

## **THE 33% PUBLIC MONEY SYSTEM for Economic Growth and Deficit, Debt, Unemployment and Poverty Reduction**

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This white paper is devoted to clarification of Model Legislation (shown in Appendix 1) that puts the US federal government back in the driver's seat with respect to the money creation process. The Revolutionary War was won with government created money (continentals). The Civil War was won with government created money (US Notes). Now it is time to save the Union again through the reinstatement of debt free government issued money in a new electronic form. We envisage a HYBRID MONEY SYSTEM in which the US government partners with the Federal Reserve System (FRS) in the money creation and control functions of government. Instead of having all money originate as loans from the Federal Reserve Banks or the commercial banks, a third option, the **Public Money Option**, is created in which the government originates a substantial amount of new money without debt by simply augmenting its own bank balance and then spending that money into existence in the payments for a variety of public interest projects that will boost the rate of GDP growth. In contrast to the AMI approach, (see [www.monetary.org](http://www.monetary.org)) these reforms do not alter the Federal Reserve System, but they do start the flow of debt free government issued money in electronic form, called Electronic Public Money or EPM for short, and move the inflation control responsibility to a new public interest body set up for that purpose, which we call the Monetary Creation and Control Authority.

We envision a seven year transition plan in which the percentage of the money supply created by public debt free means is gradually increased from virtually 0% to about 33% of total money supply. This leaves 67% of the money supply still in the hands of the commercial banking industry, created on the basis of debt using the fractional reserve system. In this situation the ratio of bank money to public money would be 2 to 1.

The broad outlines of the new plan are given next in a relatively brief survey format, followed by a more detailed description of each title in the proposed legislation that is attached as Appendix 1. Appendix 2 gives the derivation of the new Inflation Prevention Inequality that leads to the critical REAL OUTPUT Standard for money.

**Model Legislation Overview:** The ten titles of the draft legislation proposed here accomplish a number of carefully coordinated objectives.

Title I: Authorization for creation and spending of government created debt-free ELECTRONIC Public Money (EPM) to partially replace bond selling by the Treasury Department for funding of federal budgets;

Title II: Creation of the MONETARY CREATION and CONTROL AUTHORITY (MCCA) as a public interest body dealing with inflation prevention and the monetary aggregate targeting portion of monetary policy, with reserve requirement policy, and selection of Infrastructure projects to be funded with EPM;

Title III: Proactive GDP investment expenditures funded with EPM aimed at closing the GDP gap;

Title IV: Replacement of Federal Reserve Bank credit with EPM on a limited basis to achieve deficit reduction sufficient to set aside the Budget Sequestration cuts mandated by the Budget Control Act of 2011;

Title V: Elimination of Intragovernmental Debt through equal monthly installments;

Title VI: Creation of the Office of Full Employment supporting job growth for veterans, homeless and the formerly incarcerated;

Title VII: Creation of the Office of Poverty Alleviation supporting those suffering from poverty

Title VIII: Creation of the Office of Conflict Resolution to resolve conflicts over pipeline routings, inner city policing, and mortgage foreclosure conflicts harmoniously with win-win solutions where possible;

Title IX: Targeted GAO audits of Surplus Account transactions and stockholder names and amounts at the branch banks of the Federal Reserve System;

Title X: Preparation and dissemination of Monetary Histories of the American, Canadian (1930-1980) and Guernsey/Jersey Island (1815-present) experiences with government issued debt-free money.

The principal objectives achieved by this legislation will be to

1. Set aside the harmful and indiscriminant budget sequestration provisions of the Budget Control Act of 2011;
2. Boost GDP growth rates to levels commensurate with historical averages in previous years;
3. Stop the growth in the National Debt, and start it on a long downward trend line;
4. Create the Monetary Creation and Control Authority (MCCA) for determining the amounts and allocations of EPM, and for limiting aggregate totals so as to prevent inflation;
5. Create the Office of Full employment to spur job growth for veterans, homeless, and formerly incarcerated;
6. Create the Office of Poverty Alleviation to provide hunger relief and upward job mobility among the poor;
7. Create the Office of Conflict Resolution to review and fund public interest projects aimed at resolving conflict situations in society in such a way as to restore harmony and boost GDP;
8. Gain access to privately held data about the FRS that will facilitate later phases of monetary reform, and potentially expose sources of unused money that could be put towards reducing the federal deficit and the national debt;
9. Create educational materials for Congress and the public that will enable a better understanding of the historical role that government created money has had to good effect in the past.

For this initial phase of monetary reform, it is clear that the reissuing of US Notes as paper money does not need to come into play at all. Since paper money plays such a small part of the money supply (roughly 10% of M2), the objectives of the proposed legislation can be achieved without any new US Notes at all. Printing and recirculation of US Notes could be renewed at some future time, but would constitute an unneeded disruptive change at the present time. For the moment, it is ELECTRONIC PUBLIC MONEY (EPM) that is needed, not US Notes.

## HOW IS EPM CREATED?

The beauty of EPM is that the creation process is a few lines of code, and therefore zero cost, and there is no perceptible change to anyone in the public or in the banking sector. They are invisible credits in a monetary account, pure and simple. At 12:01am every night (or at other times as specified by the MCCA) the principal balance of the US Treasury Department will be augmented by an amount  $\Delta M$  that is set by the Monetary Creation and Control Authority. For example, if  $\Delta M$  were set to \$1Billion then in a year, the money supply would have been increased by \$365Billion in government money (monetary base) and some additional amount that the banks create based on the reserves thus generated through the operation of the fractional reserve system. So since the M2/MB ratio is about 5.5, \$365Billion of EPM would become about \$2Trillion increase in M2 over the year. However, only the original \$365 billion would be available to the US Treasury to spend on budget items in the federal budget, and in particular, it could be used to reduce the budget deficit by exactly that amount, which would mean a deficit reduction of \$365 billion (i.e. the sale of US Bonds could be reduced by \$365Billion because of the inflow of EPM during the year). This amount of budget deficit reduction over a ten-year period is over three times the amount needed to set aside the harmful "budget sequestration" cuts mandated by the Budget Control Act of 2011. This means that 2/3 of the EPM injection could be used for infrastructure, military, and other budgets hurting from budget sequestration at present, and still have enough budget reduction to set aside the sequestration cuts. This is the main purpose of the present transition plan. If the Monetary Creation and Control Authority meets quarterly, the size of  $\Delta M$  could be adjusted quarterly in response to current economic data and updated model forecasts.

## WHERE DOES EPM COME FROM?

In thinking about this question, which is bound to come up from grade school and high school students, the following explanations can be given. The simple answer is that it comes from a few lines of code that a programmer writes that adds  $\Delta M$  to the Treasury Department balance at 12:01am every day. Hence it is "created out of nothing" by the computer controlling the account that holds the government balance.

But to give a deeper understanding of the process, I like to describe this "balance augmentation" as a DEPOSIT BY UNCLE SAM which serves as a GROWTH DIVIDEND for the American people based on the increased REAL OUTPUT of the economy that they labor in. As population increases, and productivity increases as well, the total real output of the economy grows over time. This requires a commensurate increase in the money supply in order to support the increased volume of economic buy/sell transactions that are made in the economy at the same price levels. Hence the source of the new EPM injections is really the output of the people themselves, that is to say, the people, through their increased production, create the conditions which enable Uncle Sam to reward them through a debt free, interest free, expansion of the money supply (the "growth dividend"), which is sized at a level which will have a zero impact on the CPI, the Consumer Price Index. A formula for determining the size of the Growth Dividend "deposits" is derived in appendix 2 by means of some elementary operations on the Money Exchange Equation of Professor Irving Fisher, one of America's greatest Mathematical Economists of the 20<sup>th</sup> century. We call this the INFLATION PREVENTION INEQUALITY because it provides an upper bound on  $\Delta M$  that is consistent with keeping the CPI constant. This is how the value of the dollar is preserved, by keeping the CPI constant. When the constitution speaks of "regulating the value thereof" in modern terms that means regulating CPI. And if it is desired to keep the value of the dollar constant, that means keeping CPI constant. It will be the job of the MCCA to apply the Inflation Prevention Inequality to current economic data to find out what the upper bound on  $\Delta M$  is, and to adjust that quarterly in the computer program that creates EPM daily throughout the next quarter.

It should be pointed out that EPM can also be issued in a proactive way when it is allocated to GDP boosting activities such as infrastructure, vocational training, or clean energy. We call this ***proactive GDP investments***, and these create the real output that backs the money after the fact. For this reason, these issues are also seen as being noninflationary.

By these means, EPM can become a flow of income to the US Treasury which can be used for any and all budget items in the federal budget allocation. The question of how to allocate it is separate and distinct from the question about how large  $\Delta M$  should be. As we have seen, the size of  $\Delta M$  is determined on the basis of how fast the economic output is growing, and what array of GDP boosting projects are deemed advisable and noninflationary. The allocation of the accumulation of those “growth dividends” is a budgetary question that can be treated the same as if the increased Treasury income had come from increased taxes. The sizing of  $\Delta M$  is determined by the MCCA, the budget allocation is determined by Congress with inputs from the CBO and other related agencies.

### **More details on the Model Legislation**

The main task of the proposed reforms is to initiate the flow of EPM into the government’s primary bank account (nightly at 12:01am for example). Under the attached legislation, there are four main purposes for the EPM flow. Firstly, the EPM is to be used as ***proactive GDP investment*** for infrastructure, vocational training and science and technology related projects aimed at accelerating the GDP growth rate and closing the GDP gap. Secondly, EPM is to be issued as a replacement for the issuing of Treasury Securities for deficit reduction of such magnitude that the budget sequestration cuts mandated by the Budget Control Act of 2011 can be set aside. Thirdly, the EPM is to be used to fund the restoral of budgets to their original pre-sequestration levels. And lastly, EPM will be used to resolve conflict situations such as oil pipeline routings and Flint Michigan water pollution issues, as well as for inner city conflicts regarding the police and the communities they serve, and to address the home foreclosure problem.

Since it will take a while to populate the Monetary Creation and Control Authority, it will be necessary in this bill to stipulate that the EPM injections be counterbalanced by reductions in the sale of US BONDS so that the net inflationary impact will be reasonably close to 0. The impact of EPM issues and US Bond issues on the money supply are not the same, but determining the value of the appropriate proportionality constant would require a research project conducted by the MCCA, so we make the simplifying assumption that a one-for-one substitution will have negligible net inflationary pressure during the first year. This could be adjusted by the MCCA as needed going forward after the first year.

Once the MCCA is populated and up and running, the members, based on expert analysis and advice and input from their staff and the ex-officio members, would take over the control of these two rates (EPM creation and US Bond sales). But by using the one-for-one substitution rule for the first year, the EPM flow can begin immediately upon passage of the reform legislation, without fear of inflation pressures, even before the MCCA is set up to carry the ball forward.

A draft of the monetary reform legislation is attached as Appendix 1 to this paper. It will be seen there that there are several important provisions that are specified to lay the foundation for potential subsequent phases of monetary reform:

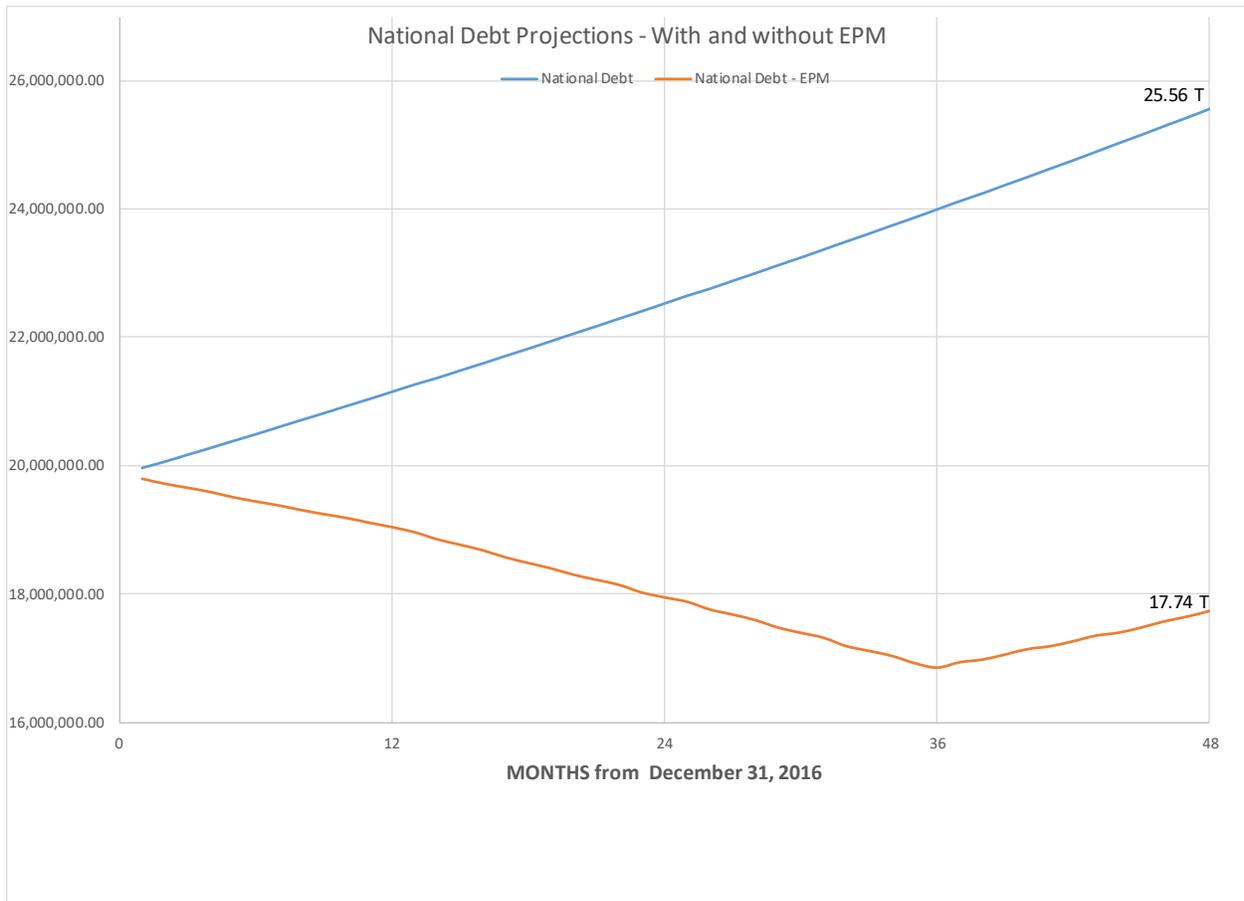
- EPM creation for the purpose of proactive GDP investments aimed at closing the GDP gap
- EPM creation for the purpose of reducing federal budget deficits so as to cancel the budget sequestration resulting from the Budget Control Act of 2011;
- EPM creation for the purpose of restoring cut budgets to their former levels after budget sequestration has been canceled.
- EPM creation for the purpose of eliminating Intragovernmental debt;
- EPM creation for the Office of Full Employment, focusing on veterans, homeless, and formerly incarcerated
- EPM creation for the Office for Poverty Alleviation
- EMP creation for the Office for Conflict Resolution to address issues of pipeline routing, big city policing, and inner-city community development and integration;
- Creation of the Monetary Creation and Control Authority to limit EPM to prevent inflation and protect the value of the dollar;
- Partial audit of the Fed banks focusing on two particular issues: complete listing of stock holders and amount of holdings by the stockholders of the 12 Federal Reserve Banks, and a complete accounting of income and expense of the Surplus Account provided to the Fed to hold its “profits” or accumulated earnings.
- Commissioning of three monetary histories of countries that have had favorable experience with debt free Public Money: one for the United States (including pre-revolutionary, revolutionary, and civil war periods), one covering Guernsey/Jersey Island experience from 1815 to 2015, and the other for Canada from 1940 to 1980; (let’s learn from experience where the Public Money experience has been successful in the past);

Although the main purpose of the present legislation is to provide a proactive GDP investment aimed at closing the GDP gap (with commensurate increases in employment and employee pay), an important secondary purpose is to set aside the harmful budget sequestration cuts mandated by the Budget Control Act of 2011. The proactive GDP investments are funded by EPM so they don’t increase the deficit, but they do not decrease the deficit either, at least not in the same time frame. So an additional flow of EPM is generated in the following way.

The money that the Fed uses to buy US Bonds and other Treasury securities is created out of nothing. Hence when those securities mature, the money used to redeem them has to be extinguished. It is the same way with commercial banks. The money created by the Fed and the commercial banks is “temporary money” in the sense that it must be extinguished again when the loan or debt is paid off. They can retain the interest earned, but not the principal. So the idea behind this deficit reduction plan is to replace the money that is extinguished by the Fed upon redemption of a bond or security from the Treasury Department with “permanent money” in the form of EPM in the same amount deposited directly to the Treasury’s account. Since EPM does not have to be paid back to anyone, there is no time constraint on how long it can circulate in the economy.

By computing a growth rate from the historical record from the last six years of the Obama administration (see the Treasury Direct page for The National Debt to the Penny, <http://www.treasurydirect.gov/NP/debt/current>), a projection of future debts growing in an exponential way at about 6.5% per year can be made for the next few years. In comparison to this “do nothing” forecast, a projection can be made showing the impact of the monthly EPM creation amounts directed at deficit or debt reduction goals under the proposed legislation.

In order to see the impact of EPM issues on the national debt over time, we have created a spreadsheet analysis of the implications of Titles IV and V of the proposed legislation on the national debt over a four-year horizon by month (i.e. 48 months) beginning January 2017 and ending December 2020. The time structure of the Fed’s Treasury security holdings is shown in the T-notes and T-bonds table at [https://www.newyorkfed.org/markets/soma/sysopen\\_accholdings.html](https://www.newyorkfed.org/markets/soma/sysopen_accholdings.html). Monthly totals of securities maturing each month were computed, and that amount of EPM was created to offset the cost of “redeeming” that debt that has been retired. Additionally, Intragovernmental debt of about \$5.34 Trillion is retired in equal monthly installments over 36 months. The resulting debt forecasts are depicted in the following chart.



The horizontal axis shows number of months after December 31, 2016, from 1 to 48 representing four years of time. The vertical axis shows the total national debt as given by the TreasuryDirect page for National Debt to the Penny. The blue line shows the default future without any EPM creation by the government, projected on the basis a continuation of the national debt growth rate from Sept 30, 2010 to Sept 30, 2016. But with EPM creation following the progressive schedule given in the draft legislation, the growth rate of national debt decreases during the first thirty-six months until its minimum value is obtained on Dec 31, 2019 at \$ 16.86 Trillion. Then, because the Intragovernmental debt payments stop during the last year of the projection, debt starts creeping up again to a final value of \$17.7 Trillion. In order to keep the debt trajectory on a downward path, subsequent legislation or actions of the MCCA

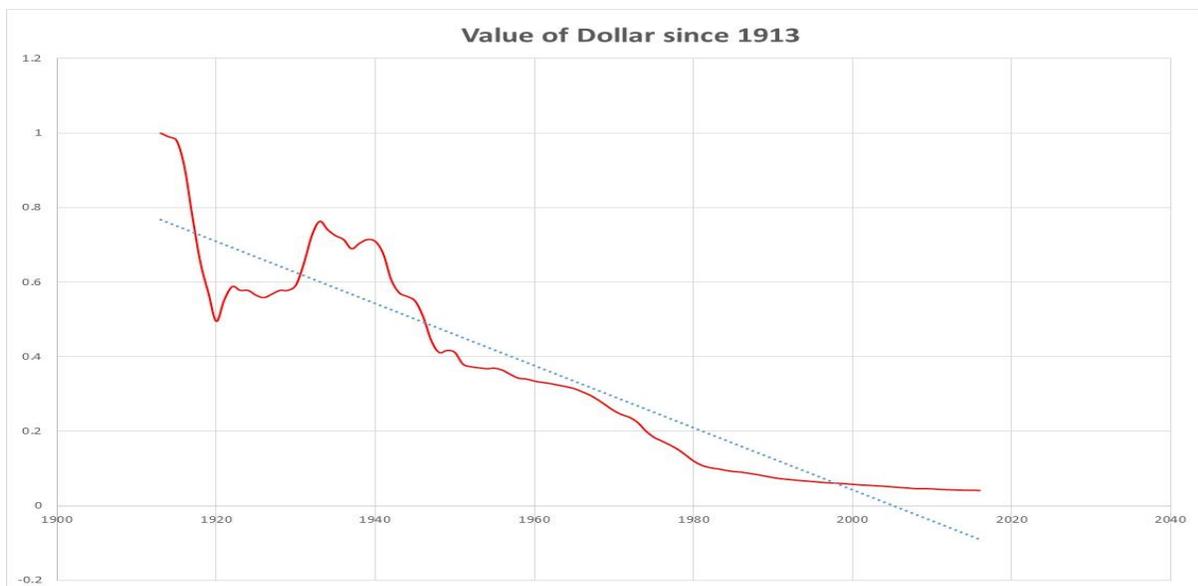
could pay off other components of national debt on a monthly basis after January 1, 2020, such as early redemption of Federal Reserve Treasury Security holdings, or payments on foreign debts.

## Article 1, Section 8, Clause 5

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To coin Money, regulate the Value thereof, and of foreign Coin, and fix the Standard of Weights and Measures;

The following chart shows how poor a job the FRS has done in preserving the value of the dollar over the 100 years since its creation.



This is the time history of the value of the dollar under the Federal Reserve System. The dollar now buys what cost 4.14 cents in 1913. The value of the dollar has been cut by almost 25 times. Given their recent experience with Continental Currency, we believe the intent of the cited clause of the US Constitution is and should be that the value of the dollar be regulated in such a way as to preserve its buying power at a nearly constant level. This can best be done with a public interest group empowered with the tools and technology developed by NASA and others for the exploration of space, including but not limited to the mathematical theory of stochastic optimal control. Preserving the buying power of the dollar will be one of the chief responsibilities of the new Monetary Creation and Control Authority under the monetary system transition plan presented here. Building a control system to regulate the value of the dollar should be vastly simpler than getting men to the moon and back. Obviously, setting a 2% inflation rate target is not the way to preserve the value of the dollar. The new Monetary Creation and Control Authority will do better, very much better.

## APPENDIX

### DERIVATION OF THE NEW INFLATION PREVENTION INEQUALITY

The fundamental money exchange equation (presented first by Professor Irving Fisher of Yale University) states that  $MV = PY$  where  $M$  = money supply,  $V$  = money velocity,  $P$  = consumer price index, and  $Y$  = real GDP. The left side of the equation is the total money received in all transactions in the economy, and the right hand side ( $PY$ ) is the nominal GDP for the economy. So  $Y = GDP/P$  where  $P$  is sometimes referred to as the GDP implicit deflator or inflation indicator variable. Since the amount spent and the amount received is the same in each individual transaction, the totals across the economy must be the same also.

Modern economists have pointed out, however, that the right hand side of the equation is incomplete, leaving out all the non-GNP related expenditures having mainly to do with financial asset acquisitions like buying a CD, stocks, bonds, and mutual fund positions. These are all financial transactions that are included on the left hand side of the equation, but are missing from the right hand side. To rectify this situation, one can simply add on a term that represents the totality of non-GDP transactions which we call  $Y_a$ . Hence the corrected tautology becomes  $MV = PY + Y_a$  where the “a” subscript stands for financial asset related transactions, including all non-GDP transactions.

For the analysis that follows, it is desirable to change this additive correction into a multiplicative one. Hence we define a “fudge factor”  $K = (PY + Y_a)/PY$  so that the tautology becomes  $MV = KPY$  where “K” is the scale factor (bigger than 1) that increases  $PY$  until it just equals  $PY + Y_a$ . For example, if  $PY$  and  $Y_a$  were the same value, then  $K$  would be 2.

Some authors have characterized this equation (or its incorrect predecessor) as being static without realizing that the year time frame is actually a sliding window of time so that in fact all five of the included variables vary over time. One can emphasize this fact by making each variable a function of time, in which case the equation becomes  $M(t)V(t) = K(t)P(t)Y(t)$ .

Taking natural logarithms converts products into sums, so one has

$$\ln(M(t)) + \ln(V(t)) = \ln(K(t)) + \ln(P(t)) + \ln(Y(t)).$$

Then differentiating each term with respect to time one has

$$\left(\frac{\dot{M}}{M}\right) + \left(\frac{\dot{V}}{V}\right) = \left(\frac{\dot{K}}{K}\right) + \left(\frac{\dot{P}}{P}\right) + \left(\frac{\dot{Y}}{Y}\right)$$

where the dot over the numerator of each ratio indicates the time derivative of the quantity in the denominator of each ratio. Each is a relative rate of change for each variable, and by multiplying by 100,

$$m = 100\dot{M}/M \quad v = 100\dot{V}/V \quad k = 100\dot{K}/K \quad p = 100\dot{P}/P \quad y = 100\dot{Y}/Y$$

each term becomes the percentage rate of change in each variable. Hence we define

In this case the dynamic money exchange equation becomes  $m + v = k + p + y$ . It is quite convenient for analysis that this equation takes a linear form, and is stated in terms of percentage rates of change for each variable. From this simple equation, the inflation prevention inequality follows from the following elementary algebraic manipulations. Suppose the chosen tolerable rate of inflation, which we call the

inflation tolerance, is  $l_0$  (currently 2% although stable prices would imply 0%). Since  $p$  is the inflation rate in percentage terms, the government would have to control the money supply to grow in such a way that  $p = m + v - k - y \leq l_0$  or isolating  $m$  on the left hand side, we obtain the

**NEW INFLATION PREVENTION INEQUALITY**

$$m \leq k + y - v + l_0 .$$

This New Inflation Prevention Inequality (NIPI) gives the upper bound on money supply growth rate that can be allowed without precipitating an inflation more than the inflation tolerance  $l_0$ . In the future, it is this relationship (concurrently with other dynamic macroeconomic models) that can be used to prevent inflation under debt free sovereign money, issued without debt into the economy, rather than the disincentive of debit with interest obligation which is used to limit excessive monetary growth under debt based monetary systems such as the Federal Reserve System. With this inequality firmly in hand, the government can assume its money creation functions again without fear of inflation.

At this point any self-respecting monetary reformer is likely to utter an involuntary objection along the following lines. "Wait a second, if the banks create all the money, how can the government possibly control the monetary growth rate." Excellent point. Of course, if monetary based is not under control of government, and bank lending is not either, then the government is completely out of the picture and the country is left at the mercy of the banking fraternity. This is why the Great Depression in the 1930's and why so many boom and bust cycles have occurred since then. But suppose for a moment that reforms were put in place giving the government complete control of the creation of monetary base, including coins, paper money and electronic public money (EPM). For the purposes of this discussion, we shall take M2 as the measure of the money supply, although other choices are possible. The analysis is the same in each case. We use MB as the symbol for monetary base, and M2M as the M2 money multiplier, a quantity determined by the commercial banks based on how much excess reserves they hold. We then have

$$M2 = MB * M2M, \text{ so } \ln(M2) = \ln(MB) + \ln(M2M) \text{ and } m2 = mb + m2m.$$

where MB is controlled by the government and M2M is controlled by the aggregate of the commercial banking industry. The lower case letters indicate the percentage growth rate of the corresponding variable in capital letters. The good news is that historically, the plot of M2M over time has been very smooth and continuous so that accurate estimates of M2M and its first time derivative (using spline fits for example) are easily determined to a high degree of accuracy. This being the case, we can substitute  $mb + m2m$  in for  $m$  in the NIPI to get

$$mb \leq k + y - v - m2m + l_0$$

This gives an upper bound on the monetary base growth rate (which government controls) in terms of a number of other growth rates that it does not control. The fact that the government does not control the terms on the right side (except for the tolerance parameter) does not render the inequality useless. All that is required is that the data be available to estimate the growth rates on the right hand side, and this can be done.

## A NEW STANDARD FOR MONEY

In order to impose a zero tolerance on inflation (CPI constant and  $I_0 = 0$ ) under conditions of unchanging monetary velocity and constant K and constant M2M, the NIPI reduces to  $m \leq y$ , which says that the money supply growth rate should not exceed the growth rate of the real output of the economy. From this, one is led to see that the real and true backing for the money in an economy is the real output of the economy itself, taken in an aggregative sense, not based on any one or select few outputs like gold, silver, platinum and the like. The real output of the economy includes ALL GOODS AND SERVICES produced and sold in an economy, and it is this total measure of production (evaluated in constant dollars) that serves as the basis for or the backing of the money supply. Hence the value of the money is based not on what can be obtained in precious metals when turned in at the Treasury Department, rather it is based on what can be bought in the open market with those dollars or whatever the unit might be, that is by its purchasing power. The dollars spent at the grocery store are backed by the grocery bag taken home. The dollars spent on electronic equipment are backed by the very electronics that are purchased. The dollars spent on a haircut are backed by the improved appearance of one's hair resulting from the cut. And so on including all the transactions made everywhere throughout the economy. So when you sum it all up, you get the new

## REAL OUTPUT STANDARD FOR MONEY

THE BACKING FOR MONEY IS THE AGGREGATE OF ALL GOODS AND SERVICES PRODUCED AND SOLD THROUGHOUT THE ENTIRE ECONOMY, that is to say, BY THE REAL OUTPUT OF THE ECONOMY. UNDER CONDITIONS OF CONSTANT MONETARY VELOCITY AND CONSTANT K FACTOR, STABLE PRICES ARE MAINTAINED BY INSURING THAT THE MONETARY GROWTH RATE EQUALS THE REAL OUTPUT GROWTH RATE. IF MONETARY VELOCITY or K IS CHANGING OVER TIME, STABLE PRICES ARE MAINTAINED BY OBSERVING THE NEW INFLATION PREVENTION INEQUALITY.

It is this new standard for money, together with the NIPI, that makes it feasible to restore to the government its money creation role at this time as never before. This money creation function was usurped from government by the private banking industry in 1913 and has been in private hands for over 100 years now. It is time now for the government to assert its powers to create debt-free interest-free money in substantial quantities with commensurate decreases in its borrowing activity using US Bonds and carefully planned increases in its reserve requirements. By doing so, it can save trillions of dollars in unnecessary debt while pumping inflation proofed dollars into infrastructure, clean energy, and education programs that will spur growth rates to double present levels while bringing unemployment down to half their present levels. We will enter a new era of inflation-free economic expansion that will have no end, unless we foolishly let the banks privatize the money creation function again as they did before.

For Comments or Questions, visit [monetaryreform-taskforce.net](http://monetaryreform-taskforce.net) or write [dr.ron45@gmail.com](mailto:dr.ron45@gmail.com)