European Central Bank Monetary Intermediation Cost
Direct Issuance and First Use (Seigniorage) Money Supply Intermediation to Eurozone People (Estimated)
Euro €M1[1] 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/Labour Dividend pro rata to the accounts held at the new 100% cash depositories. In theory if the economy grows at a 2% rate then 2% interest would be credited to the demand deposit accounts. In recessionary cycles, if any, no interest/Labour Dividend would be paid. In that sense these 100% reserve checking accounts would appear to earn interest/Labour 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 deposit insurance because the depository would have 100% cash and demand deposits - it would not be possible for such a depository to not have 100% fund 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 government sponsored Insurance.

Formula If economy decline, no Labor Dividend until fully recovered to avoid inflation. **Where**

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

[Labour Dividend (LD)]

[Seigniorage]

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

MS = Money Stock (M1 "Narrow Money" Used)
GDP = Gross Domestic Product, measure of economic performance
N = Year, (period between measurements used)
LD = Labour Dividend [Seigniorage or Interest]

I. Economic (GDP) Performance

Year/Period (N)	0	1	2	3	4	5	6	7	8	9	10
Year	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
GDP Euro 17 Actual[2] (€ Billions)	€7,084.67	€7,330.76	€7,546.90	€7,860.38	€8,145.51	€8,565.09	€9,030.42	€9,244.49	€8,923.51	€9,180.96	€9,425.32
Economy GDP (Begin GDP_{N-1})		100.000	103.474	106.524	110.949	114.974	120.896	127.464	130.486	125.955	129.589
Economy GDP (End GDP_N/GDP_0)	100.000	103.474	106.524	110.949	114.974	120.896	127.464	130.486	125.955	129.589	133.038
% GDP Change (GDP_N/GDP_{N-1} -1)		3.474%	2.948%	4.154%	3.627%	5.151%	5.433%	2.371%	-3.472%	2.885%	2.662%
% Change Cumulative (GDP_N/GDP_0 -1)	0.000%	3.474%	6.524%	10.949%	14.974%	20.896%	27.464%	30.486%	25.955%	29.589%	33.038%

II. Money Stock Growth

	0	1	2	3	4	5	6	7	8	9	10
Year	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Money Stock (Begin 1/1)		100.000	103.474	106.524	110.949	114.974	120.896	127.464	130.486	130.486	130.486
% Change (Period N from GDP% N-1)		3.474%	2.948%	4.154%	3.627%	5.151%	5.433%	2.371%	-3.472%	2.885%	2.662%
% Change Cumulative (∑ MS from 0)		3.474%	6.524%	10.949%	14.974%	20.896%	27.464%	30.486%	25.955%	29.589%	33.038%
Labour Dividend(Year N)[3]		3.474%	2.948%	4.154%	3.627%	5.151%	5.433%	2.371%	0.000%	0.000%	1.956%
Money Stock (End)	100.000	103.474	106.524	110.949	114.974	120.896	127.464	130.486	130.486	130.486	133.038
Labour Div Cumulative (MS_N/MS_0 - 1)	0.000%	3.474%	6.524%	10.949%	14.974%	20.896%	27.464%	30.486%	30.486%	30.486%	33.038%
Money Stock (LD Model) (Begin)		€2,279.0	€2,358.2	€2,427.7	€2,528.5	€2,620.3	€2,755.2	€2,904.9	€2,973.8	€2,973.8	€2,973.8
Labour Dividend (Period N)[4]		€79.2	€69.5	€100.8	€91.7	€135.0	€149.7	€68.9	€0.0	€0.0	€58.2
Money Stock (LD Model) (End)[4]	€2,279.0	€2,358.2	€2,427.7	€2,528.5	€2,620.3	€2,755.2	€2,904.9	€2,973.8	€2,973.8	€2,973.8	€3,031.9
Money Stock (€M1 Actual)[4]	€2,279.0	€2,499.4	€2,727.1	€2,948.9	€3,482.1	€3,758.6	€3,901.3	€4,035.7	€4,556.2	€4,750.8	€4,856.5
Variance (with LD Model)	Over / (Under)	6.0%	12.3%	16.6%	32.9%	36.4%	34.3%	35.7%	53.2%	59.8%	60.2%
Money Stock (LD Model)/GDP Ratio	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	103.6%	100.7%	100.0%
Variance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	0.7%	0.0%

Notes/Sources

1-M1 Money Stock from ECB "Historical monetary statistics" at   https://stats.ecb.europa.eu/stats/download/bsi_ma_historical/bsi_ma_historical.zip   (TEURO.01_c1)

2-GDP (Euro 17) from eurostat, GDP at market prices at   http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tec00001&plugin=1   (tec00001)

3-Also known as Seigniorage. It is percent (%) increase in the money stock for the period, provided the economy has net positive growth above previously paid Labour Dividends.

4-Money Stock M1 in Euro (€) Billions.

5-M1 (Narrow money) includes currency, i.e. banknotes and coins, as well as balances which can immediately be converted into currency or used for cashless payments, i.e. overnight (demand) deposits.