Should money have a stable predicable value?

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Why do we use a financial system based on money whose value cannot be defined by any one or more definable real things? Money is used to price real resources on which markets forces are supposed to efficiently allocate.

But how can we explain a belief in efficient markets to a super intelligent alien? I asked this question to a super intelligent high profile economist who has his hands on the financial system levers. I suggested two answers: Humans are either insane or it's a religion. The answer I obtained was "a bit of both"!

This answer is not inconsistent with the views of another high profile economist, Lord King[1]. When Mervyn King was Governor of the Bank of England he stated to an audience in New York in 2010 that: "Of all the many ways of organising banking, the worst is the one we have today". In his 2016 book Lord King stated: "Another crisis is certain"[2]. According to King the inspiration for his book was a comment he obtained in Beijing when he was the guest of a senior Chinese Central Banker in 2011. He was informed: "I don't think you've quite got the hang of money and banking yet"[3]. A view apparently shared by the Queen of England when visiting the London School of Economics in October 2008. Her Majesty inquired as to why "no one saw the credit crunch coming"[4].

The greatest threat to any investment is uncertainty. A currency with volatile and unpredictable value inhibits investment. Uncertainty is exacerbated with international investment with floating currencies. Foreign exchange fluctuations arise from multiple complex unpredictable variables that include sentiments and perceptions to political and social events around the world.

In 1990 when the Euro was being proposed the cover story of *The Economist* was "Its time to tether currencies"[5]. *The Economist* in 1990 went on to say: "Economic historians will look back on the 1980's as the decade in which the experiment with floating currencies failed". The article explained how economic theories that *The Economist* had supported did not fit the empirical evidence in regards to how a floating currency should "act as a balancing mechanism".

Three decades later, the global financial crisis of 2008 and subsequent uncertainties about the maintenance of the Euro, again provided evidence that the financial system with floating currencies did not "act as a balancing mechanism".

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[1] King, M. 2010, *Banking: From Bagehot to Basel, and Back Again*, The Second Bagehot Lecture, Buttonwood Gathering, New York City, October 25, p. 16, <http://www.bankofengland.co.uk/publications/speeches/2010/speech455.pdf>.

[2] King, M. 2016, *The End of Alchemy: Money, Banking, and the Future of the Global Economy*, Little Brown: London.

[3] King, M. 2016, 'Lord Mervyn King: Why throwing money at a financial panic will lead to a new crisis', *The Telegraph*, 27 February, <http://www.telegraph.co.uk/business/2016/02/26/lord-mervyn-king-why-throwing-money-at-financial-panic-will-lead/?WT.mc_id=tmg_share_em>.

[4] Pierce, A. 2008, 'The Queen asks why no one saw the credit crunch coming', *The Telegraph*, 5 November, <http://www.telegraph.co.uk/news/uknews/theroyalfamily/3386353/The-Queen-asks-why-no-one-saw-the-credit-crunch-coming.html>.

[5] *The Economist*, 1990, 'Time to tether currencies?' January 6, pp. 9-10.

To provide a guide as to the relative value of international currencies *The Economis*t established its own standard reference unit of value[6]:

> The Big Mac index was invented in 1986 by *The Economist* as a light-hearted guide to whether currencies are at their "correct" level. It is based on the theory of purchasing-power parity (PPP), the notion that in the long run exchange rates should move towards the rate that would equalise the prices of an identical basket of goods and services (in this case, a burger) in any two countries. For example, the average price of a Big Mac in America in July 2017 was $5.30; in China it was only $2.92 at market exchange rates. So the "raw" Big Mac index says that the yuan was undervalued by 45% at that time.
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> Burgernomics was never intended as a precise gauge of currency misalignment, merely a tool to make exchange-rate theory more digestible. Yet the Big Mac index has become a global standard, included in several economic textbooks and the subject of at least 20 academic studies. For those who take their fast food more seriously, we have also calculated a gourmet version of the index.

However, when *The Economist* analyzed price distortions created by fiat money in the Soviet economy in 1991 it used energy measured in Kwhrs[7]. A suggestion made by this author in 1977 and developed in 1983[8]. A reference unit of value like that exists for weights and measures would likewise facilitate trade. As described in my other writings it would create a basis for establishing a much lower cost, efficient, stable, resilient and sustainable financial system[9].

Today minor official currencies may be tethered to the value of a major currency but no major currency like the Euro, US dollar of the English pound has its value tethered to any one or more real goods or services. As a result the value of all official currencies have become interdependent not anchored to realty. The interdependence means a crisis in one currency can spread to others. Economic value has become a social construct not fit for the purpose of minimizing uncertainty for investors or in providing a compelling logical basis that real resources are being allocated efficiently.

As noted by Lord Stern climate change represents: "The biggest market failure the World has ever seen"[10]. Implicit in this statement is that markets are required to distribute resources not just on an efficient basis but one that is sustainable. It can also be implied that trade in non-renewable natural resources should cease. In other words efficiency becomes a second order objective to sustainability. It also means that advanced financial decision-making tools like

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[6] *The Economist*, 2017, 'The Big Mac Index', July 13, <http://www.economist.com/content/big-mac-index>.

[7] *The Economist*, 1991, 'When the Price is Wrong', February 2.

[8] Turnbull, S. 1977, 'Let the Market Correct Itself', *The Australian,* Op. Ed. p.8, May 25. Turnbull, S. 1983, 'Selecting a local currency', *Options*, June, The Australian Adam Smith Club, Sydney.

[9] Turnbull, S. 2017, 'Sustainable Value Money: Why it's needed, how to get it?' (Forthcoming) in: Boubaker, S. and Nguyen, D. (eds.), *Ethics, ESG and Sustainable Prosperity,* World Scientific Publishing: Singapore, <https://ssrn.com/abstract=3022277>. Turnbull, S. 2017,'Renewable Energy Stabilising Money and Society*',* (Forthcoming) in: Droege, P. (ed.), Urban Energy Transition – Handbook for cities and regions*, Elsevier Science Publishers: Oxford.*

[10] Stern, N. 2006, *The Economics of Climate Change: The Stern Review*, Cabinet Office, London: HM Treasury, London, <http://www.sternreview.org.uk>.

"Present Value" or "Discounted Cash Flow" analysis should be over ridden by criteria of sustainability. It makes no sense to obtain efficient decision-making if we, or our descendents, cannot survive to enjoy the benefits of efficiency.

The criteria for selecting a basis for defining a stable unit of value therefore requires an anchor that is sustainable over the long term without creating harms or risks and whose use is essential for sustaining modern societies. While hamburgers represent a basket of commodities they do not meet the test of being essential as there are many alternatives. Any basket of commodities creates governance problems as to whom, when, and how decisions are made to change the composition according to seasons, tastes, fashions, local needs and changes in technology in their production.

A more compelling alternative is to use a sustainable service of nature that can be used to generate electricity that is essential in all modern societies. Electricity can be used to create clean air, clean water, food, clothing, shelter, and has become essential for communications and transport. Kilo-Watt-Hours (Kwhrs) of electricity generated from benign sources of renewable energy provides a way to construct a non-volatile reasonably stable index that provides feedback from local environments on their capacity to support humanity on the planet. Money whose value is indexed to this criterion will be referred to as Sustainable Energy Dollars (SEDs=$Z).

The word "indexed" is crucial as it means $Z are not convertible into any fixed number of Kwhrs though of course they can be used to purchase a negotiated number. An index based on say five year weighted averages of various parameters is essential to avoid both daily changes in real production and consumption or medium term speculation in changes that could lead to instabilities.

Generation of Kwhrs from benign renewable energy sources is possible in every bioregion of the planet. However, the resources required to generate benign Kwhs in each bioregion could vary considerably. This means the efficiency of sustaining humanity in each bioregion could also vary considerably. So while $Z could become a global unit of account their value could change in each bioregion according to how efficiently "nature can yield her resources more abundantly"[11] in each bioregion. The purchasing power of money needs to become greatest in those bioregions that can generate $Z most efficiently. In this way market forces are created for the global population to occupy those bioregions that can best sustain humanity indefinitely.

The fact that the consumption of energy may only represent a minor fraction of total expenditures in a local economy need not matter. The consumption of gold was irrelevant to it being accepted as reference unit of value. Gold has few uses in a modern economy and most uses are not essential. Electricity is essential. A comparative analysis of using gold and Kwhrs as reference unit of value is presented in my 1983 Monograph[12]. My 2016 journal article identifies twenty-five reasons why $Z can be designed to be better fit for purpose as a medium of exchange than official currencies[13].

Stability is inherent in resources required to convert renewable energy into electricity as their useful operating life exceeds twenty years. The means by which "nature can yield her

[11] A phrase used to define the word "capital" on page 11 of Moulton, H. G. 1935, *The formation of capital*, Brookings Institutions, Washington D.C.
[12] Op cit. n. 8, Turnbull 1983.
[13] Turnbull, S. 2016, 'Terminating currency options for distressed economies', *Athens Journal of Social Science,* 3(3): 195-214, July <http://www.athensjournals.gr/social/2016-3-3-3-Turnbull.pdf>.

resources more abundantly" with hydroelectric generators is much longer. The weighted average installed production capacity of Kwhrs over say five years would change very slowly. Even with major breakthroughs in technology the legacy of existing capacity would allow future changes to be well anticipated. Decline in the installed capacity of carbon burning generators could also be expected to change at an anticipated rate.

In an age of the Internet of Things, it is now practical to meter even highly decentralized retail capacities that can generate Kwhrs from benign renewable sources and to also meter its ultimate consumption. The word "ultimate" is used so consumption in storage facilities is not counted. Likewise the efficiency of consuming Kwhrs produced from carbon burning generators in relationship to their installed capacity can also be determined. All parameters being weighted five-year averages of Kwhrs to produce a unitless ratio. In this way an index can be created that increase the relative purchasing power of the local $Z as the ratio of renewable to non renewable increases and as the ratio of the consumption of renewable energy increases as a percentage of the installed capacity of its generators.

As the number of householders increase with their own sources of generating benign renewable Kwhrs, tens of millions of data inputs of productive capacity and consumption could become involved. The process of collection would be automatic through the Internet not subject to discretionary adjustments as occurs when interest rate are determined by the London Interbank Offering Rate (LIBOR) or Foreign Exchange rates. Both are determined by a small group of banks with serious conflicts of interest and profit incentives involved.

Perhaps the most appropriate body to determine a sustainable value money index in each bioregion of the world would be the non-profit International Accounting Standards Board (IASB). Their standards are required in over 125 jurisdictions, with many others permitting their use. The mission of the IASB is "to develop standards that bring transparency, accountability and efficiency to financial markets around the world. [14]" They also state that: "Our work serves the public interest by fostering trust, growth and long-term financial stability in the global economy". Members of the ISAB have informed the author that the reason they have not established a standard for economic value was because it was "too difficult". But many of their standards become problematical when organisations are operating in different currency areas.

Hopefully, the approach suggested in this article can provide a basis for the ISAB to undertake the task. It is urgently required to avoid another financial crisis as anticipated Lord King and others such the Secretary General of the Basle Committee on banking supervision. The latter stated "it will be impossible to avoid a repeat of the failures that caused a near collapse of the financial system in 2008"[15].

With an agreed standard unit of value accepted in each bioregion or nation their financial system would become independent of others suffering a crisis. In a region in which a crisis arose a basis would be established for anyone to enter into monetary contracts without needing money or a bank. Life would continue, perhaps on a sustainable decentralized basis without the need for carbon taxing or trading or even central banks as argued in my other writings[16].

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[14] <http://www.ifrs.org/about-us>.

[15] Drummond, M. 2011, 'Banks told to prepare for more shocks', *Australian Financial Review*,<http://www.afr.com/p/business/financial_services/banks_told_to_prepare_for_more_shocks_OTVEyH5WrFSHbbfIJLo8XL>.

[16] Turnbull, S. 2010, 'Money, Renewable Energy and Climate Change', *Financiële Studievereniging Rotterdam*, (*FSR Forum)*, 12:2, pp.14–17, 19-22, 24, 25, 28-29, February, Erasmus University, Rotterdam, <http://ssrn.com/abstract=1304083>.

Decentralized banking would replace central banking. Central banking is but a narrow form of central planning requiring one set of policies settings to fit everyone. We know central planning does not work. Lord King questioned the future of central banking before he became governor of the Bank of England. In 1999 he noted: "There is no reason, in principle, why final settlements could not be carried out by the private sector without the need for clearing through the central bank"[17]. This observation supported his question: "Will future historians look back on central banks as a phenomenon largely of the twentieth century?"[18]

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Turnbull, S. 2017, 'Sustainable Value Money: Why it's needed, how to get it?' (Forthcoming) in: Boubaker, S. and Nguyen, D. (eds.), *Ethics, ESG and Sustainable Prosperity,* World Scientific Publishing, Singapore, <https://ssrn.com/abstract=3022277>.

[17] King, M. (1999) 'Challenges for Monetary Policy: New and Old', presented to a Symposium on "New Challenges for Monetary Policy" sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, p. 48, August 27, <http://www.bankofengland.co.uk/speeches/speech51.pdf>.

[18] Ibid. p. 47.