

Economic Recovery Plan for Japan

Bank of Japan (BOJ) Compounded Monetary Intermediation Cost to Economy 1956 to 2011¹

M1 Money Stock Basis

Assumptions

| | |
|---|-------|
| (a)-Net GDP Productivity Growth Rate to economy (GDP Growth Rate (c) minus Intermediation Cost (b)) - (r) | 4.16% |
| (b)-Intermediation Cost Percentage ² | 3.29% |
| (c)-GDP Growth Rate (Net GDP + Intermediation Percentage) ² | 7.46% |

| GDP EARNINGS WITH FED INTERMEDIATION EXPENSE INCLUDED | | | | | | |
|---|------|---|--|----------------------------------|---------------------------------------|---|
| (N) | (A) | (B) = (A) x (c) | (C) = (A) x (b) | (D) = (A)+(B)+(C) | (E)= \sum (C) Compounded | |
| Period | Year | Net GDP ³ Yr(Begin) (¥ Billions) | Productivity Growth (Net) (¥ Billions) | BOJ Intermediation Expense | Net GDP Year (End) (¥ Billions) | Compounded Intermediation Expense ⁴ % |
| 1 ³ | 1956 | ¥8,355.9 | ¥623.3 | -¥275.3 | ¥8,703.9 | ¥275.3 3.1% |
| 2 | 1957 | ¥8,703.9 | ¥649.3 | -¥286.8 | ¥9,066.4 | ¥582.6 6.0% |
| 3 | 1958 | ¥9,066.4 | ¥676.3 | -¥298.7 | ¥9,443.9 | ¥924.8 8.9% |
| 4 | 1959 | ¥9,443.9 | ¥704.5 | -¥311.2 | ¥9,837.2 | ¥1,305.0 11.7% |
| 5 | 1960 | ¥9,837.2 | ¥733.8 | -¥324.1 | ¥10,246.9 | ¥1,726.4 14.4% |
| 6 | 1961 | ¥10,246.9 | ¥764.4 | -¥337.6 | ¥10,673.7 | ¥2,192.8 17.0% |
| 7 | 1962 | ¥10,673.7 | ¥796.2 | -¥351.7 | ¥11,118.2 | ¥2,708.1 19.6% |
| 8 | 1963 | ¥11,118.2 | ¥829.3 | -¥366.3 | ¥11,581.2 | ¥3,276.4 22.1% |
| 9 | 1964 | ¥11,581.2 | ¥863.9 | -¥381.6 | ¥12,063.5 | ¥3,902.4 24.4% |
| 10 | 1965 | ¥12,063.5 | ¥899.9 | -¥397.5 | ¥12,565.9 | ¥4,590.9 26.8% |
| 11 | 1966 | ¥12,565.9 | ¥937.3 | -¥414.0 | ¥13,089.2 | ¥5,347.4 29.0% |
| 12 | 1967 | ¥13,089.2 | ¥976.4 | -¥431.3 | ¥13,634.3 | ¥6,177.6 31.2% |
| 13 | 1968 | ¥13,634.3 | ¥1,017.0 | -¥449.2 | ¥14,202.1 | ¥7,087.6 33.3% |
| 14 | 1969 | ¥14,202.1 | ¥1,059.4 | -¥467.9 | ¥14,793.6 | ¥8,084.2 35.3% |
| 15 | 1970 | ¥14,793.6 | ¥1,103.5 | -¥487.4 | ¥15,409.7 | ¥9,174.7 37.3% |
| 16 | 1971 | ¥15,409.7 | ¥1,149.5 | -¥507.7 | ¥16,051.4 | ¥10,366.8 39.2% |
| 17 | 1972 | ¥16,051.4 | ¥1,197.3 | -¥528.9 | ¥16,719.9 | ¥11,668.9 41.1% |
| 18 | 1973 | ¥16,719.9 | ¥1,247.2 | -¥550.9 | ¥17,416.2 | ¥13,090.3 42.9% |
| 19 | 1974 | ¥17,416.2 | ¥1,299.1 | -¥573.8 | ¥18,141.5 | ¥14,640.5 44.7% |
| 20 | 1975 | ¥18,141.5 | ¥1,353.2 | -¥597.7 | ¥18,897.0 | ¥16,330.4 46.4% |
| 21 | 1976 | ¥18,897.0 | ¥1,409.6 | -¥622.6 | ¥19,684.0 | ¥18,171.1 48.0% |
| 22 | 1977 | ¥19,684.0 | ¥1,468.3 | -¥648.6 | ¥20,503.7 | ¥20,175.2 49.6% |
| 23 | 1978 | ¥20,503.7 | ¥1,529.5 | -¥675.6 | ¥21,357.6 | ¥22,355.7 51.1% |
| 24 | 1979 | ¥21,357.6 | ¥1,593.1 | -¥703.7 | ¥22,247.1 | ¥24,726.9 52.6% |
| 25 | 1980 | ¥22,247.1 | ¥1,659.5 | -¥733.0 | ¥23,173.6 | ¥27,304.4 54.1% |
| 26 | 1981 | ¥23,173.6 | ¥1,728.6 | -¥763.5 | ¥24,138.6 | ¥30,104.7 55.5% |
| 27 | 1982 | ¥24,138.6 | ¥1,800.6 | -¥795.3 | ¥25,143.9 | ¥33,145.7 56.9% |
| 28 | 1983 | ¥25,143.9 | ¥1,875.6 | -¥828.4 | ¥26,191.1 | ¥36,446.6 58.2% |
| 29 | 1984 | ¥26,191.1 | ¥1,953.7 | -¥862.9 | ¥27,281.8 | ¥40,028.2 59.5% |
| 30 | 1985 | ¥27,281.8 | ¥2,035.1 | -¥898.9 | ¥28,418.0 | ¥43,912.9 60.7% |
| 31 | 1986 | ¥28,418.0 | ¥2,119.8 | -¥936.3 | ¥29,601.4 | ¥48,124.9 61.9% |
| 32 | 1987 | ¥29,601.4 | ¥2,208.1 | -¥975.3 | ¥30,834.2 | ¥52,690.0 63.1% |
| 33 | 1988 | ¥30,834.2 | ¥2,300.0 | -¥1,015.9 | ¥32,118.3 | ¥57,636.3 64.2% |
| 34 | 1989 | ¥32,118.3 | ¥2,395.8 | -¥1,058.2 | ¥33,455.9 | ¥62,993.9 65.3% |
| 35 | 1990 | ¥33,455.9 | ¥2,495.6 | -¥1,102.3 | ¥34,849.2 | ¥68,795.2 66.4% |
| 36 | 1991 | ¥34,849.2 | ¥2,599.5 | -¥1,148.2 | ¥36,300.5 | ¥75,075.1 67.4% |
| 37 | 1992 | ¥36,300.5 | ¥2,707.8 | -¥1,196.0 | ¥37,812.3 | ¥81,871.3 68.4% |
| 38 | 1993 | ¥37,812.3 | ¥2,820.6 | -¥1,245.8 | ¥39,387.0 | ¥89,224.2 69.4% |
| 39 | 1994 | ¥39,387.0 | ¥2,938.0 | -¥1,297.7 | ¥41,027.3 | ¥97,177.5 70.3% |
| 40 | 1995 | ¥41,027.3 | ¥3,060.4 | -¥1,351.8 | ¥42,735.9 | ¥105,778.1 71.2% |
| 41 | 1996 | ¥42,735.9 | ¥3,187.8 | -¥1,408.1 | ¥44,515.7 | ¥115,076.6 72.1% |
| 42 | 1997 | ¥44,515.7 | ¥3,320.6 | -¥1,466.7 | ¥46,369.5 | ¥125,127.3 73.0% |
| 43 | 1998 | ¥46,369.5 | ¥3,458.9 | -¥1,527.8 | ¥48,300.6 | ¥135,988.9 73.8% |
| 44 | 1999 | ¥48,300.6 | ¥3,602.9 | -¥1,591.4 | ¥50,312.1 | ¥147,724.2 74.6% |
| 45 | 2000 | ¥50,312.1 | ¥3,753.0 | -¥1,657.7 | ¥52,407.4 | ¥160,401.2 75.4% |
| 46 | 2001 | ¥52,407.4 | ¥3,909.3 | -¥1,726.7 | ¥54,590.0 | ¥174,092.9 76.1% |
| 47 | 2002 | ¥54,590.0 | ¥4,072.1 | -¥1,798.6 | ¥56,863.4 | ¥188,877.8 76.9% |
| 48 | 2003 | ¥56,863.4 | ¥4,241.7 | -¥1,873.5 | ¥59,231.5 | ¥204,840.5 77.6% |
| 49 | 2004 | ¥59,231.5 | ¥4,418.3 | -¥1,951.6 | ¥61,698.2 | ¥222,071.9 78.3% |
| 50 | 2005 | ¥61,698.2 | ¥4,602.3 | -¥2,032.8 | ¥64,267.7 | ¥240,670.0 78.9% |
| 51 | 2006 | ¥64,267.7 | ¥4,794.0 | -¥2,117.5 | ¥66,944.2 | ¥260,740.0 79.6% |
| 52 | 2007 | ¥66,944.2 | ¥4,993.6 | -¥2,205.7 | ¥69,732.1 | ¥282,395.3 80.2% |
| 53 | 2008 | ¥69,732.1 | ¥5,201.6 | -¥2,297.6 | ¥72,636.1 | ¥305,757.8 80.8% |
| 54 | 2009 | ¥72,636.1 | ¥5,418.2 | -¥2,393.2 | ¥75,661.1 | ¥330,958.7 81.4% |
| 55 | 2010 | ¥75,661.1 | ¥5,643.9 | -¥2,492.9 | ¥78,812.1 | ¥358,139.1 82.0% |
| 56 | 2011 | ¥78,812.1 | ¥5,878.9 | -¥2,596.7 | ¥82,094.2 | ¥387,450.8 82.5% |

| GDP EARNINGS WITH FED INTERMEDIATION EXPENSE REMOVED | | | | | | |
|--|------|---|---|----------------------------------|-----------------------------------|--|
| (N) | (A) | (B) = (A) x (c) | (C) = (A) x (b) | (D) = (A)+(B)+(C) | | |
| Period | Year | GDP ³ Year(Begin) (¥ Billions) | Productivity Growth(Total) (¥ Billions) | BOJ Intermediation Expense | GDP Year (End) (¥ Billions) | |
| 1 ³ | 1956 | ¥8,355.9 | ¥623.3 | ¥0.0 | ¥8,979.2 | |
| 2 | 1957 | ¥8,979.2 | ¥669.8 | ¥0.0 | ¥9,649.0 | |
| 3 | 1958 | ¥9,649.0 | ¥719.8 | ¥0.0 | ¥10,368.7 | |
| 4 | 1959 | ¥10,368.7 | ¥773.4 | ¥0.0 | ¥11,142.2 | |
| 5 | 1960 | ¥11,142.2 | ¥831.1 | ¥0.0 | ¥11,973.3 | |
| 6 | 1961 | ¥11,973.3 | ¥893.1 | ¥0.0 | ¥12,866.5 | |
| 7 | 1962 | ¥12,866.5 | ¥959.8 | ¥0.0 | ¥13,826.2 | |
| 8 | 1963 | ¥13,826.2 | ¥1,031.4 | ¥0.0 | ¥14,857.6 | |
| 9 | 1964 | ¥14,857.6 | ¥1,108.3 | ¥0.0 | ¥15,965.9 | |
| 10 | 1965 | ¥15,965.9 | ¥1,191.0 | ¥0.0 | ¥17,156.8 | |
| 11 | 1966 | ¥17,156.8 | ¥1,279.8 | ¥0.0 | ¥18,436.6 | |
| 12 | 1967 | ¥18,436.6 | ¥1,375.3 | ¥0.0 | ¥19,811.9 | |
| 13 | 1968 | ¥19,811.9 | ¥1,477.8 | ¥0.0 | ¥21,289.7 | |
| 14 | 1969 | ¥21,289.7 | ¥1,588.1 | ¥0.0 | ¥22,877.8 | |
| 15 | 1970 | ¥22,877.8 | ¥1,706.5 | ¥0.0 | ¥24,584.3 | |
| 16 | 1971 | ¥24,584.3 | ¥1,833.8 | ¥0.0 | ¥26,418.2 | |
| 17 | 1972 | ¥26,418.2 | ¥1,970.6 | ¥0.0 | ¥28,388.8 | |
| 18 | 1973 | ¥28,388.8 | ¥2,117.6 | ¥0.0 | ¥30,506.4 | |
| 19 | 1974 | ¥30,506.4 | ¥2,275.6 | ¥0.0 | ¥32,782.0 | |
| 20 | 1975 | ¥32,782.0 | ¥2,445.3 | ¥0.0 | ¥35,227.4 | |
| 21 | 1976 | ¥35,227.4 | ¥2,627.7 | ¥0.0 | ¥37,855.1 | |
| 22 | 1977 | ¥37,855.1 | ¥2,823.8 | ¥0.0 | ¥40,678.9 | |
| 23 | 1978 | ¥40,678.9 | ¥3,034.4 | ¥0.0 | ¥43,713.3 | |
| 24 | 1979 | ¥43,713.3 | ¥3,260.7 | ¥0.0 | ¥46,974.0 | |
| 25 | 1980 | ¥46,974.0 | ¥3,504.0 | ¥0.0 | ¥50,478.0 | |
| 26 | 1981 | ¥50,478.0 | ¥3,765.3 | ¥0.0 | ¥54,243.4 | |
| 27 | 1982 | ¥54,243.4 | ¥4,046.2 | ¥0.0 | ¥58,289.6 | |
| 28 | 1983 | ¥58,289.6 | ¥4,348.0 | ¥0.0 | ¥62,637.6 | |
| 29 | 1984 | ¥62,637.6 | ¥4,672.4 | ¥0.0 | ¥67,310.0 | |
| 30 | 1985 | ¥67,310.0 | ¥5,020.9 | ¥0.0 | ¥72,330.9 | |
| 31 | 1986 | ¥72,330.9 | ¥5,395.4 | ¥0.0 | ¥77,726.4 | |
| 32 | 1987 | ¥77,726.4 | ¥5,797.9 | ¥0.0 | ¥83,524.3 | |
| 33 | 1988 | ¥83,524.3 | ¥6,230.4 | ¥0.0 | ¥89,754.7 | |
| 34 | 1989 | ¥89,754.7 | ¥6,695.1 | ¥0.0 | ¥96,449.8 | |
| 35 | 1990 | ¥96,449.8 | ¥7,194.6 | ¥0.0 | ¥103,644.4 | |
| 36 | 1991 | ¥103,644.4 | ¥7,731.2 | ¥0.0 | ¥111,375.6 | |
| 37 | 1992 | ¥111,375.6 | ¥8,307.9 | ¥0.0 | ¥119,683.5 | |
| 38 | 1993 | ¥119,683.5 | ¥8,927.7 | ¥0.0 | ¥128,611.2 | |
| 39 | 1994 | ¥128,611.2 | ¥9,593.6 | ¥0.0 | ¥138,204.8 | |
| 40 | 1995 | ¥138,204.8 | ¥10,309.2 | ¥0.0 | ¥148,514.0 | |
| 41 | 1996 | ¥148,514.0 | ¥11,078.2 | ¥0.0 | ¥159,592.3 | |
| 42 | 1997 | ¥159,592.3 | ¥11,904.6 | ¥0.0 | ¥171,496.9 | |
| 43 | 1998 | ¥171,496.9 | ¥12,792.6 | ¥0.0 | ¥184,289.5 | |
| 44 | 1999 | ¥184,289.5 | ¥13,746.9 | ¥0.0 | ¥198,036.4 | |
| 45 | 2000 | ¥198,036.4 | ¥14,772.3 | ¥0.0 | ¥212,808.7 | |
| 46 | 2001 | ¥212,808.7 | ¥15,874.2 | ¥0.0 | ¥228,682.9 | |
| 47 | 2002 | ¥228,682.9 | ¥17,058.3 | ¥0.0 | ¥245,741.2 | |
| 48 | 2003 | ¥245,741.2 | ¥18,330.8 | ¥0.0 | ¥264,072.0 | |
| 49 | 2004 | ¥264,072.0 | ¥19,698.2 | ¥0.0 | ¥283,770.2 | |
| 50 | 2005 | ¥283,770.2 | ¥21,167.5 | ¥0.0 | ¥304,937.7 | |
| 51 | 2006 | ¥304,937.7 | ¥22,746.5 | ¥0.0 | ¥327,684.2 | |
| 52 | 2007 | ¥327,684.2 | ¥24,443.2 | ¥0.0 | ¥352,127.4 | |
| 53 | 2008 | ¥352,127.4 | ¥26,266.5 | ¥0.0 | ¥378,393.9 | |
| 54 | 2009 | ¥378,393.9 | ¥28,225.9 | ¥0.0 | ¥406,619.8 | |
| 55 | 2010 | ¥406,619.8 | ¥30,331.3 | ¥0.0 | ¥436,951.1 | |
| 56 | 2011 | ¥436,951.1 | ¥32,593.9 | ¥0.0 | ¥469,545.0 | |

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December 8, 2012

- 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 7.
- 3-Initial GDP from Attachment 7 via MeasuringWorth, 2011 website at <http://www.measuringworth.com/datasets/japandata/>
- 4-BOJ M1 Monetary Intermediation expense compounded at total growth rate.

| BOJ Monetary Intermediation Cost 1956-2011 | ¥ Billions | % Percent |
|--|-------------------|--------------|
| Economic (GDP) earnings 2011 w/o BOJ intermediation expense | ¥469,545.0 | 100.0% |
| Economy earnings with BOJ Intermediation expense deducted | ¥82,094.2 | 17.5% |
| BOJ Intermediation Expense to Non Bank Economy since 1956 | ¥387,450.8 | 82.5% |

Bank of Japan Intermediation costs estimated to have wealth transferred approximately 82.5% of economic system returns to banking sector from 1956 to 2011.