

## Attachment 5

## Bank of Japan Monetary Intermediation Cost

Bank of Japan (BOJ) Compounded Monetary Intermediation Cost to Economy 1995 to 2016<sup>1</sup>

## M1 Money Stock Basis

(a)-Net GDP Productivity Growth Rate to economy (GDP Growth Rate (c) minus Intermediation Cost (b)) - ( r<sub>f</sub>)

Assumptions	% Total
(a)-Net GDP Productivity Growth Rate to economy (GDP Growth Rate (c) minus Intermediation Cost (b)) - ( r <sub>f</sub> )	-3.94%
(b)-Intermediation Cost Percentage <sup>2</sup>	4.26%
(c)-GDP Growth Rate (Net GDP + Intermediation Percentage) <sup>2</sup>	0.32%
	100.0%

(b)-Intermediation Cost Percentage<sup>2</sup>(c)-GDP Growth Rate (Net GDP + Intermediation Percentage)<sup>2</sup>

GDP EARNINGS WITH FED INTERMEDIATION EXPENSE INCLUDED										
(N)	(A)	(B) = (A) x (c)	(C) = (A) x (b)	(D) = (A)+(B)+(C)	(E)=∑ (C) Compounded					
Period	Year	Net GDP <sup>3</sup> Year(Begin) (¥ Billions)	Productivity Growth (Net) (¥ Billions)	BOJ Intermediation Expense <sup>2</sup>	Net GDP Year (End) (¥ Billions)	Compounded Intermediation		GDP Year (End) (¥ Billions)	Growth Rates	Count (Years)
						Expense <sup>4</sup>	%			
1	1995	¥502,636.2	¥1,609.2	-¥21,434.8	¥482,810.6	¥21,434.8	4.3%	¥482,810.6		
2	1996	¥482,810.6	¥1,545.7	-¥20,589.3	¥463,767.1	¥42,092.7	8.3%	¥463,767.1		
3	1997	¥463,767.1	¥1,484.8	-¥19,777.2	¥445,474.6	¥62,004.6	12.2%	¥445,474.6		
4	1998	¥445,474.6	¥1,426.2	-¥18,997.1	¥427,903.7	¥81,200.3	15.9%	¥427,903.7		
5	1999	¥427,903.7	¥1,369.9	-¥18,247.8	¥411,025.8	¥99,708.0	19.5%	¥411,025.8		
6	2000	¥411,025.8	¥1,315.9	-¥17,528.1	¥394,813.6	¥117,555.3	22.9%	¥394,813.6		
7	2001	¥394,813.6	¥1,264.0	-¥16,836.7	¥379,240.9	¥134,768.4	26.2%	¥379,240.9		
8	2002	¥379,240.9	¥1,214.1	-¥16,172.6	¥364,282.5	¥151,372.4	29.4%	¥364,282.5		
9	2003	¥364,282.5	¥1,166.3	-¥15,534.7	¥349,914.0	¥167,391.8	32.4%	¥349,914.0		
10	2004	¥349,914.0	¥1,120.3	-¥14,922.0	¥336,112.3	¥182,849.6	35.2%	¥336,112.3		
11	2005	¥336,112.3	¥1,076.1	-¥14,333.4	¥322,855.0	¥197,768.4	38.0%	¥322,855.0		
12	2006	¥322,855.0	¥1,033.6	-¥13,768.0	¥310,120.5	¥212,169.6	40.6%	¥310,120.5		
13	2007	¥310,120.5	¥992.9	-¥13,225.0	¥297,888.4	¥226,073.9	43.1%	¥297,888.4		
14	2008	¥297,888.4	¥953.7	-¥12,703.4	¥286,138.7	¥239,501.0	45.6%	¥286,138.7		
15	2009	¥286,138.7	¥916.1	-¥12,202.3	¥274,852.5	¥252,470.1	47.9%	¥274,852.5		
16	2010	¥274,852.5	¥879.9	-¥11,721.0	¥264,011.5	¥264,999.4	50.1%	¥264,011.5		
17	2011	¥264,011.5	¥845.2	-¥11,258.7	¥253,598.0	¥277,106.4	52.2%	¥253,598.0		
18	2012	¥253,598.0	¥811.9	-¥10,814.6	¥243,595.3	¥288,808.2	54.2%	¥243,595.3		
19	2013	¥243,595.3	¥779.9	-¥10,388.0	¥233,987.1	¥300,120.9	56.2%	¥233,987.1		
20	2014	¥233,987.1	¥749.1	-¥9,978.3	¥224,757.9	¥311,060.0	58.1%	¥224,757.9		
21	2015	¥224,757.9	¥719.6	-¥9,584.7	¥215,892.8	¥321,640.6	59.8%	¥215,892.8		
22	2016	¥215,892.8	¥691.2	-¥9,206.7	¥207,377.3	¥331,877.0	61.5%	¥207,377.3		
		Growth Rates	-3.94%	-3.94%	-3.94%	13.26%				
		Count (Years)	22	22	22	22				

GDP EARNINGS WITH FED INTERMEDIATION EXPENSE REMOVED							
(N)	(A)	(B) = (A) x (c)	(C) = (A) x (b)	(D) = (A)+(B)+(C)			
Period	Year	GDP <sup>3</sup> Year(Begin) (¥ Billions)	Productivity Growth(Total) (¥ Billions)	BOJ Intermediation Expense <sup>2</sup>	GDP Year (End) (¥ Billions)	Growth Rates	Count (Years)
2	1996	¥504,245.4	¥1,614.3	¥0.0	¥505,859.7		
3	1997	¥505,859.7	¥1,619.5	¥0.0	¥507,479.2		
4	1998	¥507,479.2	¥1,624.7	¥0.0	¥509,103.9		
5	1999	¥509,103.9	¥1,629.9	¥0.0	¥510,733.8		
6	2000	¥510,733.8	¥1,635.1	¥0.0	¥512,369.0		
7	2001	¥512,369.0	¥1,640.4	¥0.0	¥514,009.3		
8	2002	¥514,009.3	¥1,645.6	¥0.0	¥515,654.9		
9	2003	¥515,654.9	¥1,650.9	¥0.0	¥517,305.8		
10	2004	¥517,305.8	¥1,656.2	¥0.0	¥518,961.9		
11	2005	¥518,961.9	¥1,661.5	¥0.0	¥520,623.4		
12	2006	¥520,623.4	¥1,666.8	¥0.0	¥522,290.2		
13	2007	¥522,290.2	¥1,672.1	¥0.0	¥523,962.3		
14	2008	¥523,962.3	¥1,677.5	¥0.0	¥525,639.8		
15	2009	¥525,639.8	¥1,682.8	¥0.0	¥527,322.6		
16	2010	¥527,322.6	¥1,688.2	¥0.0	¥529,010.8		
17	2011	¥529,010.8	¥1,693.6	¥0.0	¥530,704.5		
18	2012	¥530,704.5	¥1,699.1	¥0.0	¥532,403.5		
19	2013	¥532,403.5	¥1,704.5	¥0.0	¥534,108.0		
20	2014	¥534,108.0	¥1,709.9	¥0.0	¥535,818.0		
21	2015	¥535,818.0	¥1,715.4	¥0.0	¥537,533.4		
22	2016	¥537,533.4	¥1,720.9	¥0.0	¥539,254.3		
		Growth Rates	0.32%	0.32%	N.A.	0.32%	
		Count (Years)	22	22	22	22	

## Notes/Sources:

1-Format adapted from "The Tyranny of Compounding Costs" at

<http://www.pbs.org/wgbh/pages/frontline/retirement/etc/tyranny.html>

2-Intermediation and GDP growth rate estimates from Attachment 4.

3-Initial GDP from Attachment 4 via Cabinet Office, Annual Nominal, Fiscal Year GDP at

[http://www.esri.cao.go.jp/en/sna/sokuhou/sokuhou\\_top.html](http://www.esri.cao.go.jp/en/sna/sokuhou/sokuhou_top.html) Download Date: 1/12/2018

4-BOJ M1 monetary intermediation expense compounded at total growth rate.

BOJ Monetary Intermediation Cost 1995-2016	¥ Billions	% Percent
Economic (GDP) earnings 2016 w/o BOJ intermediation expense	¥539,254.3	100.0%
Economy earnings with BOJ Intermediation expense deducted	¥207,377.3	38.5%
BOJ Intermediation Expense to Non Bank Economy since 1995	¥331,877.0	61.5%

Bank of Japan Intermediation costs, primarily monetary expansion inflation, estimated to have wealth transferred approximately 61.5% of economic system returns to banking sector from 1995 to 2016.