

Supplement 1(b)  
EU Economic Recovery Plan

ECB/NCB Annual & Compound Monetary Intermediation Cost to EU Total (27) Economy 2005 to 2011<sup>6</sup>

EU Total (27)

€M1 Money Stock Basis

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.

(Does not include time deposits or money market funds as they are not demand deposits.)

STEP 1 of 3: Calculate annual intermediation cost european system central banks (ESCB)

(N)	(A)	(B)=(A <sub>N</sub> ) - (A <sub>N-1</sub> )	(C) = (B) x (1-RR <sup>a</sup> )	(D)	(E <sub>N</sub> )=(C <sub>N</sub> )+(D <sub>N</sub> )	
Period	Year	Money Stock M1 <sup>1</sup> (€ Millions)	€ Increase Prior Year (€ Millions)	Money Stock Intermediation (€ Millions)	ESCB Net Op Cost <sup>2</sup> (€ Millions)	Annual Cost Intermediation (€ Millions)
0	2004	€ 4,184,855.2				
1	2005	€ 4,927,358.8	€ 742,503.6	€ 683,103.3	€ 343.4	€ 683,446.7
2	2006	€ 5,407,353.3	€ 479,994.5	€ 441,595.0	€ 356.4	€ 441,951.4
3	2007	€ 5,617,947.8	€ 210,594.5	€ 193,746.9	€ 379.9	€ 194,126.9
4	2008	€ 5,554,880.2	€ (63,067.6)	€ (58,022.2)	€ 380.7	€ (57,641.5)
5	2009	€ 6,226,556.7	€ 671,676.5	€ 617,942.4	€ 394.8	€ 618,337.2
6	2010	€ 6,549,031.2	€ 322,474.4	€ 296,676.5	€ 406.7	€ 297,083.2
7	2011	€ 6,689,372.7	€ 140,341.6	€ 129,114.2	€ 435.6	€ 129,549.8
TOTALS		€ 6,689,372.7	€ 2,504,517.6	€ 2,304,156.2	€ 2,697.6	€ 2,306,853.7
1-Money Stock (M1) Not Seasonally Adjusted from eurostat Last Updated 10/1/2012 at <a href="http://appsso.eurostat.ec.europa.eu/hui/show.do?dataset=mny_agg_m&amp;lang=en">http://appsso.eurostat.ec.europa.eu/hui/show.do?dataset=mny_agg_m&amp;lang=en</a>					€ 329,550.5	Total Average
2-ESCB estimate includes ECB only.					€ 683,446.7	Max
					€ (57,641.5)	Min

(b)-Net GDP Productivity Growth Rate (GDP Growth Rate (d) minus Intermediation Cost (c)) - (r<sub>i</sub>)

(c)-Intermediation Cost Percentage (from Step 2)

(d)-GDP Growth Rate (Net GDP + Intermediation Percentage) (from Step 2)

Assumptions

a-Base II Reserve Requirement (RR)	8.0%
(b)-Net GDP Productivity Growth Rate (GDP Growth Rate (d) minus Intermediation Cost (c)) - (r <sub>i</sub> )	-0.25%
(c)-Intermediation Cost Percentage (from Step 2)	2.80%
(d)-GDP Growth Rate (Net GDP + Intermediation Percentage) (from Step 2)	2.55%

STEP 2 of 3: Calculate Intermediation Cost Percentages (%)

(F)	(G)=(F <sub>N</sub> -F <sub>N-1</sub> )/F <sub>N-1</sub>	(H <sub>N</sub> ) = (E <sub>N</sub> ) / (F <sub>N</sub> )	(I)	(J) = (G) - (H)	
Year	GDP <sup>3</sup> (€ Millions)	GDP <sup>3</sup> (% Growth)	Intermediation (% GDP Cost) <sup>c</sup>	Inflation % HICP <sup>4</sup>	GDP-Intermediation Net (% GDP) (r <sub>i</sub> )
2004	€ 10,606,152.4				
2005	€ 11,072,608.3	4.398%	6.172%	2.281%	-1.774%
2006	€ 11,701,840.1	5.683%	3.777%	2.310%	1.906%
2007	€ 12,406,984.2	6.026%	1.565%	2.365%	4.461%
2008	€ 12,475,972.5	0.556%	-0.462%	3.657%	1.018%
2009	€ 11,755,204.5	-5.777%	5.260%	0.986%	-11.037%
2010	€ 12,282,793.7	4.488%	2.419%	2.080%	2.069%
2011	€ 12,650,727.1	2.996%	1.024%	3.101%	1.971%
Compound Growth Rates		2.55%	2.80%	2.39%	-0.32%
Count (Years)		7	7	7	7
Average Annual Compound Growth Rates					

STEP 3 of 3: Calculate Compounding Intermediation Cost

3A. GDP EARNINGS WITH NCB INTERMEDIATION EXPENSE INCLUDED							
(N)	(A)	(B) = (A) x (d)	(C) = (A) x (c)	(D) = (A)+(B)+(C)	(E)=∑ (C) Compounded		
Period	Year	Net GDP <sup>3</sup> Begin Yr (€ Millions)	Productivity Growth (Net) (€ Millions)	NCB Intermediation Expense	Net GDP <sup>3</sup> End Yr (€ Millions)	Compounded Intermediation Expense <sup>5</sup>	%
1	2005	€ 10,606,152.4	€ 270,485.4	€ (296,826.3)	€ 10,579,811.5	€ 296,826.3	2.7%
2	2006	€ 10,579,811.5	€ 269,813.6	€ (296,089.1)	€ 10,553,536.1	€ 600,485.3	5.4%
3	2007	€ 10,553,536.1	€ 269,143.5	€ (295,353.7)	€ 10,527,325.9	€ 911,153.0	8.0%
4	2008	€ 10,527,325.9	€ 268,475.1	€ (294,620.2)	€ 10,501,180.8	€ 1,229,010.1	10.5%
5	2009	€ 10,501,180.8	€ 267,808.3	€ (293,888.5)	€ 10,475,100.6	€ 1,554,241.6	12.9%
6	2010	€ 10,475,100.6	€ 267,143.2	€ (293,158.6)	€ 10,449,085.2	€ 1,887,037.6	15.3%
7	2011	€ 10,449,085.2	€ 266,479.8	€ (292,430.6)	€ 10,423,134.4	€ 2,227,592.7	17.6%
Compound Growth Rates			-0.25%	-0.25%	-0.25%	33.37%	
Count (Years)			7	7	7	7	

3B. GDP EARNINGS W/ NCB INTERMEDIATION EXPENSE REMOVED					
(N)	(A)	(B) = (A) x (d)	(C) = (A) x (c)	(D)=(A)+(B)+(C)	
Period	Year	GDP <sup>3</sup> Begin Yr (€ Millions)	Productivity Growth(Total) (€ Millions)	NCB Intermediation Expense	GDP <sup>3</sup> End Yr (€ Millions)
1	2005	€ 10,606,152.4	€ 270,485.4	€ 0.0	€ 10,876,637.8
2	2006	€ 10,876,637.8	€ 277,383.5	€ 0.0	€ 11,154,021.3
3	2007	€ 11,154,021.3	€ 284,457.5	€ 0.0	€ 11,438,478.9
4	2008	€ 11,438,478.9	€ 291,712.0	€ 0.0	€ 11,730,190.8
5	2009	€ 11,730,190.8	€ 299,151.4	€ 0.0	€ 12,029,342.2
6	2010	€ 12,029,342.2	€ 306,780.6	€ 0.0	€ 12,336,122.8
7	2011	€ 12,336,122.8	€ 314,604.3	€ 0.0	€ 12,650,727.1
Compound Growth Rates		2.55%	2.55%	N.A.	2.55%
Count (Years)		7	7	7	7

Notes

- 3-GDP data from eurostat European Commission Last Updated 9/22/2012 2:05:37 AM at <http://epp.eurostat.ec.europa.eu/tqm/table.do?tab=table&init=1&language=en&pcode=tec00001&plugin=1>
- 4-Inflation HICP (Annual) from eurostat European Commission [prc\_hicp\_aind] data set at <http://epp.eurostat.ec.europa.eu/portal/page/portal/hicp/data/database>
- 5-NCB Intermediation expenses compounded at total growth rate.
- 6-Format adapted from "The Tyranny of Compounding Costs" at <http://www.pbs.org/wgbh/pages/frontline/retirement/etc/tyranny.html>

ESCB Compound Intermediation Cost 2005-2011	€ Millions	% Percent
Economic (GDP) earnings 2011 w/o NCB intermediation expense	€ 12,650,727.1	100.0%
Economy earnings with ECB/NCB Intermediation expense deducted	€ 10,423,134.4	82.4%
ECB/NCB Intermediation Expense to Non Bank Economy since 2005	€ 2,227,592.7	17.6%

ECB/NCB Intermediation cost, primarily monetary expansion inflation, estimated to have consumed (wealth transferred) approximately 17.6% of EU Total (27) economic returns to banking sector from 2005 to 2011.