

## Attachment 5

# Bank of Japan Monetary Intermediation Cost to the Japanese Economy

## BOJ Annual Monetary Intermediation Cost 1984 to 2011 using M1 Money Stock<sup>1</sup>

There is no economic reward for monetary leverage from M&M Theorem.  
(Corollary, risk free rate ( $r_f$ ) should be GDP growth rate, not gov't debt rate)

Monetary Intermediation Cost Bank of Japan (¥)								Assumptions			
(N)	(A)	(B) = (A <sub>N</sub> ) - (A <sub>N-1</sub> )	(C) = (B <sup>3</sup> ) x (1-RR)	(D)	(E)=(C)+(D)	(F)	(G) = (F <sub>N</sub> - F <sub>N-1</sub> )/F <sub>N-1</sub>	(H) = (E) / (F)	(I)	(J) = (G) - (H)	
#	Year (End 12/31)	MoneyStock	¥ Increase	Money Stock Change	Actual (Net)	Total Annual	GDP <sup>3</sup> (¥ Billions)	Monetary Intermediation Cost Bank of Japan (% Est.)			
		M1-NS <sup>1</sup> (¥ Billions)	Prior Year (¥ Billions)	Intermediation Cost (¥ Billions)	Operations <sup>2</sup> (¥ Billions)	Intermediation Cost (¥ Billions)		GDP <sup>3</sup> (% Growth)	Intermediation (% GDP Cost)	Inflation % CPI (EOY) <sup>4</sup>	GDP-Intermediation Net (% GDP) ( $r_i$ )
0	1983	¥75,872.9					¥285,058.0				
1	1984	¥81,455.8	¥5,582.9	¥5,510.32		¥5,510.32	¥302,975.0	6.285%	1.819%	2.361%	4.467%
2	1985	¥84,363.8	¥2,908.0	¥2,870.20		¥2,870.20	¥325,402.0	7.402%	0.882%	1.961%	6.520%
3	1986	¥93,419.4	¥9,055.6	¥8,937.88		¥8,937.88	¥340,560.0	4.658%	2.624%	0.679%	2.034%
4	1987	¥98,836.3	¥5,416.9	¥5,346.48		¥5,346.48	¥354,170.0	3.996%	1.510%	0.112%	2.487%
5	1988	¥106,703.6	¥7,867.3	¥7,765.03		¥7,765.03	¥380,743.0	7.503%	2.039%	0.673%	5.463%
6	1989	¥107,164.6	¥461.0	¥455.01		¥455.01	¥410,122.0	7.716%	0.111%	2.230%	7.605%
7	1990	¥113,603.8	¥6,439.2	¥6,355.49		¥6,355.49	¥442,781.0	7.963%	1.435%	3.053%	6.528%
8	1991	¥124,073.6	¥10,469.8	¥10,333.69		¥10,333.69	¥469,422.0	6.017%	2.201%	3.280%	3.815%
9	1992	¥128,052.6	¥3,979.0	¥3,927.27		¥3,927.27	¥480,783.0	2.420%	0.817%	1.742%	1.603%
10	1993	¥136,568.4	¥8,515.8	¥8,405.09		¥8,405.09	¥483,712.0	0.609%	1.738%	1.309%	-1.128%
11	1994	¥141,129.8	¥4,561.4	¥4,502.10		¥4,502.10	¥488,450.0	0.980%	0.922%	0.596%	0.058%
12	1995	¥157,378.6	¥16,248.8	¥16,037.57		¥16,037.57	¥495,166.0	1.375%	3.239%	-0.099%	-1.864%
13	1996	¥177,386.1	¥20,007.5	¥19,747.40		¥19,747.40	¥505,012.0	1.988%	3.910%	0.099%	-1.922%
14	1997	¥192,934.3	¥15,548.2	¥15,346.07		¥15,346.07	¥515,644.0	2.105%	2.976%	1.877%	-0.871%
15	1998	¥203,925.6	¥10,991.3	¥10,848.41		¥10,848.41	¥504,905.0	-2.083%	2.149%	0.582%	-4.231%
16	1999	¥229,414.2	¥25,488.6	¥25,157.25		¥25,157.25	¥497,628.0	-1.441%	5.055%	-0.289%	-6.497%
17	2000	¥234,833.0	¥5,418.8	¥5,348.36		¥5,348.36	¥502,990.0	1.078%	1.063%	-0.677%	0.014%
18	2001	¥274,829.7	¥39,996.7	¥39,476.74		¥39,476.74	¥497,720.0	-1.048%	7.932%	-0.779%	-8.979%
19	2002	¥342,348.0	¥67,518.3	¥66,640.56		¥66,640.56	¥491,312.0	-1.287%	13.564%	-0.883%	-14.851%
20	2003	¥444,850.6	¥102,502.6	¥101,170.07		¥101,170.07	¥490,294.0	-0.207%	20.635%	-0.297%	-20.842%
21	2004	¥464,476.9	¥19,626.3	¥19,371.16	¥212.50	¥19,583.66	¥498,328.0	1.639%	3.930%	0.000%	-2.291%
22	2005	¥487,020.7	¥22,543.8	¥22,250.73	¥215.63	¥22,466.36	¥501,734.0	0.683%	4.478%	-0.298%	-3.794%
23	2006	¥480,108.9	¥-6,911.8	¥-6,821.95	¥247.99	¥-6,573.96	¥507,365.0	1.122%	-1.296%	0.299%	2.418%
24	2007	¥492,570.2	¥12,461.3	¥12,299.30	¥877.47	¥13,176.77	¥515,520.0	1.607%	2.556%	0.000%	-0.949%
25	2008	¥487,895.8	¥-4,674.4	¥-4,613.63	¥780.86	¥-3,832.77	¥504,378.0	-2.161%	-0.760%	1.390%	-1.401%
26	2009	¥492,680.4	¥4,784.6	¥4,722.40	¥415.01	¥5,137.41	¥470,937.0	-6.630%	1.091%	-1.371%	-7.721%
27	2010	¥508,212.8	¥15,532.4	¥15,330.48	¥669.69	¥16,000.17	¥479,172.0	1.749%	3.339%	-0.695%	-1.590%
28	2011	¥528,100.0	¥19,887.2	¥19,628.67	¥286.84	¥19,915.51	¥469,545.0	-2.009%	4.241%	-0.400%	-6.251%
TOTALS		¥528,100.0	¥452,227.1	¥446,348.15	¥3,705.99	¥450,054.14	Growth Rates	<b>1.80%</b>	<b>3.28%</b>	<b>0.58%</b>	<b>-1.72%</b>
Averages (1984-2011)			¥16,150.97	¥15,941.01	¥463.25	¥16,073.36	Count(Years)	28	28	28	28
Ave Last 10 Years (2002-2011)			¥25,327.03	¥24,997.78	¥463.25	¥25,368.38	Last 10 Yrs	<b>-0.58%</b>	<b>4.99%</b>	<b>-0.23%</b>	<b>-5.98%</b>
							Count(Years)	10	10	10	10

### Bank of Japan Monetary Intermediation Cost Estimate

Intermediation cost percentage estimated as [(M1 Money Stock growth in ¥) times (1- Reserve Requirement) + BOJ net operating cost] divided by [GDP (¥)].

### Notes

- 1-M1 comprises notes and coins in circulation outside banking corporations and demand and savings deposits of households, nonfinancial corporations, local governments, securities companies, Tanshi companies, and some other financial corporations such as securities finance companies with banking corporations in national currency.
- 2-BOJ operating expenses from Attachment 4 BOJ Operating Costs.
- 3-Ignores potential interest rate manipulation intermediation costs.

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### SOURCES:

- 1-M1 Money Stock data (Not Seasonally Adjusted) from Federal Reserve Bank of St. Louis at <http://research.stlouisfed.org/fred2/series/MYAGM1JPM189N/downloaddata?cid=32281>
- 2-BOJ operating costs from Attachment 4 via Bank of Japan Annual Reviews at <http://www.boj.or.jp/en/about/activities/act/index.htm/>
- 3-GDP from "What Was the Japan GDP or CPI Then?" MeasuringWorth, 2011 website at <http://www.measuringworth.com/datasets/japandata/>
- 4-Inflation CPI from "What Was the Japan GDP or CPI Then?" MeasuringWorth, 2011 at <http://www.measuringworth.com/datasets/japandata/>