

ECB QE and the forthcoming implosion of the European Banking System

I feel like an Eskimo, discussing QE. It is said Eskimo languages contain separate words for “wet snow”, “soft snow”, “dry snow”, “drifting snow”, etc.¹. Imagine an Eskimo being told just “expect snow”.

Expect ECB QE. Whatever QE “means” now, we arrive too late to impose a precise definition on those two letters in our language. The Fed valiantly introduced “credit easing”, “maturity transformation”, and “LSAPs” into the vernacular; but QE, QE2 and QE “infinity” were too clever to dethrone.

Applying QE as a generic “label” leads us to falsely believe that diverse actions so labeled are essentially identical. All snow is not the same, but different types do bear some common resemblance—QE is always and everywhere an asset swap resulting in an exchange of central bank deposits for securities.

In what follows I go through the mechanics of generic ECB QE to illustrate that:

In the limit, as ECB QE goes to infinity, the size of the European banking system goes to zero.

The Euro Area (EA) banking system balance sheet is approximately as shown below²:

Table 1: Euro Area Aggregate MFI Balance Sheet (excluding ESCB)
end-November 2014
(in Euro billions)

Assets		Liabilities	
Loans to Households	5203	Household Deposits	6370
Loans to Nonfinancial Corporations	4277	Nonfinancial Corporation Deposits	1954
Loans to Non Euro Residents	3064	Non Euro Resident Deposits	2703
Loans to Other Financial Intermediaries	1092	Other Financial Institution Deposits	2465
Debt Securities (excl. Gen Government)	3699	Debt Securities Issued	4465
Debt Securities (Gen Government)	1870	Total Non-Equity Liabilities	17957
Current and Deposit Accounts at ECB	284	Capital and Reserves	2410
Other Assets Net	878		
Total Assets	20367	Total Liabilities	20367

Source: European Central Bank; author's calculations

¹ See N.R. Hansen (1958) *Patterns of Discovery: An Inquiry into the Conceptual Foundations of Science*, page 184.

² “MFI” stands for “Monetary and Financial Institutions”. “ESCB” stands for “European System of Central Banks” or the consolidated balance sheet of the ECB and central banks whose countries have adopted the Euro.

The total outstanding amount of Euro denominated debt securities issued by EA central governments is € 6725 billion and by other components of EA general governments is € 486 billion. As can be seen above, EA banks hold € 1870 billion or 26 percent of the total EA general government debt outstanding.

EA bank claims on the ECB (current and deposit accounts) amount to € 284 billion³.

The ratio of aggregate capital and reserves to total assets is 11.8 percent.

In order to have an idea of the key factors driving the profit and loss account for the European banking sector, Table 2 provides a simple simulation. Note that negative interest on “reserves” (another term for bank deposits at the ECB), is a rather trivial part of the overall result owing to their small share in total assets and relatively mild “penalty” negative rate.

The return on equity in this “back of the envelope” calculation is 8 percent. That is obtained by taking net income from Table 2 and dividing by capital and reserves from Table 1.

Table 2: Simplified Euro Area Aggregate MFI Profit and Loss Account (excluding ESCB)

"hypothetical 2014"

(in Euro billions)

Revenues		Expenditures	
Interest and Fee Income on Loans (assumed 350bps)	477.3	Interest on Deposits (assumed 50 bps)	67.5
Interest and Capital Gains on Securities (assumed 75bps)	41.8	Interest and Fees on Securities Issued (assumed 175 bps)	78.1
Interest on ECB Account Balances (assumed - 10 bps)	-0.3	Nonfinancial Costs (assumed 100 bps on Non-Equity Liabilities)	179.6
		Net Income	193.6
Total Revenues	518.7	Total Expenditures and Net Income	518.7

Source: European Central Bank; author's calculations

Now suppose the ECB were to announce the imminent purchase of *all* EA central government debt.

That would produce a “shock and awe” QE equivalent of € 6725 billion.

Continuing with our thought experiment, the aggregate banking system balance sheet would appear as in Table 3 below, assuming for the moment that other items would not change.

³ For those interested in such comparisons, that is about 1/10th the size of US bank deposits at the Federal Reserve.

Table 3: Euro Area Aggregate MFI Balance Sheet (excluding ESCB)
 hypothetical 2015
 (in Euro billions)

Assets		Liabilities	
Loans to Households	5203	Household Deposits	6370
Loans to Nonfinancial Corporations	4277	Nonfinancial Corporation Deposits	1954
Loans to Non Euro Residents	3064	Non Euro Resident Deposits	2703
Loans to Other Financial Intermediaries	1092	Other Financial Institution Deposits	2465
Debt Securities (excl. Gen Government)	3699	Debt Securities Issued	4465
		Additional Interest Bearing Liabilities	4612
Debt Securities (Gen Government)	0		
Additional Balances at ECB	6725	Total Non-Equity Liabilities	22569
Current and Deposit Accounts at ECB	284		
		Capital and Reserves	2410
Other Assets Net	878	Additional Capital and Reserves	243
Total Assets	25222	Total Liabilities	25222

Source: European Central Bank; author's calculations

The mechanics are as follows. The ECB purchases € 6725 in government securities, of which € 1870 are held by banks. Bank account balances at the ECB rise by € 6725 as this is how the ECB “pays” for its purchases—whether or not the seller is a bank⁴. EA banking system assets rise by € 4855 or € 6725 (the rise in reserves) minus € 1870 (the fall in government debt holdings).

The liability side is slightly more complicated. Although deposits at the ECB are considered risk-free and hence not subject to a capital charge according to *risk-weighted capital adequacy regulations*, they would be subject to a (lesser) capital charge owing to *leverage regulations*. Consequently part of the financing of the increased assets must take the form of equity. In order to focus on this issue more carefully, the change in the aggregate EA MFI balance sheet will be analyzed further below.

For now it is important to grasp that the increase in the size of the ECB balance sheet leaves an indelible imprint on the size of the banking system—both assets and liabilities⁵.

⁴ Nonbanks place bids to sell either directly or through a broker, providing the bank account number to which payment is to be made if their bid(s) is accepted. The ECB credits the winners’ banks’ deposit accounts at the ECB, and the banks, in turn, credit the winner’s deposit account. Consequently, QE expands not only the ECB balance sheet but also the banking system balance sheet to the extent that nonbanks participate.

⁵ Gentle reader, desiring neither to perplex nor tax your patience I will not dwell here to debunk, once again, the random idling of economists defunct who would have you believe reserves “circulate” outside banks. The balance sheets speak for themselves. European banks are now paying each other to take “hot potato” reserves off their hands. See Business Week January 19, 2015 *European banks pay peers to hold cash in credit crunch reversal*.

Looking simply at the comparative statics of the balance sheet, we see that for the financial market as a whole, there has been no overall change in size. The ECB has merely stepped in as an intermediary.

Table 4: Financial Market Balance Sheet Impact of ECB QE (excluding ESCB)

"hypothetical 2015"			
(in Euro billions)			
Assets		Liabilities	
Government Debt Held by Global Market (excluding EA banks & ESCB)	-4855		
Government Debt Held by EA Banks	-1870		
EA Bank Balances at ECB	+6725		
Total Change in Assets	0	Total Change in Liabilities	0

From the perspective of the global financial market, the ECB has engineered a swap: € 6725 in EA treasuries for an equivalent amount of EA bank balances at the ECB. The impact on EA banks in isolation is shown in Table 5.

Table 5: Balance Sheet Impact of ECB Purchase of EA Government Debt on EA banks (excluding ESCB)

"hypothetical 2015"			
(in Euro billions)			
Assets		Liabilities	
Government Debt Held by EA Banks	-1870	Interest Bearing Liabilities to Nonbanks	+4612
EA Bank Balances at ECB	+6725	Equity	+243
Total Change in Bank Assets	+4855	Total Change in Bank Liabilities	+4855

It is clear that EA bank liabilities must rise by an amount equivalent to the rise in assets. The determination of the breakdown between equity and interest bearing liabilities is derived from assumptions about prudential regulations. Assuming the European banking system, on average, will be required to meet a minimum leverage ratio of 5 percent, the increase in total EA banking system assets shown above would require a minimum of € 243 billion in additional capital⁶.

⁶ For details on post-crisis innovations to regulatory capital requirements related to total asset size and supplementary charges related to reliance on short-term financing, see Stella (2015), *Exiting Well*.

QE taxes the banking system. Assuming the opportunity cost of equity is 12 percent and using the revenue and cost structure applied in Table 2, we obtain a decline in banking system revenue of € 21 billion and an increase in costs of € 98 billion for a total decrease in system aggregate profit of € 119 billion. This would lower total profit to € 75 billion and the return on equity to 2.8 percent, hardly an attractive environment in which to raise capital.

Banks would presumably not wish to raise capital in this environment, indeed, they are already stressed. A likely reaction would be to cut deposit rates into negative territory in an attempt to shrink the balance sheet and thereby reduce capital requirements. Intermediation would gravitate toward nonbanks. But notice that, on the asset side, banks would need to shed real productive assets as they are unable to shed the noxious ECB deposits as long as QE is in place. Indeed, those who believe in QE—that the quantity of reserves is a key metric of success and the locomotive of the money multiplier (as defunct as the geocentric model of the solar system) would no doubt come up with ingenious ways to prevent banks from reducing reserves. One avenue—banks requesting to exchange reserves for physical Euro banknotes—could be nipped in the bud by imposing a significant administrative charge for doing so. Another avenue, paying taxes early—i.e. passing the hot potato to the government (the only significant nonbanks with accounts at the ESCBs) could be deterred by national governments.

QE, cleverly designed and applied with persistent determination, will burn the ECB brand into the hands of those holding bank reserves for as long as it is policy. As time passes, and more and more valuable assets are absorbed by the ECB from the market in exchange for useless reserves, banks will find it more and more difficult to raise capital, witness decreasing profitability, and be compelled to shed valuable assets to meet the leverage ratio—the very definition of a death spiral. At what point will the inevitable logic be grasped? Probably never. Of course the ECB will not apply QE to the extent I have imagined. It will do it in modest doses. The banking system will stagnate, credit will continue to decline. Perhaps the ECB will move on to buying up the banks' loan portfolios in a desperate attempt to reignite growth. More likely, as with an insidious cancer, the patient will begin to wither away, until it is realized, as with tobacco smoking, that the correlation with health is the inverse of what it had seemed at first. But by then how much time will have been lost?

Dear reader, lest I close on this somber note, allow me to say what I have *not* said here. I have not said that treasuries and central banks are powerless to influence the market through debt management (swapping long term sovereign debt for short term sovereign debt—as was done by the Fed) nor that taking credit risk to the sovereign balance sheet (buying equities, private sector debt, and loans) is ineffective. I *am* saying that QE is neither necessary nor sufficient to employ those tools—debt management and fiscal policy—and that the application of QE in their absence—is *worse* than pointless.

How important the hold certain words, and their rhyme through history, have upon us:

“All those blunders were in considerable measure a consequence of the mistaken interpretation of excess reserves and their significance.”⁷

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⁷ Friedman and Schwartz (1963), A Monetary History of the United States: 1867-1960, page 526.