Attachment 8

Federal Reserve Monetary Intermediation Cost to the American Economy

Direct Issuance (Seigniorage) Monetary Intermediation

M2M[1] (M2 Less Small Time Deposits) Money Stock Basis Assumed

Initial Conditions

Initial conditions would be to take GDP of economy in base year and divide it by itself and call the result 100 and the same for the money stock, take the chosen money stock indicator and divide it by itself and call it 100. Then, one possible way to allocate the productivity increase of the economy back to the economy itself in the most direct, efficient and least costly way would be for any increases in the money stock to be directly credited by the government as interest/Labor Dividend pro rata to the accounts held at the new 100% cash depositories. If the economy grows at a 2% rate then 2% seigniorage interest would be credited to the demand deposit accounts. In recessionary cycles, if any, no interest/Labor Dividend would be paid. In that sense these 100% reserve checking accounts would appear to earn interest/Labor Dividends and be the same as today's fractional reserve checking accounts that are paying effectively no interest in recessionary periods and some interest in expansionary periods. There would be no need for FDIC insurance because the depository would have 100% cash and demand deposits - it would not be possible for such a depository to not have 100% funds on hand to cover any withdrawal situation including up to 100%. Commercial Banks would no longer take demand deposits but could take CDs and make time matched funding loans and lend their own capital and continue to offer other financial services without FDIC Insurance.

Formula If economy declines, no Labor Dividend until fully recovered to avoid inflation.

$$[\%\ \text{Change}\ MS_N] = \frac{[MS_N - MS_{N-1}]}{[MS_{N-1}]} = \frac{\text{Money Stock}_0 \times GDP_N}{\text{Money Stock}_{N-1} \times GDP_0} - 1$$

[Labor Dividend (LD)]

[Seigniorage]

Provided $[GDP_N]$ greater than any previous $[GDP_X]$ in the series 0 to N-1, if not then $[\%\ \text{Change}\ MS_N] = 0\%$

Where

MS =Money Stock/Supply

GDP =Gross Domestic Product, measure of economic performance

N = Year, (period between measurements used)

LD =Labor Dividend [Seigniorage/interest]

Economic (GDP) Performance	**Year/Period (N)** 0	1	2	3	4	5	6	7	8	9	10
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
GDP[2] (End of Year $ Billions)	$13,855.9	$14,477.6	$14,718.6	$14,418.7	$14,964.4	$15,517.9	$16,155.3	$16,691.5	$17,427.6	$18,120.7	$18,624.5
Economy GDP (Begin GDP_{N-1})		100.000	104.487	106.226	104.062	108.000	111.995	116.595	120.465	125.778	130.780
Economy GDP (End GDP_N/GDP_0)	100.000	104.487	106.226	104.062	108.000	111.995	116.595	120.465	125.778	130.780	134.416
% GDP Change (GDP_N/GDP_{N-1} -1)		**4.487%**	**1.664%**	**-2.037%**	**3.784%**	**3.699%**	**4.107%**	**3.319%**	**4.410%**	**3.977%**	**2.780%**
% Change Cumulative (GDP_N/GDP_0 -1)	0.000%	4.487%	6.226%	4.062%	8.000%	11.995%	16.595%	20.465%	25.778%	30.780%	34.416%

Money Stock Growth	**Year/Period (N)** 0	1	2	3	4	5	6	7	8	9	10
Money Stock (Begin 1/1)		100.000	104.487	106.226	106.226	108.000	111.995	116.595	120.465	125.778	130.780
% Change (Period N from GDP% N-1)		4.487%	1.664%	-2.037%	3.784%	3.699%	4.107%	3.319%	4.410%	3.977%	2.780%
% Change Cumulative (∑ MS from 0)		4.487%	6.226%	4.062%	8.000%	11.995%	16.595%	20.465%	25.778%	30.780%	34.416%
Labor Dividend (Year N)[3]		**4.487%**	**1.664%**	**0.000%**	**1.670%**	**3.699%**	**4.107%**	**3.319%**	**4.410%**	**3.977%**	**2.780%**
Money Stock (End)	100.000	104.487	106.226	106.226	108.000	111.995	116.595	120.465	125.778	130.780	134.416
Labor Div Cumulative (MS_N/MS_0 - 1	0.000%	4.487%	6.226%	6.226%	8.000%	11.995%	16.595%	20.465%	25.778%	30.780%	34.416%
Money Stock (LD Model) (Begin)		$5,865.6	$6,128.8	$6,230.8	$6,230.8	$6,334.9	$6,569.2	$6,839.0	$7,066.0	$7,377.6	$7,671.0
Labor Dividend (Year/Period N)		**$263.2**	**$102.0**	**$0.0**	**$104.1**	**$234.3**	**$269.8**	**$227.0**	**$311.6**	**$293.4**	**$213.3**
Money Stock (LD Model) (End)	$5,865.6	$6,128.8	$6,230.8	$6,230.8	$6,334.9	$6,569.2	$6,839.0	$7,066.0	$7,377.6	$7,671.0	$7,884.3
Money Stock (M2M Actual)	$5,865.6	$6,199.5	$6,809.7	$7,289.0	$7,920.0	$8,984.0	$9,858.8	$10,528.9	$11,231.3	$12,062.7	$12,927.6
Variance (with LD Model)	Over / (Under)	1.2%	9.3%	17.0%	25.0%	36.8%	44.2%	49.0%	52.2%	57.3%	64.0%

Money Stock (LD Model)/GDP Ratio	100.0%	100.0%	100.0%	102.1%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Variance	0.0%	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Notes/Sources

1-M2M Money Stock data ($ Billions, Not Seasonally Adjusted) from St. Louis Fed at
http://research.stlouisfed.org/fred2/series/M2MNS Last Updated 11/1/2017

2-GDP numbers ($ Billions, End of Year) from St. Louis Fed economic data at
https://fred.stlouisfed.org/series/GDPA Last Updated 10/27/2017

3-Also known as Seigniorage. It is percent (%) increase in money stock for period N, provided the economy has total net positive growth above all previously paid Labor Dividends. Seigniorage money supply expansions would be paid like interest, direct deposited into depository account holders accounts on a pro rata basis.