ECONOMIC SECURITY REQUIRES MONETARY AND PRICE STABILITY: ANALYSIS OF MALAYSIAN MACROECONOMIC AND CREDIT DATA

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Abstract

Money is the common denominator for all economic transactions, and monetary economics provides a framework of analysis of the functions of money to measure their effects on monetary and economic systems. The Malaysia ringgit exchanged for RM110/oz of gold in 1970, however, the price of gold has increased to about RM4,700/oz. Accordingly, the value of one ringgit in 1970 has fallen to 2.3 cents in 2015 (=110/4,700), which represents a catastrophic collapse in the store of value function of money, during the 45-year period of the fiat standard. This paper investigates the affect of monetary theory and banking practice on the Malaysian economy through a full population analysis of money supply, GDP, interest rates and prices. The findings reveal that conventional monetary theories and policies have ensured monetary and financial instability. This research demonstrates that a decline in the value of fiat money due to an excessive supply of money as a result of aggregate deposit and loan interest in relation to demand, the effect of which is an exponential increase in prices over the long term. The social implication reveals that usury (riba) requires an economy to lower its standard of living through higher prices, to pay for interest (riba), so that wealth is confiscated through an exponential increase in inflation and transferred to the profit and loss statement of the fractional reserve banking system. The solution is to redefine money, not as a commodity, but as an instrument of transfer and apply an Islamic monetary theory of value to the medium of exchange, so that prices remain low and stable over the long term: economic security and sustainability requires monetary and price stability.

Keywords: Economic security, monetary policy, price stability

Introduction

Monetary economics provides a framework of analysis of the functions of money to measure the effects on monetary systems by emphasizing price level determination and the role of monetary policy. Tobin remarked that, "a society's money is necessarily a store of value. Otherwise it could not be an acceptable means of payment"[1]. From a Malaysian context, and this could apply to any *fiat* currency, the problem is that the average annual price of gold, which reflects the rate of exchange between Malaysian *ringgit* (RM) and one troy ounce of gold in 1970, was RM110, but the current price of gold as of mid September 2015 was about RM4,700. Therefore, one RM in 1970 in real terms, in terms of gold, has sunk to 2.3 cents (=110/4,700). This loss of value is compounded when we consider that it occurred over only a 45-year period, during which time we witnessed the demise of the Bretton Woods gold exchange standard in 1971, and the birth of the *fiat* standard. Essentially, the significance of this research involves establishing how a *fiat* currency losses its store of value and how it can be restored. Most debates in monetary economics can be resolved by empirical evidence, although monetary theory is required to interpret it. At the macro level, this paper presents a theoretical and empirical investigation as to the loss in the value of money, the causality in the growth of the supply of money, in relation to demand, and its effect on prices and GDP as a measure of economic growth. Under a *fiat* standard, this necessarily requires not only an analysis of the monetary theories that support fractional reserve banking, but also the impact of credit creation on Malaysia's economy. Mankiw commented that macroeconomics seems to be in disarray having been unable to accurately assess what causes fluctuations in output and employment[2]. In terms of the methodology adopted to solve economic problems generally, notwithstanding Hick's earlier observation that "econometrics is in some disarray"[3], and by continuing to rely on modeled solutions, it

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[1] James Tobin, "Money", in *The New Palgrave Dictionary of Money and Finance*, Vol.2, (London: Macmillan, 1992), 772

[2] N. Gregory Mankiw, "Macroeconomics in Disarray", *NBER Reporter*, (Summer 1991), 6-11, reprinted in *Society*. Vol. 29, Issue 4, (May/Jun.1992), 19-24

[3] John Hicks, *Causality in Economics*, (Oxford: Blackwell, 1979), xi

would seem that "deception is easily practiced from false recipes intended to simulate useful findings"[4], such that Krugman noted that having again failed to predict the latest financial crisis, "economists, as a group, mistook beauty, clad in impressive-looking mathematics, for truth"[5]. Indeed, Keynes referred to econometrics as "black magic… statistical alchemy".[6] Accordingly, this paper not only adopts an actual, rather than a probable outcome in terms of methodology, but also seeks to challenge conventional economic theory and assumptions, since the *Qur'an* not only instigated qualitative research, but *Allah* (s.w.t.) stated that, "verily, a guess is no substitute for the truth"[7].

In terms of contemporary monetary theories that were accepted by policy makers, the supply of money was either managed via interest rates (Keynesian) or through the quantity of money (neoclassical), but in any case, economic security, involving monetary and price stability, has not been achieved. This paper therefore recommends a different approach by adopting a monetary theory of value it instead of targeting interest rates, the quantity of money or even inflation, monetary authorities should target a stable value of money, such that prices would remain low and stable. This paper intends to demonstrate that by defining money as a commodity, conventional mainstream economics permits a theory of banking and a theory of interest to materialize in the form of debt finance. Interest is the mechanism that treats money as the object, as a commodity that must come at a price, a necessary pre-determined risk-free rental

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[4] David F. Hendry, *Economica*, New Series, Vol. 47, No. 188 (Nov., 1980), 390, also printed in *Econometrics: Alchemy or Science?* (Oxford: Oxford University Press, 2008), 14

[5] Paul Krugman, "How Did Economists Get It So Wrong?" *The New York Times* 2 Sept. 2009, accessed 15 Sept., 2015, www.nytimes.com/2009/09/06/magazine/06Economic-t.html?pagewanted=all&_r=0

[6] John M. Keynes, "On a Method of Statistical Business-Cycle Research. A Comment", *The Economic Journal*, Vol. 50, No. 197, (March, 1940), 156. With a first class honours degree in mathematics from King's College, Cambridge, Keynes understood all too well the concerns he held for econometric or statistical inference and whether statistical methods are proper tools for testing economic theories. See also Keynes' critique on probability in John M. Keynes, *Treatise on Probability*, (London: Macmillan, 1921).

[7] *Al-Qur'an*, 53:28

charge, which compensates the capital provider for the time value of money (TVM). Interest is the price of debt reflecting the supply and demand of loanable funds, and a debt or a loan at interest, is always greater than cash received. This explains the necessity of increasing the stock of *fiat* money, which is backed by debt, being the asset of the banking system, such that the value of goods and services must accommodate this inflationary increase in the supply of money, which increases at total aggregate interest. The Federal Reserve stipulated that the money supply and aggregate prices have a direct correlation: "The control of the quantity of money is essential if its value is to be kept stable. Money's real value can be measured only in terms of what it will buy. Therefore, its value varies inversely with the general level of prices. Assuming a constant rate of use, if the volume of money grows more rapidly than the rate at which the output of real goods and services increases, prices will rise. This will happen because there will be more money than there will be goods and services to spend it on at prevailing prices"[8]. Furthermore, "since the purchasing power of the dollar is the inverse of the price level"[9], the growth in debt and money supply means that the TVM, inflation and the purchasing power of money (PPM) are inter-related. This paper seeks to establish that the theory of interest is in fact a circular argument, since how can interest effectively compensate the creditor, if at the same time it continuously devalues the purchasing power of money, the effect of which (not the cause) is to merely raise the general level of prices.

On the other hand, from an Islamic perspective, Al-Ghazali states that money is "like a mirror, which has no color, but it reflects all colors…it is an instrument to lead to all objectives…"[10]. Accordingly, money in Islam is an instrument of transfer only, which carries no additional charge or price, associated with its usage. Other classical Muslim scholars were unanimous on the intrinsic value of

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[8] Federal Reserve. *Modern Money Mechanics, A Workbook on Bank Reserves and Deposit Expansion*. (Federal Reserve Bank of Chicago, Jun. 1992), 2

[9] Murray N. Rothbard, *The Mystery of Banking*, (New York: Richardson and Snyder, 1983), 31

[10] Abu Hamid Muhammad ibn Muhammad Al-Ghazali, *Ihya Ulum-ud-Din*, translated by Al-Haj Maulana Fazlul Karim, 4 Vols, (New Delhi: Islamic Book Service, 2004), 90-91

money. Abu Ubayd (774-837)[11], Al-Mawardi (974-1058)[12], Ibn Khaldun (1332-1406)[13], Al-Maqrizi (1364-1442)[14] all insisted that *an-nuqud islamiyyah* meant a *dinar* of 72 grains of barley and the *dirham* of 50 and two-fifths grains, in terms of pure gold and silver coins, reflecting a high intrinsic value. Not only does the *Qur'an* teach us about the functions of money in terms of gold and silver[15], we discover in Ibn Majah (and Abu Dawud) an important *hadith* entitled the "prohibition of destroying *dirhams* and *dinars*" in the book of business transactions: "Alqama b. Abdullah (r.a.) reported on the authority of his father that *Allah's* Messenger (s.a.w.) forbade destroying the coins in vogue among the Muslims without any necessity"[16]. Central to the theory of money in Islam is that the stability of the value of money is an indispensable objective of the Islamic monetary system, and this is derived from the *Qur'an*, which unequivocally stresses honesty and justice in all measures of value[17]: "Give full measure and weight fairly, and defraud not men of their things, and do not act corruptly in the land, making mischief"[18]. As a "store of value" function of money, for it to be eroded in value in real terms, is clearly tantamount to a kind of corruption in the world because of the adverse affect it can have economic welfare and social justice. If persistent inflation exists (the effect), associated with a

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[11] Abu Ubayd al-Qasim ibn Sallam, The Book of Revenue, *Kitab al-Amwal*, translated by Imran Ahsan Khan Nyazee, (Reading: Garnet, 2003), 480-481

[12] Abu al-Hassan Al-Mawardi, *The Ordinances of Government, Al-Ahkam al-Sultaniyya*, originally written 1045-1058, translated by Wafaa H. Wahba, (Reading: Garnet, 2000)

[13] Ibn Khaldun, *Muqaddimah,* first published in 1377, translated by Frank Rosenthal, 3 Vols, (New York: Pantheon, 1958), 3, 58

[14] Adel Allouche, *Mamluk Economics, a Study and Translation of Al-Maqrizi's Ighathah. Kitab Ighathat al-Ummah bi-Kashf al-Ghummah*, (Book of Aiding the *Ummah* by Investigating the Depression), first published in 1405, translated by Adel Allouche, (Salt Lake City: University of Utah Press, 1994), 57, 64

[15] *Al-Qur'an*, 3:75 (unit of account, standard of deferred payment), 12:20 (unit of a account, medium of exchange), 18:19 (medium of exchange, store of value), 3:91 (store of value).

[16] Ibn Majah 12:2263; Abu Dawud 23:3442

[17] Muhammad U. Chapra, *Towards a Just Monetary System*, (Leicester: The Islamic Foundation, 1985), 37

[18] *Al-Qur'an*, 11:85

decline in the value of money (the cause), as a result of an exponential supply of money in relation to its demand, it would imply that money would not be able to reliably perform its role as a medium of exchange, as an honest unit of account and measure of value, as an equitable standard of deferred-payment, and as a trustworthy store of value. Given the prevalence of debt at interest derived from the modern fractional reserve banking system, it is worth quartering Abu Hurairah (r.a.), who reported from *Rasulullah* (s.a.w.s.) that, "There will come a time, he said, when you will not be able to find a single person in the world who will not be consuming *riba* (usury). And if anyone claims that he is not consuming *riba* then surely the dust of *riba* will reach him"[19].

This paper is organized into five sections. This first section provides an introduction to the research. The second section provides a review of literature on modern monetary theory and fractional reserve credit creation. The third section presents the methodology, whilst the fourth section presents the findings and discussion. Section five provides some concluding remarks and recommendations.

A Review of Modern Monetary Theory and Banking

In terms of contemporary monetary policy, macroeconomics has been largely influenced by neoclassical or Keynesian theories. Whilst more recent contributions to macroeconomic analysis have emerged, with new classical economics, deemed monetarism mark II [20] (Hoover, 1984) and new Keynesian economics, both based on 'rational expectations' and (neoclassical) micro-foundations, in reality "new economics" (re-packaged mercantilism) and monetarism (with its neoclassical roots) continue to permeate mainstream macroeconomics and also modern variants of Islamic economics. In order to explain, as to why we arrive at our methodology, it is necessary to review these modern monetary theories, starting with neoclassical economics, then Keynesian economics and contrasting these with monetarism. This paper also provides important insights and review of the mechanics of modern fractional reserve banking

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[19] Abu Dawud, 22:3325

[20] Kevin D. Hoover, "Two Types of Monetarism". *Journal of Economic Literature,* Vol.22, No.1, (Mar. 1984), pp.58-76

and credit creation, since modern monetary theory and the theory and practice of banking are inter-twined.

Neoclassical Economics; Irving Fisher [21] (1867-1947) articulated the modern quantity theory of money, which states that "given real money demand, changes in the money supply cause equiproportional changes in prices"[22], or that money supply has a direct proportional relationship with the price level, and expressed in the form of the classical transactions theory approach, that emphasized the quantity of money available, the average velocity and the volume of trade, as reflected in Fisher's equation of exchange, which was published in *The Purchasing Power of Money* in 1911[23],

$$MV + M^1V^1 = \sum pQ = PT \tag{1}$$

Where M is the stock of currency, V its velocity, M^1 is the volume of demand deposits, V^1 the velocity of demand deposits, $\sum pQ$ is the sum of the quantities of goods and services (Q) sold at market prices (p), P is the aggregate price level and T is total number of transactions. With Fisher's classical transactions approach, the velocity of money (V) is seen as circulating at a constant rate, thus nominal income (PY) is determined by M. With output (Y) determined by the real economy, when the demand for money is in equilibrium with supply, M^d = M (i.e. M^s), and with V constant, any increase in M will increase P, until M^d once again equals M. The equation of exchange is an identity or a truism, which is true by definition rather than by a distinct monetary theory. As a truism it does not explain the variables it contains, but rather each of the variables is defined by others. In terms of percentage changes %P + %Q = %M + %V, and by re-arranging we obtain the inflation identity %P = %M + %V - %Q. However, unlike M, P or Q, V cannot be

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[21] Fisher was an American economist whose work on the classical transaction quantity theory of money (and his equation of exchange) strongly influenced Milton Freidman in the development of monetarism.

[22] Thomas M. Humphrey, "Algebraic Quantity Equations Before Fisher and Pigou". *Economic Review*, Federal Reserve Bank of Richmond, (Sept./Oct., 1984), 13

[23] Irving Fisher, *The Purchasing Power of Money*, (New York: Macmillan, 1911), 195-196

independently measured and can only be defined residually to equate MV and PY, from the identity,

$$V = \frac{PY}{M} \tag{2}$$

Or in percentage terms, $\%V = \%$Nominal GDP - $\%$M. Thus, at equilibrium, with $M^s = M^d$, the demand for money and V are constant and fixed over the short term thus allowing for a stable and predictable relationship to exist between M and P, since Y is given. With V and Y given, the equation of exchange expresses proportionality between the exogenously given money supply and the price level, and the dependence of P on M,

$$P = \frac{\overline{V}}{\overline{Y}} M \tag{3}$$

A doubling of M would double P: the quantity of money determines the price level. Hence, the weakness of this monetary theory is that it relies on the supply of money alone, since the value and demand of money are omitted. As distinct from the Islamic theory of value as relayed by Ibn Khaldun[24], the quantity theory of money regards the value of money as its purchasing power, and concepts of value and demand are in fact no longer visible in a theory that imagines the prices of goods and services as controlled by the supply of money alone, and the very meaning of inflation has changed from inflationary monetary expansion (the cause), to mean the actual rise in prices (the effect). Von Mises in *The Theory of Money and Credit* (1912) stated that the quantity theory "fails to explain the mechanism of variations in the value of money"[25]. Just as with the purchasing power theory so two with the quantity theory and

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[24] Ibn Khaldun (1332-1406) was a leading Muslim scholar (Maliki School), the forerunner of social sciences in general, and the father of Islamic economics in particular, who wrote the *Muqaddimah* in 1377. He was the tutor of Al-Maqrizi (1364-1442), a foremost scholar (Shafi'i School) and historian, who also wrote extensively on monetary value in relation to intrinsic value.

[25] Ludwig von Mises, *The Theory of Money and Credit*, originally published in 1912, (Indianapolis: Liberty Fund, 1981), 130

indeed with Marxism[26], the common denominator is the desire for a central monopoly over the supply of money in managing the economy.

Keynesian Economics: Keynes[27] (1883-1946), in *The General Theory of Employment, Interest and Money* (1936), proposed a single relationship between the effective demand for finished products and employment and stated that general employment was always positively correlated with the aggregate demand for consumer goods. [28] This was a mercantilist notion, which had been conclusively refuted by the classical economists, including Adam Smith in 1776, and also John Stuart Mill's profound insight in 1848, that the "demand for commodities is not the demand for labour"[29], a doctrine that was described in 1876, by the English writer Leslie Stephen (1832-1904), whose "complete apprehension is, perhaps, the best test of a sound economist"[30]. The mercantilist purchasing power theory evolved into the effective demand of Keynes. In essence, the common thread that runs through mercantilism and Keynes is the notion that the authorities should undertake an active role in the intervention and manipulation of money to facilitate "a favourable [balance of trade], provided it is not too large. This will prove extremely stimulating"[31]and that it will draw money into, and thereby stimulate, the domestic economy. The increase in the quantity of money would thereby increase the circulating purchasing power,

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[26] Karl Marx and Friedrich Engels, *The Manifesto of the Communist Party*, originally published 1848, (Oxford: Oxford University Press, 1998), 25-26

[27] Keynes had a profound impact on the theory and practice of modern macroeconomics and government policies, such that his ideas formed the basis for the Keynesian school of new economics. Notable contemporary supporters include Stiglitz, Krugman and Mankiw.

[28] John M. Keynes, *The General Theory of Employment, Interest and Money*, (London: Macmillan, 1936), 25

[29] John S. Mill, *Principles of Political Economy*, originally published in 1848 with seventh and final edition published in 1871, republished in *The Collected Works of John Stuart Mill*, Vol.2: Books I-II, Vol.3: Book III-V and Appendices, (Indianapolis: Liberty Fund, 2006), 2, 78

[30] Leslie Stephen, *History of English thought in the Eighteenth Century*. 2 Vols. Originally published in 1876, second edition published in 1881 and re-printed (Boston: Adamant Media Corporation, 2007), 2, 279

[31] Keynes, *General Theory*, 338

which in turn increases the demand for labour and production, but only "by discouraging rises in the wage-unit"[32], such that wages and costs do not surpass the increasing demand and that wages should remain fixed[33]. Since investment fluctuates with the interest rate, a low interest rate will increase employment: and *in lieu* of an easy money policy for private investment, then direct government deficit-spending would guarantee full employment [34]. Effective demand will increase and full employment will be attained, only if labor accepts a diminishing real wage being equal to or less than the existing real wage. However, after this point if money wages rise faster than prices, the yield from applying a further unit of labor would be a diminished quantity of production: hence, with the volume of employment and output unchanged, prices rise in proportion to MV, thereby satisfying the quantity theory[35]. Re-stated, Keynes requires labor to accept a lower real wage and if not, the quantity theory applies, prices rise, and society in either case will have to accept a lower standard of living.

Keynes' admission that "the primary effect of a change in the quantity of money on the quantity of effective demand is through its influence on the rate of interest"[36] led Henry Hazlitt[37] (1894-1993) to comment in 1959 that, "by effective demand Keynes seems to mean little more than total monetary demand; therefore doubling the quantity of money, say, directly doubles the effective demand because the two terms practically mean the same thing"[38]. Keynes justified that any increase in the money supply would increase effective demand, thereby increasing employment. That a significant rise in the supply of money might exceed demand would lead to inflation and by implication involve a depreciation in the value of

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[32] Ibid., 340

[33] Ibid., 289

[34] L. Albert Hahn, *The Economics of Illusion*, originally published in 1947, (Auburn: Ludwig von Mises Institute, 2007), 107, 139, 166.

[35] Keynes, *General Theory*, 289

[36] Ibid., 298

[37] Henry Hazlitt was an American economics writer and journalist credited with bringing the Austrian school of economics to the English-speaking audience.

[38] Henry Hazlitt, *The Failure of the New Economics*, originally published in 1959, (Auburn: Ludwig von Mises Institute, 2007), 299

money did not go unnoticed. The inflationary impact of his theory was pointed out to Keynes by Hayek in early 1946, but Keynes tried to re-assure Hayek that if his ideas "should ever become dangerous [Hayek] could rely upon him again quickly to swing around public opinion…But three months later he was dead"[39]. Keynes drew attention to the similarity between mercantilism and his views, by dedicating Chapter 23 of his *General Theory* (1936) to a discussion on mercantilism, in which Keynes states the mercantilist "preoccupation with increasing the quantity of money was due to their desire to diminish the rate of interest"[40] and this despite the classical position, as reflected in Hume's essay *Of Interest* (1741) that, "The rate of interest…is not derived from the quantity of the precious metals [i.e. money]"[41], being the price of the supply of, and the demand for, loanable funds.

The main difference between Keynes' theory of money and the quantity theorists was the impact of the interest rate and the behavior of the velocity of money (V). Keynes expressed his theory of money demand in terms of the liquidity preference theory, which emphasized the importance of the interest rate, which varies, and rejected that V was constant. Keynes argued that the demand for money be categorized according to three motives[42]; (i) the transaction motive (arising from the medium of exchange function of money and positively related to income); (ii) the precautionary motive (positively related to income); (iii) the speculative motive (arising from the store of wealth function of money, positively related to wealth and income, but negatively related to the interest rate). Keynes modeled the demand for money, as a demand for a real quantity of money, or real balances, M/P. If prices were to double, twice as much M would be required to purchase the same items, although real balances would remain unchanged. Since real balances

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[39] Friedrich A. Hayek, *Contra Keynes and Cambridge: Essays, Correspondence*, *The Collected Works of F.A. Hayek,* Bruce Caldwell (Ed.),   (Indianapolis: Liberty Fund, 2009), 232

[40] Keynes, *General Theory*, 341

[41] David Hume, "Of Interest" (1741), in *Essays: Moral, Political and Literary*, originally published in 1752, (Indianapolis: Liberty Fund, 1987), 296

[42] Keynes, *General Theory*, 107

depend on interest rates and income, Keynes expressed the demand for money[43] in terms of the liquidity preference function (L),

$$\frac{M^d}{P} = f(i,Y) \qquad (4)$$

Where M^d/P is the demand for real money balances, i is the interest rate (negative), and Y is income (positive). L can also be expressed as

$$\frac{P}{M^d} = \frac{1}{f(i,Y)} \qquad (5)$$

By multiplying both sides by Y, and substituting in $M = M^d$, since the supply and demand of money must equal when the money market is in equilibrium, we solve for velocity,

$$V = \frac{PY}{M} = \frac{Y}{f(i,Y)} \qquad (6)$$

Accordingly, an increase in i encourages people to hold lower real money balances for a given level of Y, and the rate at which money exchanges hands (velocity) must also increase. With Keynes' liquidity preference theory, velocity fluctuates with the interest rate. Indeed, velocity and interest rates will both move in the same direction, being pro-cyclical, rising with economic expansions and falling during recessions. Keynesians held that M^d was relatively unstable (implying velocity was unstable) and that M was endogenous beyond the control of authorities. Thus, within the macro-economic framework, fiscal policy is deemed of more importance than monetary policy. By contrast, Milton Friedman[44] (1912-2006) revived the quantity theory by restating Fisher's

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[43] Ibid., 168-201

[44] Milton Freidman was an American economist of the Chicago (neoclassical) school and was strongly influenced by Irving Fisher. Friedman was initially a Keynesian supporter of the New Deal, but was later credited with reviving the quantity theory via monetarism. He was awarded the Nobel Prize in economics in 1976.

classical transaction approach in 1956[45], and targeted the rate of growth of the supply of money via central banking in determining national output and maintaining price stability, which became known as monetarism. Fisher treated the demand for money being the inverse of the velocity of circulation as constant,

$$M^d = \frac{PY}{V} = \frac{M}{PY} = \frac{1}{V} \tag{7}$$

Keynes made this ratio depend on the interest rate and the state of expectations, but Friedman developed further the theory for the demand for money by recasting the Keynesian liquidity preference theory[46] beyond bonds, by applying a theory of asset demand for real money balances, where the holders of wealth could choose between various classes of assets: money, bonds, and equities – all with known or anticipated returns[47]:

$$\frac{M^d}{P} = f(Y_p, r_b - r_m, r_e - r_m, \pi^e - r_m) \tag{8}$$

Where, M^d/P is the demand for real money balances, r_m is the expected return on money, r_b is the expected return on bonds, r_e is the expected return on equity, and π^e is the expected rate of inflation[48]. Friedman's measure of wealth, permanent income (Y_p) or average long-run income is stable and that the demand for money and thus velocity is a constant function, but not a constant number and gave "the usual qualitative relation: velocity tends to rise during the expansion phase of a cycle and to fall during the contraction phase"[49]. The demand for money is positively related to wealth, and

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[45] Milton Friedman, *The Quantity Theory of Money: A Restatement*, originally published in 1956, reprinted in *The Optimum Quantity of Money*, (Chicago: Aldine, 1969), 52

[46] Mervyn K. Lewis and Paul D. Mizen, *Monetary Economics*, (Oxford: Oxford University Press, 2000), 154

[47] Friedman, *The Quantity Theory of Money: A Restatement*, opt. cit., 53-56

[48] Frederic S. Mishkin, *The Economics of Money, Banking and Financial Markets*, 8/e, (New York: Pearson, 2007), 505-506

[49] Milton Friedman and Anna J. Schwartz, *A Monetary History of the United States, 1867-1960*, (Princeton: Princeton University Press, 1963), 302

incentives for holding wealth in the form of commodities, bonds, equity and goods are represented by the expected return on each of these assets relative to the expected return on money and are negatively related to the demand for money: the higher the returns of these assets relative to the expected return on money, the lower the quantity of money demanded. The expected return on money is not constant, however $r_b - r_m$ does stay constant as interest rates rise, hence interest rates have little effect on the demand for money, which is stable and therefore velocity is predictable. Monetarists held that M^d is relatively stable (implying a stable or constant velocity) such that M was exogenous and could be effectively controlled by monetary authorities. They emphasized the importance of monetary policy rather than fiscal policy. However, since the government largely relied on funding from the central bank through bonds, it was precisely the instrument Keynes benchmarked his discussion on , that is, interest rates. Meanwhile, the quantity theorists (including the monetarists) were also supporters of macro-economics. Therefore, Keynesian and monetarists might well have differed on methodology regarding monetary policy, but for both, the common numerator in monetary theory was macro-economics and the common denominator was the monetary monopoly of a central bank: in reality, they are two sides of the same coin.

The review of modern monetary theory provides an important framework for our methodology and can be briefly summarized as follows: the neoclassical economists continued to develop the quantity theory of money, as reflected in Fisher's transaction equation. This was challenged by Keynes, who was initially an adherent to the quantity theory and repackaged it in the form of his liquidity-preference theory that was again recast by Friedman to re-state the quantity theory. In essence, the monetarist MV is the equivalent of the Keynesian C+I+G+Xn or the aggregate expenditure (AE) on goods and services in one year. In fact, AE is equal to aggregate demand (AD) or rather aggregate monetary demand (AMD), which equals PY or the total value of output of goods and services, as reflected in GDP. Thus MV represents the monetary side of the economy and PY the real economy. The 45 degree line in Keynes' AE model is aggregate supply (AS) and represents the

equilibrium between AD and AS, reflecting the law of the markets (which Keynes sought to disprove) and not just at the intersection of effective demand (Z) adjusted for hoarded savings as proposed by Keynes. For Keynes "the primary effect of a change in the quantity of money on the quantity of effective demand is through the influence of the interest rate"[50]; therefore, Z is nothing more than AMD, and so a simple quantity theory of money is embedded within the mercantilist purchasing power theory of Keynes' 'new economics'. Accordingly, we can readily use the quantity theory variables in the methodology to explain away both monetarist and Keynesian monetary theories in relation to prices and thus monetary policy, when summarizing macroeconomic variables as follows,

$$MV = AE = AD = AMD = Z = AS = GDP = PY \qquad (9)$$

Fractional Reserves and Credit Creation: The U.S. economist, John Kenneth Galbraith remarked that, "the process by which banks create money is so simple that the mind is repelled. Where something so important is involved, a deeper mystery seems only decent"[51]. Despite all the arguments for the modern monetary and financial system and associated management of the money supply, usually found in our modern economics text books, the migration of the medium of exchange from gold and silver, to *fiat* money comprising paper notes, coins and bank deposits, in reality involves "debt organized into currency"[52]. Bank deposits represent an important feature of the fractional reserve business model upon which all banks operate. "The actual process of money creation takes place primarily in banks"[53]. The "process of lending creates money"[54], and the

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[50] Keynes, *General Theory*, 298

[51] John K. Galbraith, *Money: Whence It Came, Where It Went*, (Boston: Houghton Mifflin Co., 1975), 18-19

[52] Charles H. Carroll, *Organization of Debt into Currency and Other Papers*, originally published between 1855-1979, (Princeton: D. Van Nostrand, 1964), 100

[53] Federal Reserve, *Mondern Money Mechanics*, 3

[54] Shelagh Heffernan, *Modern Banking*. (Chichester: John Wiley and Sons, 2995), 35

deposit or money multiplier[55] is the means by which banks introduce credit into society. Since, deposits are not bailments, but are loans from the depositor to the bank, credit creation involves a double loan between the banks and their customers, both charging a return on the time value of their capital, a deposit rate and a lending rate of interest: this is a fundamental observation, since this paper argues that the supply of *fiat* money increases exponentially at the aggregate deposit and lending rates of interest and the cash ratio is a necessary mechanism to accommodate the aggregate rates of interest, since a debt is always greater than cash received. Society is now entirely in debt derived from an unfunded book keeping entry as a result of a debt transaction. If no one borrowed, there would be no new deposits. Moreover, Vadillo argued that settling a loan by a deposit involves exchanging IOUs and invalidated *fiat* money altogether.[56] He cited Imam Malik (r.a.) that "a delay for delay is to sell a debt against one man for a debt against another man"[57] and a transaction is forbidden if it is a "debt for a debt"[58].

The former chief justice of Pakistan, Muhammad Taqi Usmani, relayed the history of money creation with the goldsmith bankers of medieval England; "Initially, it was abuse of trust and a sheer fraud on the part of the goldsmiths not warranted by any norm of equity, justice and honesty. It was a form of forgery and usurpation of the power of the sovereign authority to issue money. But overtime, this fraudulent practice turned into the fashionable standard practice of the modern banks under the 'fractional reserve' system…the result is that the modern banks are creating money out of nothing"[59]. Rothbard also concluded that fractional reserve banking involves "taking some else's money and lending it out at the same time that the depositor thinks his money is still available for him to redeem… It should be clear that modern fractional reserve

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[55] Money multiplier = 1 / fractional reserve requirement.

[56] Umar Vadillo, *Fatwa on Paper Money*, (Granada: Madina Press, 1991)

[57] *Al-Muwatta of Iman Malik ibn Anas*, translated by Aisha A. Bewely, (London: Portobello Books, 2001), 268

[58] Ibid., 254

[59] Muhammad T. Usmani, *The Text of the Historic Judgment on Riba given by the Supreme Court of Pakistan 23rd December 1999*, (Petaling Jaya: The Other Press, 2001), 96-106

banking is a shell game, a Ponzi scheme, a fraud… Fractional reserve banks create money out of thin air… A bank's assets are always "longer" than its liabilities… a bank is inherently bankrupt, and would actually become so if all its depositors woke up to the fact that the money they believe to be available on demand is actually not there"[60]. Rothbard went further by stating that "issuing promises to pay on demand in excess of the amount of goods on hand is simply fraud, and …is legalized counterfeiting…The institution of banking has become so hallowed and venerated that we can only say that it allows for legalized fraud, probably unknown to almost all bankers. As for the original goldsmiths that began this practice, I think our opinion should be rather more harsh"[61]. Furthermore, the English M.P. William Cobbett, having been arrested in 1811 for objecting to the behavior of the Bank of England, reflected on the absurdity of interest as a means for economic growth; "It is, really, something little short of madness to suppose, that a nation can increase its wealth; increase its means of paying others; that it can do this by paying interest to itself. When time is taken to reflect, no rational man will attempt to maintain a proposition so shockingly absurd"[62]. Such sentiments would later be vindicated by Josiah Stamp, a former Director of the Bank of England, in a public address at Central Hall, Westminster in 1937, "The modern banking system manufactures money out of nothing. The process is perhaps the most astounding piece of sleight of hand that was ever invented. Banking was conceived in iniquity and born in sin… If you want to be slaves of the bankers, and pay the costs of your slavery, then let the bankers create money"[63].

Given the review of modern monetary theory and credit creation, quantity theory macroeconomic variables can be adopted to measure the growth in *fiat* money derived from credit creation due to aggregate interest, as a result of the fractional reserve-banking model,

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[60] Rothbard, op. cit., 97-99

[61] Ibid., 160-161

[62] William Cobbett, *Paper Against Gold: Containing the History and Mystery of the Bank of England*, (London: W. Cobbett, 1817), 67-68. Cobbett subsequently published Letters written in 1811 from Newgate prison.

[63] Michael Rowbotham, *The Grip of Death: A study of modern money, debt slavery and destructive economics*, (Charlbury, Oxon.: Jon Carpenter, 1998), 35

and present an alternative monetary theory of value, absent of interest, in order to reveal what real prices would have been without any monetary manipulation by the banking system.

Methodology

Within the quantity theory, if V is stable then a direct, predictable relationship must exist between nominal money supply and nominal GDP, but not for the reasons the quantity theorists suggest, and if V does vary, then not for the reasons the Keynesians suggest either. This paper seeks to demonstrate that exponential growth in debt at interest is the causality for the exponential growth in money supply and the demand for money has, in reality, very little influence over the long term supply of money, where the medium of exchange is almost entirely debt organized into paper money. The methodological framework should,

(i) Analyze the nature of *fiat* money and debt, determine the relationship between interest and money supply, and examine the relationship between money supply and GDP, to reveal the impact of aggregate interest in growing money supply and GDP.

(ii) Determine prices and the purchasing power of money (PPM) by adopting the quantity theory to reveal monetary and price instability as a result of conventional monetary theories and policies.

(iii) Apply the monetary theory of value to reveal the relationship between the value of money (VM) reflected in the price of gold (PG) in relation to prices and GDP and to test the hypothesis that by correcting the loss of value by expressing real prices in terms of pure gold or silver, to reveal monetary and price stability, and then compare the performance of nominal and real prices in terms of long term stability and short term volatility.

Statistical analysis involves a full population rather than a sample of monetary and economic data to achieve an actual rather than a probable outcome. Sources include secondary time series data on Malaysian macroeconomic variables involving money supply aggregates, reserve requirements, GDP, interest rates, unemployment rates, exchanges rates, and the price of gold were culled from

published on-line databases provided by Bank Negara Malaysia (BNM), the Malaysian Department of Statistics (DOS), the International Monetary Fund's International Financial Statistics (IMF), and the London Bullion Markets Association (LBMA). The descriptive statistics of this data will be used to test the hypothesis that when current prices are epxressed in *fiat* money, they increase exponentially due to interest, and when real prices are expressed in terms of gold or silver, they revolve around a long term secular trend that is constant. The correlation coefficient for a population is applied when measuring the strength and direction of the linear relationship between two variables. Understanding the strength of dependence would be important in terms of (i) correlating money supply with GDP, to determine how a change in the quantity of money relates to nominal GDP, (ii) correlating the nominal PG and CP to determine how the diminution of monetary value relates to commodity prices, and (iii) correlating the PG and GDP to determine how a decrease in the value of money relates to nominal GDP. Whilst these correlations are inter-related, correlation does not reveal causality. Causality will have been demonstrated in the methodology by calculating the aggregate rates of interest in determining money supply growth and through correcting the loss of value by expressing price in their bullion equivalents. The research can measure the impact of debasement (devaluation) by expressing nominal prices in real terms, in terms of gold or silver. Real prices would reveal what prices would have been if the authorities had maintained a stable of currency of high quality. Another way of assessing the performance of a monetary system is to present a summary analysis of long term stability and short term volatility of prices and rank their performance[64]. Two techniques have been adopted: (1) long term price stability measured by the average absolute annual change in the index for prices and (2) short term volatility, measured by the population standard deviation of annual price changes. By weighing each measure equally, we can then present a stability rank for prices in nominal and in real terms.

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[64] John D. Mueller, *Redeeming Economics, Rediscovering the Missing Element.* (Wilmington, Delaware: ISI Books, 2010), 329-331, 441

By developing a model to estimate M3 money stock and correlate it with the actual M3 monetary aggregate over the same period, this research can demonstrate that total aggregate interest is driving the growth in money supply. On a bank's balance sheet, loans are also recorded as deposits. Since a debt is greater than cash received, the additional money required from the combined interest payments on deposits and loans in order to obtain an estimated M3 monetary aggregate (M3e) can be calculated as follows,

$$M3e = [(M3e - C)^{t-1}(1+r)^n] + C \qquad (10)$$

M3e is the estimated M3 money stock for the current period, $(M3e\text{-}C)^{t\text{-}1}$ is the estimated M3 monetary aggregate less the reported C or currency in circulation (notes and coins) in the previous period, r is the published combined 3-month deposit and lending rates of interest per period, n is the number of periods, plus C or currency in circulation (notes and coins) in the current period. Given that we can adopt the quantity theory framework, we may ignore official CPI or PPI data, since these reflect pre-selected baskets of retail or wholesale prices, and we can proceed to calculate annual prices from Fisher's equation of exchange (MV = PY). We can then construct a consumer price index (CP), the reciprocal of which is the purchasing power of money (PPM), since PPM = 1/CP. By doing this we would have adjusted the RM by a price index in order to determine if it has retained its store of value and remained constant over the long term.

As confirmed by Abdullah, the value of money (VM) is distinct from the PPM and what money can purchase at a particular point in time[65]. The VM reflects the intrinsic value of money which takes into account both quality and quantity in terms of an exchange rate. It can be expressed as the rate of exchange between a currency and a fixed amount of bullion, such as a troy ounce of pure gold (or silver), reflecting the price of gold (PG) or the money value of gold, ….. can be expressed as the rate of exchange between pure gold and

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[65] Adam Abdullah, "Examining the Value of Money in England Over the Long Term (1259-2009)". *International Journal of Economics and Finance*. Vol.5, No.3, (Mar. 2013), 73-89

one unit of currency, reflecting its gold content (GC) or the gold value of money. We can construct indices of the PG and GC from 1970-2014: any increase in the PG or decrease in the GC would confirm a decline in the VM. We can show a strong correlation between the PG and CP, CP and nominal GDP or the PG and nominal GDP by correcting the loss of value in nominal money and converting nominal prices in RM to real prices in terms of their gold (or silver) bullion equivalents. A "change in the value of money [means] a change in the silver or gold content of the currency…[and provides]…the means of converting all such prices [in contemporary money] into bullion equivalents…The use of bullion equivalents is…for the special purposes of relating prices to…currency policy."[66] As detailed by Abdullah[67], in order to comprehend and test the effects of monetary policy on prices, real prices should be expressed in terms of pure gold (CPgc) by multiplying the index of nominal consumer prices (CP) by the index of the gold value of money (GC) so that CPgc = CP x GC. The reciprocal of real prices is real gold or the purchasing power of gold (PPG) such that PPG = 1/CPgc. The PPG can also be calculated by adjusting the PG with nominal prices (CP) such that PPG = PG/CP. In fact, we can compare real prices with nominal prices and also compare the PPM with the PPG. Similarly, we can also construct real silver or the purchasing power of silver (PPS) and real prices expressed in terms of silver (CPsc).

The expected outcome is that real gold and real prices will remain stable over the long term, whilst nominal prices and the PPM will show exactly the opposite. This would confirm that monetary policy should target a stable value of money in order to achieve price stability and sustainable economic growth. The quantity theory is a mathematical identity, and since we have full access to available data, we may conduct a full population (rather than a modeled sample) investigation of economic variables in support of our hypothesis, which is a monetary theory of value that takes into account value, supply and demand and not just supply only. With

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[66] William H. Beveridge, *Prices and Wages in England from the Twelfth to the Nineteenth Century*, Vol. 1 Price Tables: Mercantile Era [1550-1830], originally published in 1939, (London: Frank Cass & Co., 1965), xlvii

[67] Abdullah, *Examining the Value of Money in England*, op. cit.

regard to the *fiat* standard, an exponential decay in the value of money, reflected in a higher rate of exchange with gold (a higher price of gold), due to an excessive increase in the supply of money organized into debt at interest, in relation to demand, the effect of which is an increase in the price level. For this paper's hypothesis to be valid, real prices expressed in terms of gold (or silver) must be low and stable over the long term. Its antithesis is the quantity theory, which does not describe economic behaviour, and will reveal an exponential decay in the value and purchasing power or money (VM, PPM), such that nominal prices will have grown exponentially over the long term. This would confirm that mainstream economics is indeed in disarray, since the associated monetary theories and monetary policies, have failed in their primary objective of price stability.

Findings and Discussion

To be a credible medium of exchange, a measure of value and a standard of deferred payment, a currency has to retain its store of value function of money and preserve its purchasing power. In terms of distance, a meter cannot be 100cm now, but only 2.3cm in the future, for it would not be a credible measurement of distance, and this is the same with *fiat* money, including the *ringgit*. A store of value is a means for saving, and if lost, a currency cannot be a credible measure of value or unit of account nor be relied upon as a standard for deferred payment for future receipts. This paper involves monetary and economic analysis of data derived from Malaysia, and its dual banking system. The paper will demonstrate the linkage of the growth in the monetary sector as measured by money supply to the growth in the real economy as measured by the gross domestic product, and analyze the relation of the growth of money to the aggregate price level and reduction in purchasing power.

Included in the principle objects of Bank Negara Malaysia (BNM), contained in the Central Bank Act of 1958 (revised 1994), was that BNM was to "issue currency in Malaysia and to keep reserves safeguarding the value of the currency"[68]. Although the

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[68] Central Bank of Malaysia Act 1958, revised 1994, Article 4(a)

requirement to safeguard the value of the currency was abrogated under the Central Bank Act of 2009, BNM is still required "to promote monetary stability and financial stability conducive to the sustainable growth of the Malaysian economy" [69]. Indeed, the inability to sustain growth implies both monetary and price instability. Actually, BNM issues the *ringgit* (RM) as *fiat* money, but also began to issue its own 24k gold bullion coins, the *Kijang Emas* (KE), which has a *ringgit* face value imprinted on the reverse of each coin. The KE can be used for purchasing goods and services; however, the extrinsic value is far below the intrinsic value and so they are in practice bought and sold for investment purposes alone. BNM began issuing their gold KE on 18th July 2001 at the rate of exchange with their paper RM or selling price of RM1,082. However, by 1st September 2015 the KE were selling at RM5,056: a nominal gain of 367% in the value of the KE. However, by inference, RM1.00 has devalued against the KE to not much more than 20 cents (=1,082/5,056), and hence, the RM has essentially lost about 80% of its value in just over 14 years, thus undermining, in real terms, the nominal value of any other investment, asset or wage denominated in RM. The RM has failed the litmus test in satisfying the store of value function of money, and BNM has failed to maintain its value, despite the fact that it is required to do so, in terms of providing monetary stability. What has caused such a calamitous collapse in value?

Analyzing Fiat Money, Interest and GDP: the monetary balance sheet of the RM is presented in table 2, which confirms that *fiat* money is backed by debt: being the asset of the fractional reserve banking system. The RM is backed 0.3% by gold held as part of Bank Negara's international monetary assets (IMA). Contrary to GAAP principles, we can only assume that the gold reported by BNM is allocated under the IMA, since the IMF requires all central banks to treat gold in vault and gold receivables as a same line item. Central banks require commercial banks to treat cash in bank and bank receivable as separate line items in the interest of good governance and transparency, but the IMF requires central banks to be opaque about the nature of their gold holdings. Abdullah (2015, Feb)

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[69] Central Bank of Malaysia Act 2009, Article 5(1)

suspected that all or a significant part of official central bank stocks have been leased out and are unlikely to return, so that in reality we are subjected to not only a fractional reserve banking system, but the monetary system is also operating within a fractional reserve gold market upon which the pyramid of money creation rests [70]. Meanwhile, the RM is also back 99.7% by debt (IOUs owed to banks).

Table 2: The monetary balance sheet of the RM as at 31st December 2014

Assets		Liabilities	
Gold	5.2	BNM Currency	68.2
IOUs Owed to Banks	1,548.6	Bank Deposits	1,485.6
	1,553.8	**M3**	**1,553.8**

Source: BNM Statistics
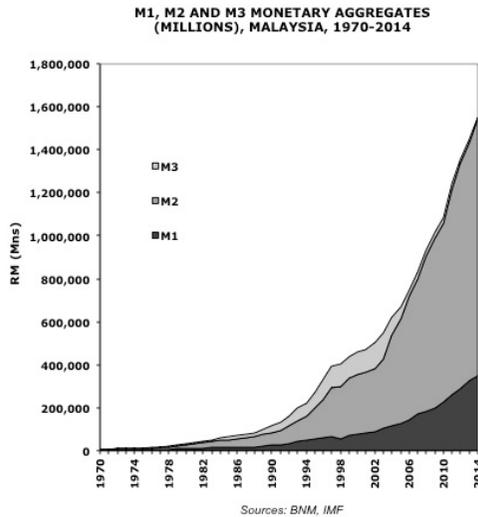
Fig.1: Malaysian money supply, 1970-2014

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[70] Adam Abdullah and Mohd J. Abu Bakar, "The Gold Market and the Value of the U.S. Dollar", *International Business Research*, Vol.8, No.3, (Feb. 2015), 190-207

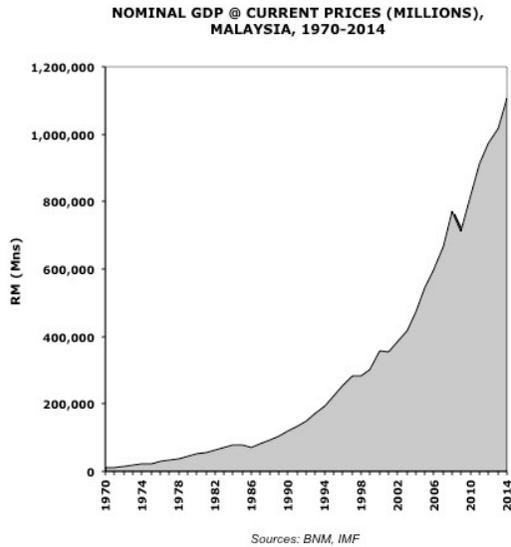NOMINAL GDP @ CURRENT PRICES (MILLIONS),
MALAYSIA, 1970-2014

Fig. 2: Malaysian GDP, 1970-2014

In assessing the growth in Malaysian monetary aggregates since 1970 (figure 1), we may observe the significant rise in Malaysian monetary aggregates, which has been exponential since the demise of the Bretton Woods gold exchange standard in 1971. How well does this growth in the monetary sector compare with growth in the real economy? In figure 2, we may observe a similar pattern of growth in the market value of final goods and services produced over the same period as measured by nominal GDP at current prices.

In the quantity theory, if velocity is stable then a direct, predictable relationship must exist between M and nominal GDP. Beyond presenting the correlation between M3 and GDP, we also need to ascertain what caused M3 to rise so significantly. Since we determined that deposit money is created from lending, the amount of a loan created is an unfunded book-keeping entry, which is recorded as a debt, and at the same time as a deposit, on both sides of a bank's balance sheet. We argue that the cash ratio provides cover for the total deposit rate and lending rates of interest to inevitably grow

money supply at the combined rate of interest, since debt is greater than cash received. Moreover, since a deposit is a loan from a customer to a bank and repayable at any time, and debt finance is a loan from a bank to a customer and repayable at some point in the future, financial intermediation reveals a time mis-match within the balance sheet of a bank. Its assets are long and its liabilities are short, which in terms of financial stability reveals that a bank is not just an unstable financial model, but technically insolvent and would become bankrupt if all claims are presented against reserves (during a bank run). In figure 3, we present the results of our estimated M3e money stock in comparison with the actual reported data. In table 3, we present the correlation coefficients on full populations of M3 and M3e variables and also M3 and nominal GDP variables.

Table 3: Correlation of M3, M3e and GDP

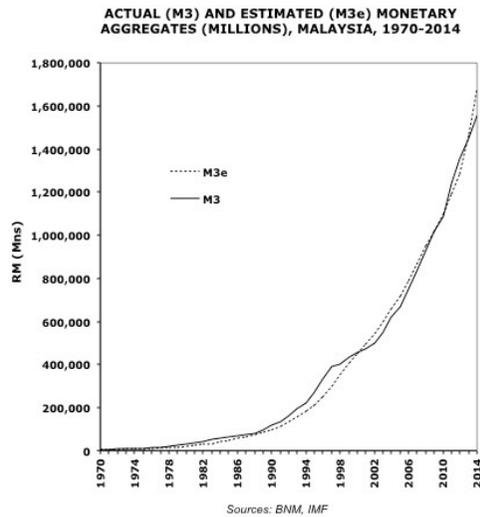| Variables	M3, M3e	M3, GDP
Coefficients	0.996	0.997

Fig. 3: Actual and estimated M3, 1970-2014

Essentially, in either case the correlation coefficient is almost unity, which not only confirms that a predictable relationship exist between M and nominal GDP, but also implies that a similar such relationship exists between M and total interest. The money multiplier confirms that they create many more claims against reserves, but deposits created out of nothing is a result of a customer's agreement to enter into a debt contract, and since a debt is greater than cash received, the combined deposit and lending rates of interest are the cause of the increase in M3 and nominal GDP. The desire to protect savings from inflation from a deposit interest rate is self-defeating.

Determining Prices and the PPM: We now need to deconstruct the quantity theory by presenting our findings in revealing the inter-relationships between macro-economic variables involving the money supply, and the market value of output in real and nominal terms, in determining nominal prices, so that we can construct a consumer price index (CP) and evaluate the PPM. Our data involves M1, M2, M3 monetary aggregates, real and nominal GDP, the velocity of circulation for (M2) money, the 3-month deposit rate, the lending rate and the total rate of interest, the statutory reserve requirement (cash ratio), the unemployment rate, annual changes in prices (derived from M1 and M2), and indices for nominal consumer prices expressed in RM and the PPM (an the basis of M2). When the money market is in equilibrium, the demand for money (Md) and the velocity of the circulation of money (V) is constant. Md or k is the inverse of V,

$$k = \frac{1}{V} \qquad (11)$$

Therefore, by applying the quantity theory, and in terms of calculating percentage changes, we can calculate for V,

$$V = \frac{PY}{M} = \frac{(1+P) \times (1+Y)}{(1+M)} \qquad (12)$$

P represents nominal consumer prices, M the nominal quantity of money and Y is real output or real GDP. Accordingly, V = 1.07783 x 1.06427 / 1.1471 = 1, so V and k are constant. In terms of the transactions approach, Ms=Md, and with V constant, the average growth for M2 from 1970-2014, assuming $MV = PY$, is such that M2 (Ms) x V (where V is 1 or constant) = 1.07783 x 1.06426 = 1.147 or 14.71%. Keynesians argue that velocity is not stable, but monetarists hold that velocity is generally constant in the short run, rising during the expansion phase of a business cycle and declining during the contraction phase. In reality, we may observe that V is the percentage difference between the annual change in nominal GDP and the money supply (in this case the M2 money stock), so that from 1970-2014, V = 11.008% - 14.711% = -3.703%. The demand for money (k) is the reciprocal of V (with the sign reversed), so for the M2 monetary aggregate, the average k from 1970-2014 is 3.703%. There is an inverse relationship, which is largely offsetting, between money supply (M) and the velocity of circulation of money (V): when M increases, V decreases, or the demand for money (k) increases, with no material impact on output (real GDP) or inflation (P).

Friedman stated that the quantity theory rests on a distinction between the nominal quantity of money and the real quantity of money, and it takes for granted that the real quantity, rather than the nominal quantity of money, is preferred by holders of cash balances[71]. The implication is that the real quantity of money cash balances or nominal money adjusted for prices (M/P) must equal real GDP, since it is the market value of the quantity of final goods and services also adjusted for prices (real GDP or Y),

$$\frac{M}{P} = Y \qquad\qquad (13)$$

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[71] Milton Friedman and Anna J. Schwartz. *Monetary Trends in the United States and United Kingdom: Their Relation to Income, Prices, and Interest Rates, 1867-1975*, published for the National Bureau of Economic Research, (Chicago: University of Chicago Press, 1982), 17-18

Here Y (real GDP) = 1.1471 / 1.07783 = 1.06427 or 6.427%. In terms of nominal consumer prices (P), it follows that,

$$P = \frac{M}{Y} \qquad (14)$$

Therefore, P = 1.1471 / 1.06427 = 1.07783 or 7.783%, reflecting the average change in consumer prices from 1970-2014, derived from the M2 monetary aggregate. Meanwhile, the M1 monetary aggregate grew on average by 12.896%. M1 is transactional money or notes and coins (currency in circulation) plus demand deposits (at commercial banks), which BNM refers to as money supply. M1 is more immediately affected by changes in high-powered money or currency plus commercial bank reserves held at the central bank. In the run up to the Asian financial crisis, Malaysia experienced full employment with an unemployment rate of below 3%, but with the price of basic staples held down through government subsidies, inflation was channeled into assets, such as stocks and real estate, creating asset price bubbles. BNM increased the SRR from 3½ to 13½ per cent, which might have been a contributing factor to bursting the balloon by the time of the crisis itself – a policy that was aggressively reversed back down to 4% immediately following the crisis in an attempt at reflating the economy in 1998. With a given output, as a function of productivity and employment, and with the economy at full employment, the decrease in SRR allowed banks to lower total interest rates from 20.67% in 1998 to 12.69% in 1999 as money and debt expanded. That resulted in an immediate spike in prices on goods and services exchanged against M1 to 27.83%. Accordingly, there is a positive relationship between the cash ratio (SRR) and total deposit and lending interest rates, which holds true in all circumstances, including during financial crises. Notwithstanding changes to a cash ratio, the cash ratio itself provides cover to generate additional interest due, and it is consistent with our M3e model for broad money supply, and our thesis that aggregate interest is responsible for nominal money supply growth over the long term. Most of the growth may be accounted for in M1 and M2. Indeed, the total interest of 13.7% mirrors the average M1 and M2 growth rates over the same

period. The monetary aggregate figures and velocity of money in circulation are thus disguising the direct underlying causes involving the money multiplier inherent in the cash ratio, inter-laced with the combined deposit and lending rates of interest and the mechanics of fractional reserve banking. Finally, since the aggregate price level (P) represents inflation, then the purchasing power of money (PPM) is the inverse of prices (PPM = 1/P); from a price index where 1970=1, derived from changes in the annual price level, as a function of M/Y, we can deflate the purchasing power of one *ringgit* (RM1.00) in 1970, and observe how monetary inflation has steadily devalued domestic purchasing power to levels in 2014, far below that which existed 45 years earlier (figures 4 and 5).
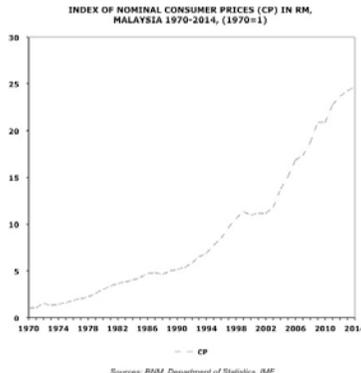
INDEX OF NOMINAL CONSUMER PRICES (CP) IN RM,
MALAYSIA 1970-2014, (1970=1)

Sources: BNM, Department of Statistics, IMF

Fig.4: CPI, 1970-2014

DOMESTIC PURCHASING POWER OF MONEY (PPM),
MALAYSIA, 1970-2014, (1970=1)

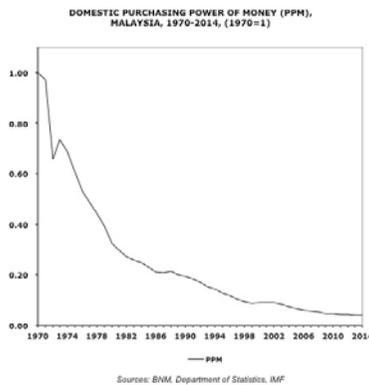Sources: BNM, Department of Statistics, IMF

Fig.5: PPM, 1970-2014

Our consumer prices index (CP) revealed that as a function of the M2 monetary aggregate, prices rose exponentially to 24.6 by 2014, and conversely the PPM as an inverse of CP sank to 0.04. We will now present our findings on an alternative theory based on a monetary theory of value, and then compare the two theories in terms of long term stability.

Determining a monetary theory of value: Unlike the quantity theory, a monetary theory of value takes into account value, supply and demand, rather than just supply alone to explain a change in prices. As a statement of the theory, it involves a change in the value of money, as reflected in its rate of exchange with gold (or silver), as a result of a change in the supply of money in relation to demand, the effect of which is an increase in the price level. Inflation is therefore defined as a decline in the value of money (the cause) and not an increase in prices (the effect). An inflationary monetary policy is thus to weaken the value of money, reflected in a higher gold price (the currency value of a fixed amount of gold, in terms of its rate of exchange with gold), the result of an increase in the supply of money, in relation to demand, the effect of which would be to increase prices. Equally, a deflationary monetary policy involves increasing the value of money, reflected in a lower gold price, the result of a decrease in the supply of money, in relation to demand, the effect of which would be to lower prices. Initially, we may assess the performance of the gold price (PG) in relation to consumer prices (CP). We already know the exponential decline in the PPM in terms of the RM, so how did the PPG perform over the same period? How did the PG perform in relation to nominal GDP? We can also present the correlation coefficients to measure the strength of dependence between PG and CP and also between PG and GDP. Finally, if the monetary authorities had decided not to compromise on the VM and instead targeted a high value currency that comprised gold, as a commodity standard or a 100% gold standard (rather than the historical fractional reserve gold standard), what would real prices have looked like over the long term when expressed in pure gold, and how would real prices relate to real gold (or the PPG)? We can then analyze performance in terms of stability and volatility between gold and a

fiat standard. We have constructed indices derived from and presented them in figure 6 with the PG in relation to nominal GDP to show the relationship between a lower VM, as reflected in a higher PG, and the market value of output at current prices.
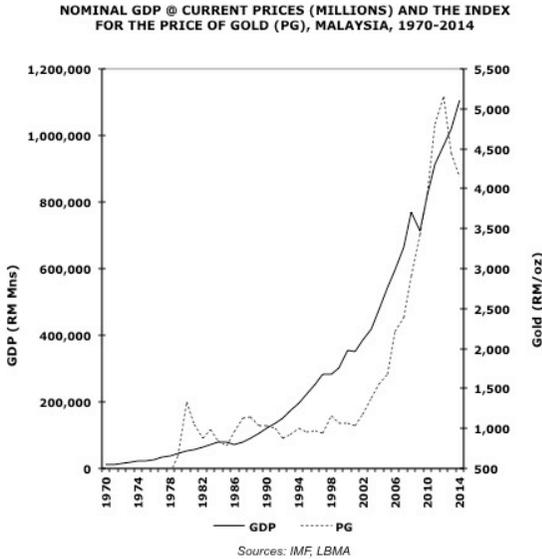

Fig.6: The gold price and nominal GDP, 1970-2014

The GDP is strongly related to the PG, with a correlation coefficient of 0.94, as reflected in table 4. This implies that GDP increased due to a loss in the value of money. Actually, the PG is an American price for gold converted into RM at prevailing exchange rates. For about six years following the Asian financial crisis, the RM was fixed at 3.80:1.00 USD, which would have dampened the Malaysia PG when expressed in RM. Moreover, it has been established that the U.S. PG itself has experienced price manipulation, particularly during the 1980s and 1990s as part of a strong dollar policy by the Federal Reserve, making the opportunity cost of holding gold unprofitable. The Gibson Paradox reveals that there is an inverse relationship between real interest rates and the real

price of gold[72]. Notwithstanding this, the coefficients summarized in table 4 are strongly related, implying a predictable relationship between a decline in the value of money, reflected in the PG and prices, which also affect the market value of output at current prices, as reflected in nominal GDP.

Table 4: Correlation of PG, CP and GDP

Variables	PG, CP	PG, GDP
Coefficients	0.93	0.94

In figure 7 we present in log scale the PG, CP and the PPG (real gold). In figure 8, we present in log scale, real prices expressed in terms of gold (CPgc) together with real gold or the purchasing power of gold (PPG).

INDICES FOR THE PRICE OF GOLD (PG), THE PURCHASING POWER OF GOLD (PPG, AND CONSUMER PRICES (CP), MALAYSIA, 1970-2014, (1970=1)
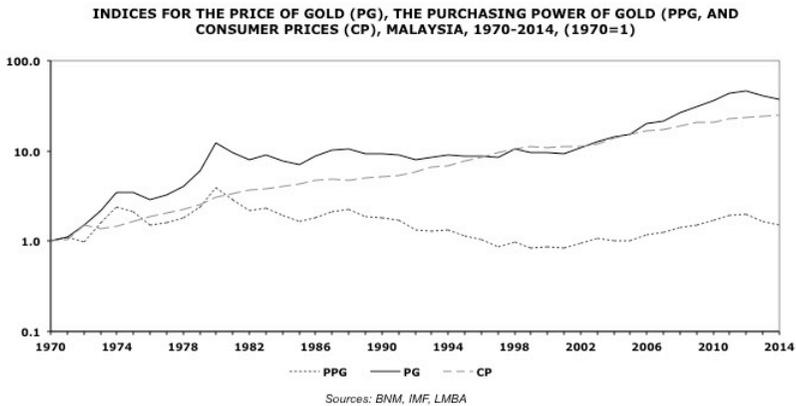

Sources: BNM, IMF, LMBA

Fig.7: Indices for the price of gold, consumer prices and the PPG, 1970-2014

Of particular note in both figures 7 and 8 is that the PPG (real gold) is constant and stable over the long term, and in contrast with the PPM, gold retains its store of value, whilst *fiat* money does not.

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[72] Adam Abdullah, "The Gibson Paradox: Real Gold, Interest Rates and Prices". *International Business Research*. Vol.6, No.4, (Apr. 2013), 32-44

For real prices, prices expressed in terms of pure gold (or pure silver), is that they reflect what the price level would have been if it had been absent of any monetary distortion or manipulation. Real prices remain low and stable over the long term. We calculated CPgc by multiplying CP with GC (being the reciprocal of the PG), so CPgc = CP x GC, but of course, as with the purchasing power of money, so too with the purchasing power of gold, since gold is money, real gold or the PPG is also the reciprocal of CPgc.

INDICES FOR REAL PRICES IN TERMS OF PURE GOLD (CPgc), AND THE PURCHASING POWER OF GOLD (PPG), MALAYSIA, 1970-2012, (1970=1)
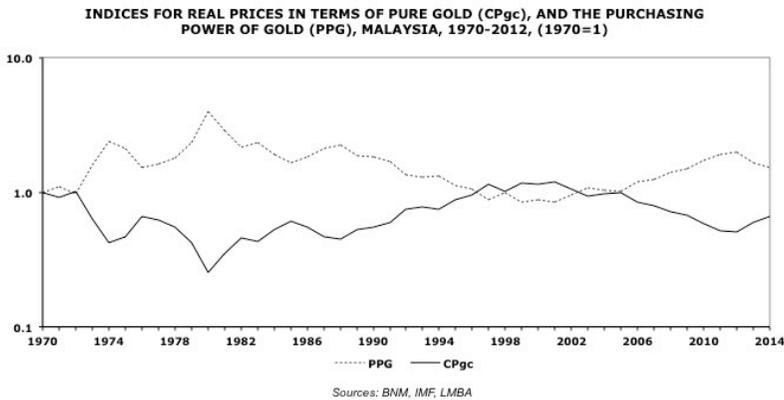

Sources: BNM, IMF, LMBA

Fig.8: Indices of real gold (PPG) and real prices expressed in gold, 1970-2014

Additionally, in figures 9 and 10, we also present similar data for silver, confirming that despite the distortions of price suppression and unallocated gold and silver trading within the precious metals markets, as established by Abdullah[73], silver is also money, since real silver or the purchasing power of silver (PPS), and real prices expressed in pure silver (CPsc), are also constant over the long term. Historically, a number of cultures based their currency on silver, including Persia, India, China, Malaya, Spain, the U.S., England and the Ottoman Empire to name but a few. Monetary authorities typically hold a small portion of their international monetary assets in gold, but in terms of any restoration of monetary value, a more cost efficient approach (given the spot price of silver), would be to

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[73] Abdullah, *The Gold Market and the Value of the U.S. Dollar*, op. cit.

acquire silver to redeem *fiat* money as part of any potential currency reform. This cost effective approach would enable a nation to adjust prices and the purchasing power of money by targeting a high value of money as a monetary policy, in order to obtain low and stable prices over the long term.
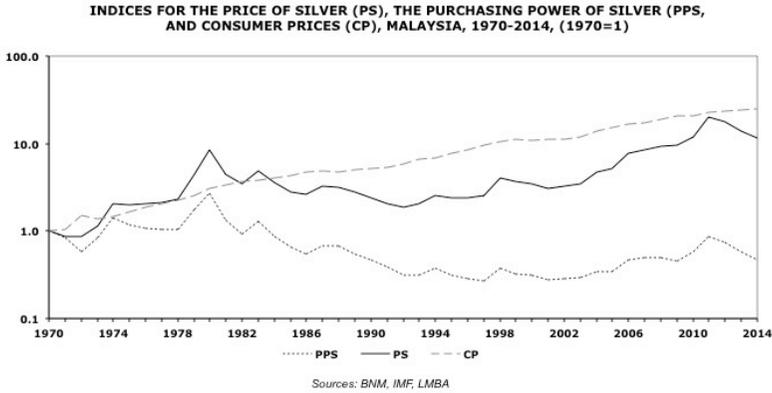
INDICES FOR THE PRICE OF SILVER (PS), THE PURCHASING POWER OF SILVER (PPS, AND CONSUMER PRICES (CP), MALAYSIA, 1970-2014, (1970=1)

Sources: BNM, IMF, LMBA

Fig.9: Indices for the price of silver, consumer prices and real silver (PPS), 1970-2014

INDICES FOR REAL PRICES IN TERMS OF PURE SILVER (CPSc), AND THE PURCHASING POWER OF SILVER (PPS), MALAYSIA, 1970-2014, (1970=1)
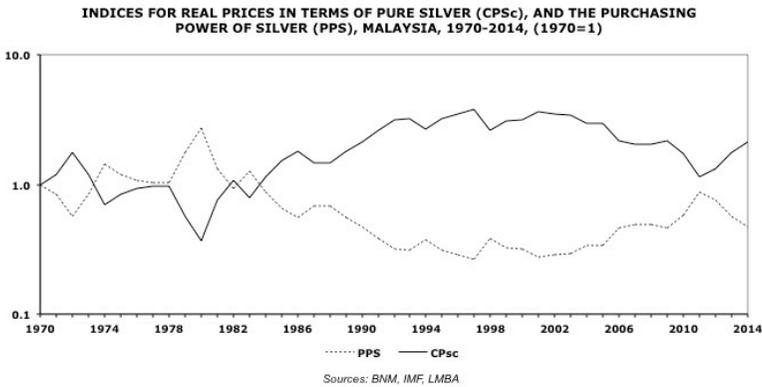
Sources: BNM, IMF, LMBA

Fig.10: Indices of real silver (PPS) and real prices expressed in silver, 1970-2014

It follows that if we are to alter the quantity theory to reflect changes in the value of money, we should begin with PY and the real

economy, rather then MV and monetary sector, and reconfigure the equation of exchange to PY = MV, where V no longer means the velocity of money, but the value of money (VM). In fact, we ought to emphasize VM rather then MV, since both the quality and quantity of money will have to be taken into account. Our re-stated equation of exchange, is no longer an identity, it is a monetary theory of value,

$$PY = VM \qquad\qquad (15)$$

P reflects real prices (CPgc) and *Y* output or the quantity of good (Q) so that *PY* is real output or real GDP. *V* is the value of money reflected in its rate of exchange with gold (or silver), and *M* is the money stock. VM is the real value of the quantity of money, expressed in terms of gold (Mgc), rather than adjusted for prices M/P. Moreover, nominal GDP or the market value of output may be expressed in terms of gold (GDPgc) and therefore, real output (GDPgc) = real money (Mgc). Our empirical data is presented in figure 11.

INDICES FOR REAL PRICES (CPgc), REAL GOLD (PPG), REAL GDP (GDPgc), REAL MONEY (Mgc), AND NOMINAL GDP ADJUSTED FOR REAL PRICES, MALAYSIA, 1970-2014, (1970=1)
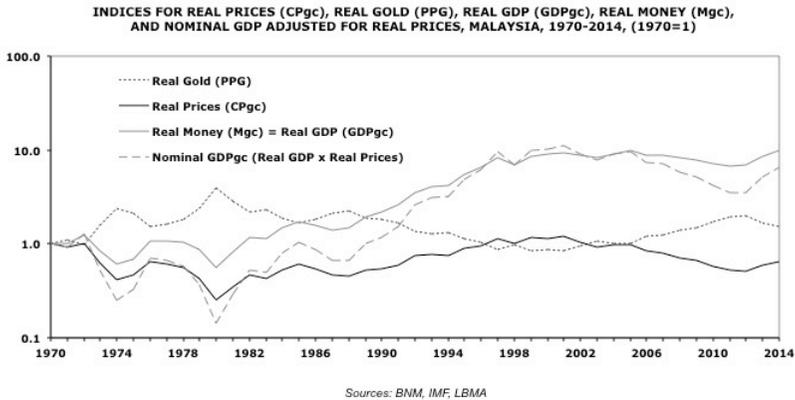

Sources: BNM, IMF, LBMA

Fig.11: Real prices, gold, GDP, money and nominal GDP expressed in gold, 1970-2014

As we have already observed in figure 8, real gold (PPG) and real prices (CPgc) revolve around a constant of 1 over the long term, indeed, PPG x CPgc = 1. Where changes in real prices or output

occur, the market value of final goods and services (GDP) changes, not because there has been a change in the value of real money (Mgc), since we have corrected the loss in value in the stock of nominal money, but the quantity of real cash transactions must equal the quantity of goods exchanged, and so changes occur in real prices in relation to output, as a function of supply and demand of goods and services. When real prices (CPgc) reach equilibrium at a constant 1, the curves for nominal and real GDP coincide; equally, real gold (PPG) adjusts since it is the reciprocal of real prices (CPgc), such that the curves for the PPG and CPgc also coincide. In fact, with the loss in the value of money corrected during the Asian financial crisis and later with the Global financial crisis, we may observe that instead of being a period of instability, it would have been a period of price and thus economic stability.

Analyzing performance: This paper argued earlier that with stable prices, economic growth in terms of real output would be sustainable, which we may observe from the curve of real GDP in figure 11. Sustainable economic growth implies price stability, thus we may statistically analyze monetary and price performance in terms of long term stability (average annual change in nominal and real prices), and short term volatility (measured from the standard deviation of the annual changes in prices) and by weighing both stability and volatility equally, we can then rank the performance of the gold and *fiat* standards as reflected in table 5.

Table 5: Long-term price stability and short-term volatility, 1970-2014

1970-2014	Long-Term Stability	Short-Term Volatility	Stability Rank
Nominal prices	7.8%	7.6%	2
Real prices	0.7%	10.7%	1

Our analysis reveals that real prices in terms of gold clearly perform better than nominal prices expressed in RM under a *fiat* standard. In terms of long-term price stability, when expressed in

terms of gold, the average annual change in real prices is only 0.7%, as compared to the inflationary *fiat* standard of 7.8%.

Analyzing credit data in relation to growth: This research has not just identified that there is an exponential decay in the store of value function of the RM as a medium of exchange, but it has also demonstrated that the cash ratio provide cover for the cumulative aggregate deposit and lending rates of interest to exponentially increasing the supply of money, in relation to demand, the effect of which is higher prices. By paying these higher prices, a society must lower its standard of living and transfer its wealth to the banking system. The resource cost of *fiat* money is the total interest payable to the banking sector. A debt-based monetary system expanding at the compound interest rate is unrepayable, and we may observe in figure 12 this exponential increase in total debt of Malaysia during the period of the *fiat* standard. As identified earlier, the RM is 99.7% backed by debt. With regard to Malaysia's total credit to the non-financial sector, in other words total government and non-government debt, according to latest BIS data[74], the debt to GDP ratio by the end of 2014 was a very troubling 185.7% (RM2,054.8 Bn : RM1,106.6 Bn). The total debt position of Malaysia is summarized in table 6. As a percentage of GDP, the government's external debt is 15.2%. Malaysia has witnessed a significant weakening in its exchange rate over the past year, which would increase exposure to external debt denominated in foreign currencies. Even interest on *ringgit* denominated external debt would be captured as an outflow in the current account on the balance of payments. However, when we consider the overall debt to GDP position, we realize that the main area of concern is private sector debt at 133% of GDP, rather than the public sector at 52.7% of GDP.

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[74] Bank of International Settlements, "BIS total credit statistics", updated Sept. 2015, accessed on 15 Sept. 2015, www.bis.org/statistics/totcredit.htm
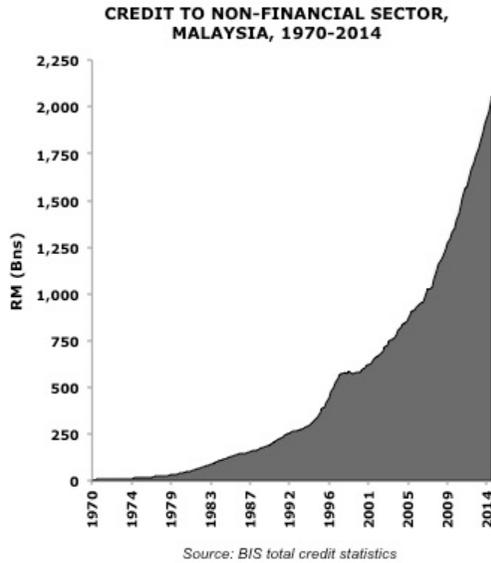
Fig.12: Total debt, Malaysia, 1970-2014

Table 6: Total Debt, Malaysia, as at 31 Dec. 2014 (RM Bns)

	Domestic	% of GDP	**External**	% of GDP	**Total**	% of GDP
Government	414.7	37.5	168.2	15.2	582.8	52.7
Non-Government	892.6	80.6	579.3	52.4	1472.0	133.0
Total	1307.3	118.1	747.5	67.6	2054.8	185.7

Conclusion

We have demonstrated in our findings that a monetary theory of value produces genuine price stability. It should be emphasized that prices should vary in order to efficiently organize an economy. However, when the value of money (VM) is free of any monetary management, society is left with the value of goods and services which is a function of supply and demand, such that monetary demand follows the real economy rather than the monetary sector

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dominating as in the case of capitalism. As PY grows, the stock of money must reflect the value of PY as if it were a mirror. The mirror cannot be bought and sold for a price like any other commodity, for it is an instrument of transfer only. Its sole purpose is to transfer or reflect the equivalent counter-value (*iwad*) of goods and services. Man is driven to produce to acquire ownership from the benefits of production in order to satisfy his basic needs. The price of an asset is ratio of the demand and supply of goods and services as the numerator and the demand and supply of money as the denominator: the denominator should be as constant as possible for income to be distributed fairly, without monetary distortion. P and Y should vary according to domestic and international trade, therefore the quantity of money will also vary with trade, but the quality of money must reflect a high, not a low, intrinsic value. The reality is that the quantity of money does not require management. Trade is the equalizer.

During the early Abbasid caliphate, the *dinar* was not only adopted as an international trade coin, but was even imitated from a *dinar* of the Abbasid Caliph al-Mansur in 774 by King Offa from the kingdom of Mercia (southern England): not because the English or their King was a Muslim, but because they respected and trusted the *dinar* as a high quality medium of exchange that held its store of value and was accepted as a medium of exchange, as a unit of account and as a standard for deferred payment, anywhere in the world at that time. Currently, *fiat* money has been imposed on us as legal tender, but no one trusts its value, and increasingly, neither the institutions that issue it. The monetary theory of value involves the value, supply and demand for money, and the VM specifically is a function of both quality and quantity, with an emphasis on quality. Money can be endogenous without any control over supply. Let trade be conducted free of any monetary monopoly, manipulation or management, and free of financial intermediation. The current fractional reserve banking system has been the cause of the mal-distribution of wealth. Society has to lower its standard of living, as wealth is confiscated through inflation and transferred to the combined profit and loss statements of the fractional reserve banking system in the form of interest payments.

As mentioned in the introduction of our findings, Malaysia has a dual banking system, and yet the findings of this research seem to confirm other papers that challenge altogether the ability of the fractional reserve banking model to attain the objectives of the *shariah*[75], especially in terms of protection of wealth (*hafiz al-mal*), given its confiscation and transfer through inflation[76]. Hence, this would have to include even Islamic banks whose market share of financing assets has steadily increased to 20% [77] and are also engaged in creating debt involving the time value of money or time preference theory of interest embedded in deferred credit sales. Therefore, they must share in the responsibility of a decline in the domestic purchasing power of the *ringgit* and increased prices. The fractional reserve *fiat* standard, in entirety, is not functioning in the public interest (*maslahah*), as our evidence has shown, but is clearly harmful (*al-darar*). Indeed, linkages between debt, money supply and inflation have been noticed not just in Malaysia, but in other jurisdictions as well[78]. In terms of the monetary sector, the *fiat* standard is increasingly unsustainable, since the balance sheets of all *fiat* currencies reveal that they are almost entirely backed by the assets (IOUs) of the banking system. Therefore, the resource cost of using *fiat* money is the total interest charged for the privilege of using paper and deposit money as the medium of exchange, even though their cost of production is zero: this is capitalist profit maximization *in extremis*. In terms of the real economy, it has been suggested that GDP is a measure of economic well-being and a measure of total economic activity[79]. It is neither: for total economic activity to be

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[75] Ahamed K. M. Meera and Moussa Larbani, "Part 1: The Seingniorage of Fiat Money and the Maqasid Al-Shari'ah: The Unattainable of the Maqasid", *Humanomics*, Vol. 22, Issue 1, (2006), 17-33

[76] Ahmed K. M. Meera, Moussa Larbani, "Ownership Effects of Fractional Reserve Banking: An Islamic Perspective". *Humanomics*. Vol. 25, Issue 2, (2009), 101-116

[77] BNM Financial Institutions Statistical System

[78] Farrah Yasmin, Sadia Bibi, Sadia Atta and Madeeha Javed, "Money Supply, Government Borrowing and Inflation Nexus: the Case of Pakistan". *Middle-East Journal of Scientific Research*, 18 (8), (2013), 1184-1191

[79] Fadli F. A. H. Asari, Zuraida Mohamad, Teh Sofia Alias, Norazidah Shamsudin, Nurul Syuhada Boharuddin and Kamaruzaman Jusoff. "Multivariate Time Series Analysis on Correlation Between Inflation Rate and Employment Rate with Gross

considered, intermediate goods and services should be included, rather than finished products alone in order to better anticipate business cycles and related economic policy prescriptions, as a statistical measure in nominal terms, it has disguised the role of interest in the money supply and the associated reduced standard of living, such that increases in real GDP have also revealed increased income inequality[80].

Earlier we postulated that all modern mainstream monetary theories have failed, even though we selected the quantity theory in particular, since in our earlier review we analyzed that these theories are in reality similar. In the 1970s it might have been Keynes, in the 1980s it might have been Friedman, and since the 1990s and more recently, Keynes is back in favor, in order to address the latest financial crisis. However, throughout this period, prices have escalated exponentially, and wealth has been transferred inexorably. Even the Federal Reserve admits that wealth is transferred to the issuer as a result of the over-issuance of currency, and is confiscated through inflation: "the decrease in purchasing power incurred by holders of money due to inflation imparts gains to the issuers of money"[81]. Well before his appointment as Chairman of the Federal Reserve, Alan Greenspan as an economist in 1966, mused over a gold standard, equating it with economic freedom, although his sentiments equally apply to a gold or silver commodity standard, in the absence of which, "The abandonment of the gold standard made it possible…to use the banking system as a means to an unlimited expansion of credit… There is no way to protect savings from confiscation through inflation. There is no safe store of value…no way for the owners of wealth to protect themselves… [it] is simply a

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Domestic Product". *World Applied Science Journal* 12 (Special Issue on Bolstering Economic Sustainability), (2011), 61-66

[80] Nafiseh Baligh and Khosrow Piraee, "Financial Development and Income Inequality Relationship in Iran". *Middle-East Journal of Scientific Research* 13 (Special Issue of Economics), (2013), 56-64

[81] Charlotte E. Ruebling, "Financing Government Through Monetary Expansion and Inflation", Federal Reserve Bank of St. Louis, *Review*, (Feb, 1975), 22

scheme for the confiscation of wealth. Gold stands in the way of this insidious process. It stands as a protector of property rights"[82].

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[82] Alan Greenspan, "Gold and Economic Freedom". *The Objectivist,* (1966), reprinted in Ayn Rand, *Capitalism: The Unknown Ideal*, (New York: New American Library, 1966), 101-107, accessed on 15 September 2015, www.321gold.com/fed/greenspan/1966.html