and so could redeem the notes after a year for full value and still make a 4% gross margin from giving away the promissory notes. Merchants promoted the use of negative interest rate money even if they had to pay the weekly fee, as it was less than accumulated credit charges on every transaction during the week (Turnbull, 2009a).

A local government body or a chamber of commerce typically issued the notes. The British Chambers of Commerce with Coops UK are members of the Sustainable Money Working Group (SMWG) formed in 2011 to replicate the practice of ensuring liquidity for their

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[3] Introduced to a "chaotic" joint sitting of a newly elected Congress in the form of the *Emergency Banking Relief Act* on March 9, 1933. Only one copy of the Bill was available so it was approved after being read aloud by the chairman of the House Banking committee, Congressman Steagall.

[4] Reducing wealth inequality was another reason for Gesell (1916), who was inspired by Proudhon (1840) to develop depreciating money. It meant that money owners could no longer increase their wealth without their money or themselves making a contribution to society.

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members[5]. The formation of the SMWG was motivated by concerns that Small and Medium sized Enterprises (SMEs) may again be denied funds if another financial crisis arises.

It is for this reason that the Australian government should immediately trial cost carrying mobile money as a supplementary currency to "remake the economy" (Turnbull 2009a), provide "financial lifeboats" (Turnbull 2011a), and finance infrastructure projects **without the need to raise debt or taxes.**

The purpose of money as a unit of account/value

Another purpose of a currency is to provide a reference unit of value for market economies to allocate real resources by what Adam Smith referred to as the "invisible hand"[6]. However, no reference unit of value now exists since President Nixon took the US off the gold standard in 1971. Today no official currency of any nation can be defined in terms of any one or more specific goods or services.

The resulting monetary problems in the 1980's led *The Economist* (1990b) to run a cover story on the need to tether currencies with a supporting article on "A brief history of funny money" (*The Economist* 1990a). It led *The Economist* in 1986 to establish "The Big Mac index" to compare the relative value of currencies (*The Economist* 2014b). However, *The Economist* (1991) also followed the proposal by Turnbull (1977) and used Kilowatt-hours of electricity to compare currencies.

It is not logical to expect real resources to become allocated efficaciously when their market price is determined in a currency whose value cannot be defined in terms of anything real.

This means that no official currencies are fit for the purpose for efficient and effective resource allocation. Indeed they are counter-productive by providing an incentive for burning carbon rather than using renewable sources of energy. Turnbull (2010b) indicates how $Z could become politically irresistible by reducing or eliminating carbon trading or taxing.

There are ten reasons why the Australian dollar is not fit for purpose listed below as identified in Turnbull (2009b,c; 2011b; 2014). The reasons also contribute to the illogical structure of the financial system with its twelve "mysteries" described in Turnbull (2009b,c). The "mysteries" may explain why the Governor of the BoE stated: "Of all the many ways of organising banking, the worst is the one we have today" (King 2010: 18).

To mitigate all ten undesirable attributes, and protect the financial system from failure and so economic distress, it is recommended: that the government immediately establish a basis for the issue of a supplementary cost carrying digital currency tethered, **but not backed**, to a local sustainable service of nature like renewable energy (Turnbull 2011a). Sustainable Energy Dollars (SEDs) are referred to as $Z in Turnbull (2012a; 2013a, 2014).

At present there is no standard of economic value to relate prices and market forces to nature. The traditional approach is to define a basket of commodities (Selgin & White 1994). But no basket can be meaningful for all places all the time. Different commodities are required in different regions with the mix changing over time and with technological change. So the mix and nature of any basket will change over time as well as introducing additional uncertainties and imponderables on how the basket may be governed as illustrated by the LIBOR scandal.

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[5] The Working Group was originally formed as the Green Money Working Group with a webpage at www.gmwg.org. However, many members of the British Chambers of Commerce do not support "Green" initiatives and so the name was changed with a new web page at https://sites.google.com/site/smwgorg/.

[6] *The Concise Encyclopedia of Economics* at: http://www.econlib.org/library/Enc/bios/Smith.html

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While there appears to be no really satisfactory basis to define economic value, a most appealing compromise is the value of electricity generated from benign renewable energy sources in each bioregion. The consumption of energy is essential to sustain modern society and it correlates well with the quality of life and prosperity as illustrated by Gogerty & Zitoli, (2012). Unlike gold and other commodities renewable energy is available in some form in all regions of the World.

In some locations electricity is generated from renewable sources and distributed to all members of producer/consumer cooperative with a single price for all members. Price determination is not only governed on a democratic basis by millions of customers but on a highly transparent basis (Turnbull 2012b). Once the investment in generating equipment has been made the operating costs are minimal over their operating life of 25 years or so. The cost of future production would be relatively stable and averaged over a rich mix of generators to further the stability of production costs independently of consumption or changes in production. A tethered currency need not be affected by changes in production or consumption. This insulates it from speculation and manipulation or derivate trading.

Senators are invited to consider what better option they may have in defining a unit of value 25 years into the future to endow their children? Might Senators have more faith in Euros, English pounds, or US dollars? Central bankers, speculators, hedge funds, inflationary or deflationary forces and contagious economic crises would subject each currency to changes and/or manipulation. These uncertainties could be far greater than those associated with $Z.

Why Australian money is not fit for purpose

Without the introduction of an ecologically grounded $Z the fall back position in a financial crisis could become Bitcoins. Bitcoins are not fit for purpose for six and half of the items marked with an asterisk below. The role of Bitcoins for the other three and half roles is indeterminate.

The ten reasons why Australian currency is not fit for purpose are:

1. *It does not provide a stable unit of value as changes arise from domestic policy settings, foreign financial crises, speculators, hedge funds, currency manipulators, including central bankers involved in currency wars.
2. *It does not provide long-term predictable unit of value to provide a basis for a long-term planning and a stable economy.
3. *Its value cannot be controlled by Australians to further the interest of Australia and as a result the currency has become overvalued to reduce international competitiveness in manufacturing, tourism, and the export of educational and other services (Heath 2012a,b, Gilder 2014).
4. It creates a bias for not investing in “procreative” assets that **increase** the standard of living by making “nature yield her resources more abundantly” (Moulton 1935: 11/12).
5. It creates a bias for not investing in intellectual procreative property as all intellectual property has limited life - unlike official money.
6. It creates a bias for not investing in productive assets that **maintain** our standard of living (Suhr 1989).
7. *It does not carry a usage cost/negative interest rate as supported by Buiter (2009), Fisher (1933), Gesell (1916), Keynes (1936: 234), Suhr (1989) to create a level investment playing field between the currency and productive assets.

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8. *It has a value not defined by any one or more real goods and services, so it is disconnected from the real economy for efficiently and effectively allocating real goods and services by market forces (*The Economist* 1990a, *The Economist* 1991).
9. It is not created by producers of wealth* but by banks and the government who consume wealth (Turnbull 2012b).
10. *It is a national monopoly that distorts resource allocation between different regions of the nation with diverse economic endowments to sustain modern human society in their bioregions (Mundell 1961; Turnbull 2010b; *The Economist* 1991).

A table comparing 13 operating characteristics fiat currencies, gold backed and $Z is provided in Turnbull (2011b: Table 1). Set out below is a Table from (Turnbull 2014) that compares existing official Australian monopoly "funny money" with $Z created by bio-regional cooperative authorities consistent with the proposals of Turnbull (2012b).

	Difference between:	**Existing money**	**Sustainable value money ($Z)**
1	Money created by:	Government & banks	Consumers, producers, traders and investors
2	Interest rates fixed by:	Central Bank	Cost of risk insurance[7]
3	Expansion of money:	Government ratios/regulation	Value of market transactions
4	Value defined by:	Government fiat	Renewable resources of nature
5	Unit of value	Not defined	Renewable Kilowatt-Hours
6	Integrity of value	Indeterminate	Anchored to local Kwhs
7	Integrity of system	Exposed to contagion	Little exposed to contagion
8	Choice of currency	Government monopoly	Determined by community
9	Inflation control by:	'Blunt' policy instruments	Value of renewable energy
10	Structure of money:	Unlimited accrual of interest	Carrying cost limiting life
11	Ecological feedback	None	Local sustainable environment
12	Economic flaw-1	Incentive to own money	Disincentive to hold money
13	Economic flaw-2	Allocates resources to finance	Real assets more attractive
14	Economic flaw-3	Distorts price relativities	Sustainability determines price
15	Environmental flaw-1	Incentive to burn carbon	Favors renewable energy
16	Environmental flaw-2	No feedback from nature	Nature controls price signals
17	Social flaw-1	Compounds unearned income	No unearned income
18	Social flaw -2	Concentrates influence	Localizes influence
19	Political flaw-1	Concentrates power	Enriches local democracy
20	Political flaw-2	Low accountability	Cooperative accountability

The adoption of bioregional tethers would create a global unit of account ($Z) but one whose value would be determined by the local endowment of benign sustainable energy. As a consequence market forces would be created to distribute the global population on a sustainable basis. It would also enhance the integrity of crypto currencies by minimizing the time required to validate transactions on a decentralized basis. Financial crises could no longer arise on a global basis. Like cash, notes and Bitcoins, $Z would not create debt. But unlike cash, notes and Bitcoins, $Z would be self-liquidating to sustain more equal prosperity.

[7] When $Z are created by a third party insuring private contracts to allow them to be used as money with part of the insurance cost attached to the contract/currency to create a negative interest rate and/or redemption fund.

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During the last three centuries the financial system has proved not to be self-regulating or even subject to reliable regulation (Turnbull 2011a). The cover story of *The Economist* (2014a: 7, 47-52) presented "A History of Finance in Five Crises & how the next one could be prevented". The secretary-general of the Basel Committee stated that another crisis "will be impossible to avoid" (Drummond 2011). Many commentators expect a new crisis with Martin Wolf from the *Financial Times* anticipating it will be "Monstrous"[8].

However, like most other leading commentators on the financial crisis, neither Wolf nor Harvard Professor Kenneth Rognoff (2014), who reviewed Wolf's latest book, considered any of the ten reasons identified above why official money is not fit for purpose. Until policy advisers switch their focus from the structure and management of banks to the structure and management of what is used as money there would appear to be little basis for either avoiding another crisis or establishing a more equitable, democratic and sustainable society (Turnbull 2013d).

Notwithstanding the international warnings of another crisis the terms of reference of the current Australian Financial Inquiry has neglected raising the question is the nature of Australian currency fit for purpose? The need for the Financial Inquiry terms of reference to include this question was presented in Turnbull (2013b) and discussed in a seminar organized by the Sustainable Money Working Group at the University of NSW last December (Turnbull 2013c).

The committee is encouraged to recommend to the government and the parliament that:

1) A mobile phone application is created by the Government to allow Treasury to trial the issue of cost carrying digital money directly to the mobile phones of voters to provide them and the economy with a financial lifeboat in the event of another financial crisis. Also to provide the means for collecting taxes.
2) The government develops or encourages bioregional arrangements to tether the value of cost carrying digital currency on a transparent and democratic basis to the generation of electricity from benign sources of renewable energy.
3) The introduction of $Z like digital currencies be promoted and/or accepted.

I would be pleased to respond to any questions that the committee may have.

Yours faithfully,

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[8]Martin Wolf speaking at the Institute of Chartered Accountants of England and Wales on September 9th, 2014 recorded at: http://www.positivemoney.org/2014/10/martin-wolf-financial-times-stop-banks-creating-money-video/?mc_cid=bbb672de8e&mc_eid=bf36e50636.

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