

**From:** Tim P. Clark  
**To:** Rita C. Proctor; Donald L. Kohn; Kevin Walsh; Deborah P. Bailey; Roger Cole; Corvann Stefansson; William Rutledge; Arthur Aquino; Brian Peters; Jennifer Burns; Mac Alfriend; Randall S. Kroszner; Scott Alvarez  
**Subject:** Update on BAC\_ML  
**Date:** 12/19/2008 02:29 PM

---

**The following is a quick update and some preliminary views in advance of the call at 3:30 today.**

We (FRB Richmond, FRB NY and Board staff) are continuing to gather needed info for full assessment of ML through Bank of America (BAC) management, though much of what is needed for a good preliminary assessment on ML is in our possession and being analyzed. We also had a pretty good sense already of conditions at BAC, which have also deteriorated recently as evidenced by their own projection for Q4 having gotten significantly worse in the past week or two, and we are currently working to update our views on BAC as a stand alone entity. As they themselves noted the other night at our meeting, even on a stand alone basis, the firm is very thinly capitalized in terms of tangible common equity (TCE) relative to assets and exposures.

- It is notable that a quick analysis of the TCE/assets ratios of BAC and ML on stand-alone basis and as a combined entity implies that the recent decline in BAC's projected year-end 2008 stand alone number appears to be driving as much of the decline in the combined pro forma ratios as the losses at ML, even as they are portraying the losses at ML as being the key issue here. This is largely the result of declining ratio at BAC stand alone and the fact that most capital in the combined entity will be coming from BAC.

The preliminary assessment on the ML loss numbers is that ML does not appear to be being overly aggressive in some of its larger markdowns -- though we can't yet say that with certainty and for all positions -- so the size of the losses/write downs may not be over-stating the problems at ML to a large extent in an attempt to 'kitchen sink' the losses in advance of the acquisition date. Details on the sources of the 'new' \$4 billion of losses are being sought right now and that will be included in the analysis once we get a bit more clarity.

General consensus forming among many of us working on this is that given market performance over past several months and the clear signs in the data we have that the deterioration at ML has been observably under way over the entire quarter -- albeit picking up significant around mid-November and carrying into December -- Ken Lewis' claim that they were surprised by the rapid growth of the losses seems somewhat suspect. At a minimum it calls into question the adequacy of the due diligence process BAC has been doing in preparation for the takeover. [As an aside, BAC management told us they could not provide electronic versions of ML files, and one wonders how that is possible since they have been doing the due diligence for months and having e-files would have made that much simpler and more effective for them. May have helped limit their current surprise.]

As per our meeting with management the other night, BAC management has identified a \$78 billion portfolio of positions and exposures that are causing the problems at ML. Those are as follows:

<b>Merrill Lynch 'Legacy Portfolio'</b>	
\$ millions	
Leveraged Finance	7,309
CRE	5,013
ABS CDO (Super Senior)	776
Residential Mortgages, largely Non-US	4,008
Current Exposure to Financial Guarantors (net of CVA/reserve)	9,325
CPI/PCG	3,428
Investment Portfolio	20,968
Current Exposure to Credit Derivatives Product Companies	3,732
Private Equity (net)	10,784
Asset Based Lending	13,170
<b>Total</b>	<b>78,513</b>

NY Fed is working today to analyze the key positions as well as others at ML to see how much further deterioration is likely or may be coming from this portfolio. The firm has substantial continuing notional hedges purchased from financial guarantors (\$53 billion) and from credit derivative product companies (\$18 billion) that could drive exposures to those sources higher and generate further associated write-downs in the value of the hedges if those entities deteriorate further.

Charlotte Fed folks have the lead in updating our analysis of BAC on a stand alone basis, both the current and projected condition of the firm. Notable issues are the thin level of tangible common equity relative to assets and exposures, the recent deteriorating condition noted above and what appear to be quite optimistic underlying assumptions for the economy and performance of assets and markets in 2009 that are driving a relatively positive projection for the firms' stand alone condition out through 2009. Even if the projections are an adequate reflection of expected losses from some portfolios going forward, they appear to clearly not be well prepared for any further deterioration in economic conditions and/or asset performance. Which is to say the firm is not well prepared to withstand substantial unexpected losses that would result from further economic deterioration and market disruptions. BAC has a number of sources of potential vulnerability in its own portfolios, including consumer loans, particularly credit cards and mortgage-related, as well as relatively large exposure to commercial real estate-related positions and a commercial lending portfolio (funded and commitments) with a very large share of the dollar value of exposures stemming from 'BB' and below-rated borrowers.

We plan to finalize the analyses described in this note today/tonight and work this weekend to create a forward-looking view of the extent of the vulnerabilities for the combined entity, which we will shoot to wrap up by Sunday night and provide the full analysis Monday morning.

please forward to any relevant parties I may have accidentally left of the distribution and let me know if you have any questions  
tim

Tim P. Clark  
Senior Advisor  
Banking Supervision & Regulation  
Federal Reserve, Board of Governors

**Analysis of Bank of America & Merrill Lynch Merger**

*Restricted FR  
(Second Draft)  
December 21, 2008*

**I. Summary Overview**

**Bank of America (BAC) has sufficient resources to consummate the merger with Merrill Lynch (MER).**

- Upon consummation of the merger, based on current projections for both firms, the combined entity would have an 8.6% Tier I risk based capital ratio and a Tier 1 leverage ratio of 5.2%. However, the amount of tangible common equity at the combined firms will be among the lowest of the large BHC at 2.2% on day one of the acquisition.
- An immediate vulnerability would be BAC's access to market funding. On a stand alone basis, BAC has a significant short term funding dependence. MER has significant dependence on the government funding programs, and will likely increase the short term funding pressure on the combined firm.
- The principal vulnerability of the combined firm, similarly to other large BHCs, would be:
  - Potential losses from BAC's consumer and commercial credit portfolios, which will be contingent upon the economic environment going forward and will be realized over time.
  - MER has the largest exposure to financial guarantors across US financial institutions. Unlike the timing of loss recognition in the loan portfolios, losses associated with financial guarantor exposures could be realized in a more compressed timeframe. Moreover, the timing of potential losses from these exposures is highly uncertain.

**From the perspective of regulatory capital, Bank of America ("BAC") currently exceeds regulatory minima for well-capitalized on a stand-alone basis, with an expected Tier I capital ratio of 9.2% at year-end 2008. However, only about one third of the firm's Tier I capital is in the form of tangible common equity.**

- When viewed from the standpoint of tangible common equity to total assets (the TCE ratio) the firm is among the more thinly capitalized of the five largest domestic BHCs. This ratio is closely watched by analysts and investors and further deterioration of the firm's TCE ratio would likely cause increased uncertainty among market participants about the firm's prospects.

**Since September, continued economic deterioration and substantial market disruptions have weakened the condition of both firms.**

- MER's deterioration has been substantially worse than BAC's and all but ensures that the firm could not survive as a stand-alone entity without raising substantial new capital (and/or government support) that is unlikely to be available given the uncertainty about its prospects and further future losses.
- Management now projects Q4 after-tax losses of roughly \$14 billion for MER, and approximately a \$1.4 billion after-tax quarterly net loss for BAC, which for BAC represents more than four times management's projected losses from just two weeks ago. The losses at MER will erode over 50% of MER's tangible common equity.

**While the extent of the market disruptions that have occurred since mid-September were not necessarily predictable, BAC management's contention that the severity of MER's losses only came to light in recent days is problematic and implies substantial deficiencies in the due diligence carried out in advance of and subsequent to the acquisition.**

- In the merger proxy statement and investor presentations the firm explicitly asserts that it has an understanding of MER's business activities, financial condition and prospects as well as an understanding of the outlook for the firm based on prospective economic and market conditions.
- Staff at the Federal Reserve has been aware of the firm's potentially large losses stemming from exposures to financial guarantors, which is the single largest area of risk exposure and driver of recent losses that have been identified by management. These were clearly shown in Merrill Lynch's internal risk management reports that BAC reviewed during their due diligence.
  - The potential for losses from other risk exposures cited by management, including those coming from leveraged loans and trading in complex structured credit derivatives products ('correlation trading') should also have been reasonably well understood, particularly as BAC itself is also active in both these products.
  - Having done a quick analysis on the specific positions/exposures at MER that generated the largest losses for MER in Q4, FRS staff see no clear indication that they were driven by overly aggressive marking down of positions in advance of the acquisition. This general conclusion notwithstanding, some of the marks do appear somewhat conservative and the appropriateness of the timing of the impairment charge taken against goodwill is hard to assess. On the other hand, credit valuation adjustments against financial guarantors are not particularly aggressive relative to those staff has observed at other firms.

**The combined firm remains vulnerable to a continuing downturn.**

- At the time of the completion of the merger, based on current projections for both firms, the combined entity would have an 8.6% Tier 1 capital ratio, and a TCE ratio

of less than 2.2%. This is in relation to BAC's stand-alone ratios of 9.2% and 2.6%, respectively.

- Based on stress analysis performed by staff, under moderate and severe stress scenarios the combined BAC-MER firm would be among the most vulnerable of the largest domestic BHCs, but not substantially more vulnerable than many others.
- In the event that actual losses were in line with stress projections, TCE and Tier I capital would be substantially eroded, with Tier I risk based capital ratios of 6.4% and 4.0%, respectively, under the moderate and severe stress tests.
- Resulting from the impacts of a moderate or severe recession, our scenario analysis suggests that the combined entity would need to raise roughly \$21 billion and \$67 billion of Tier I capital, achieve a Tier I risk-based capital ratio of 7.5% at year-end 2009.



**From:** Scott Alvarez  
**To:**  
**Subject:** Re: Fw: BAC  
**Date:** 12/23/2008 11:23 AM  
**Encrypted**

---

I agree we and Treasury gave our views on what we thought the likely effects would be of not proceeding, but that's different than ordering Lewis to proceed. We didn't take the decision out of his hands or threaten punitive supervisory action if he didn't proceed. I want to avoid the Fed being the centerpiece of the litigation. Lewis needs to have every incentive to analyze the facts and document and justify his decision. If he thinks he can rely on us, he'll assert there was nothing he could do and he can be reckless--not the right incentive. Moreover, once we're in the litigation, all our documents become subject to discovery and, as you'll remember from Deborah's presentation, some of our analysis suggests that Lewis should have been aware of the problems at ML earlier (perhaps as early as mid-November) and not caught by surprise. That could cause other problems for him around the disclosures BA made for the shareholder vote. In any event, we can always decide at the time of litigation whether to help even if now we hold fast.

Scott

To Chairman Dennis Kucinich:

At the request of the Domestic Policy Subcommittee, I have done a statistical analysis of the Merrill Lynch weekly loss data for the 12 weeks from September 26 to December 12, 2008. The purpose of the analysis was to determine what loss trends could reasonably be deduced from the loss data available to decision makers at three points in time: November 7, November 14, and December 12. I have used the widely accepted and highly standardized least squares regression curve fitting technique to test both a straight (linear) and a curved (parabolic or second order) fit to the data. This has resulted in the following conclusions:

1. Looking first at the 7 weeks of loss data available by November 7 shows:

a. It is clear that there is a strong downward trend in the data that is almost certainly not due to chance.

b. A straight line downward trend showing a steady \$701 million loss per week fits the data quite well.

c. If one were trying to determine whether the loss per week might be increasing or decreasing rather than staying steady at \$701 million per week (i.e. by fitting a curved rather than a straight line), there is i) no evidence that the loss per week is decreasing, and ii) some evidence that the losses per week are increasing.

The best curved (parabolic) line fit to the data shows the weekly losses worsening to \$1250 million loss per week by November 7--and, when projected forward, worsening every week thereafter due to the downward curvature of the fitted line. Note that this curved line fit only improves the accuracy (root mean square error) of the fit by about 5%, so the case for increasing losses per week by November 7 is not overwhelming.

2. Adding one more week of data to assess the situation as of November 14 shows:

a. Fitting a straight line downward trend yields a steady \$1007 million lost per week, over 40% worse than the November 7 assessment.

b. Adding in the November 14 week significantly strengthens the evidence for deteriorating (as opposed to steady) weekly losses. The curved line fit now shows the weekly loss deteriorating to \$2400 million per week by November 14, nearly double the November 7 curved line assessment. Relative to the straight line fit, the curved line now improves the accuracy of the fit by 51% (root mean square error)--an improvement in accuracy that it would be imprudent to ignore.

3. Looking at the 12 weeks of loss data available by December 12 shows:

a. Assuming steady weekly losses, the best straight line fit shows \$1276 million lost per week, over 80% worse than the November 7 weekly loss estimate--and almost identical to the November 7 curved line assessment.

b. Assuming the possibility of a deteriorating trend, the curved line fit yields a weekly loss that has worsened to \$2030 million by December 12, not as bad as the November 14 estimate but still 62% higher than the November 7 curved line weekly loss. The curved line fit yields 14% better accuracy (root mean square error) than the straight line fit, stronger evidence for a deteriorating trend than on November 7, but not strong enough to make the curved line fit an obvious choice.

c. Given the weekly loss data available to decision makers on November 14 as compared to the data available on December 12, the evidence for a constantly deteriorating (i.e. curved) trend is much stronger on November 14 than it is on December 12. This follows from the fact that the November 14 curved fit improves accuracy over the straight line fit by 51% whereas the December 12 curved fit only yields 14% improvement.

As a caveat to the above conclusions, it is important to keep in mind that all of the above numerical estimates are necessarily quite imprecise because statistical sample sizes of 7 to 12 data points are much too small for, say, plus or minus 10% accuracy. That caveat does not invalidate any of the above conclusions as to what a decision maker could reasonably conclude on November 7, November 14, and December 12.

For documentary support of the above, I have attached the detailed results of the computer runs on which I have based these conclusions.

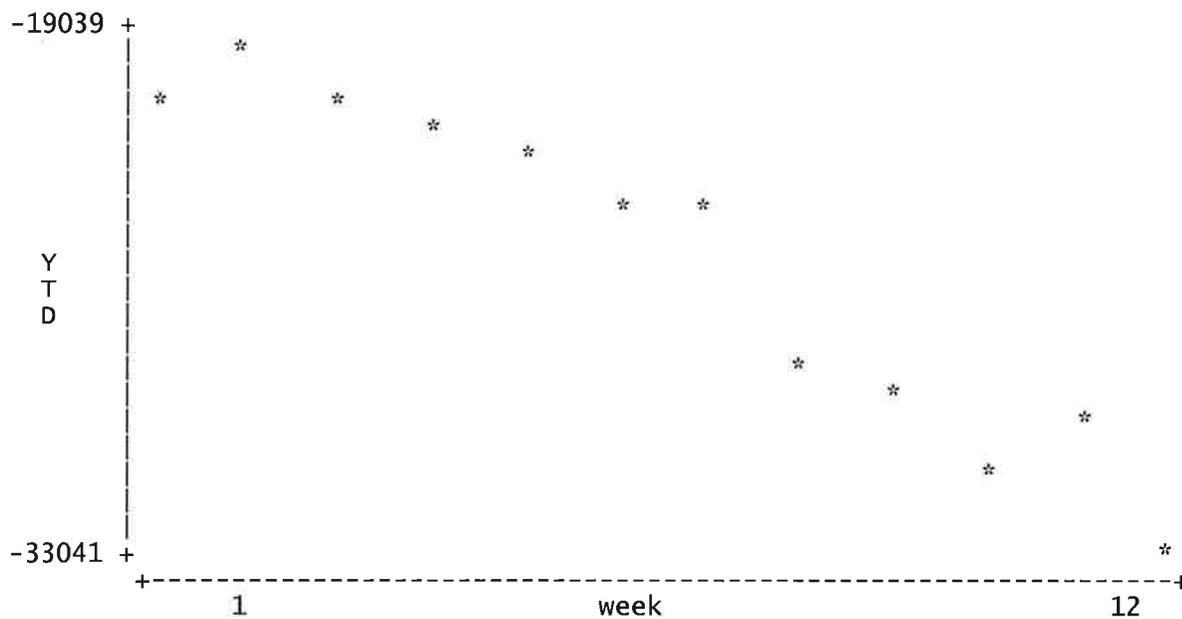
Pierre M. Sprey  
June 9, 2009

Pierre Sprey letter attachment 060909.txt

```
. *
. *
. *      Data
. *
. li
```

	qtd	ytd	week	week2
1.	-8412	-19824	1	1
2.	-323	-19039	2	4
3.	-650	-20312	3	9
4.	-907	-20569	4	16
5.	-1609	-21271	5	25
6.	-3778	-23440	6	36
7.	-3451	-23113	7	49
8.	-7897	-27559	8	64
9.	-8933	-28596	9	81
10.	-11037	-30699	10	100
11.	-9182	-28845	11	121
12.	-13863	-33041	12	144

```
. plot ytd week
```



```
. *
. *
. *      weeks 1-7
. *
. reg ytd week if _n<8
```

## Pierre Sprey letter attachment 060909.txt

Source	SS	df	MS	Number of obs =	7
Model	13759228	1	13759228	F( 1, 5) =	26.73
Residual	2574094.86	5	514818.971	Prob > F =	0.0036
				R-squared =	0.8424
				Adj R-squared =	0.8109
Total	16333322.9	6	2722220.48	Root MSE =	717.51

ytd	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
week	-701	135.5964	-5.17	0.004	-1049.562 -352.4383
_cons	-18277.14	606.4057	-30.14	0.000	-19835.96 -16718.33

. \* F-test and (equivalent) t-test indicate 0.36 percent chance of  
. \* random occurrence if there is no linear relation

. reg ytd week week2 if \_n<8

Source	SS	df	MS	Number of obs =	7
Model	14457747	2	7228873.52	F( 2, 4) =	15.42
Residual	1875575.81	4	468893.952	Prob > F =	0.0132
				R-squared =	0.8852
				Adj R-squared =	0.8278
Total	16333322.9	6	2722220.48	Root MSE =	684.76

ytd	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
week	28.52381	611.5544	0.05	0.965	-1669.423 1726.471
week2	-91.19048	74.71326	-1.22	0.289	-298.6277 116.2468
_cons	-19371.43	1067.119	-18.15	0.000	-22334.23 -16408.63

. \* F-test indicates 1.32 percent chance of random occurrence given  
. \* that there is no quadratic relation, but neither coefficient is  
. \* significant even at the 10 percent level and the second-order term  
. \* only marginally improves the fit.

. \*  
. \* weeks 1-8  
. \*

. reg ytd week if \_n<9

Source	SS	df	MS	Number of obs =	8
Model	42603150	1	42603150	F( 1, 6) =	24.47
Residual	10447476.9	6	1741246.14	Prob > F =	0.0026
				R-squared =	0.8031
				Adj R-squared =	0.7702
Total	53050626.9	7	7578660.98	Root MSE =	1319.6

ytd	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
week	-1007.155	203.613	-4.95	0.003	-1505.378 -508.9318
_cons	-17358.68	1028.195	-16.88	0.000	-19874.58 -14842.78

. \* F-test and (equivalent) t-test indicate 0.26 percent chance of  
. \* random occurrence if there is no linear relation

Pierre Sprey letter attachment 060909.txt

. reg ytd week week2 if \_n&lt;9

Source	SS	df	MS			
Model	49234246	2	24617123	Number of obs =	8	
Residual	3816380.86	5	763276.173	F( 2, 5) =	32.25	
Total	53050626.9	7	7578660.98	Prob > F =	0.0014	
				R-squared =	0.9281	
				Adj R-squared =	0.8993	
				Root MSE =	873.66	

ytd	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
week	780.8988	621.4349	1.26	0.264	-816.5506	2378.348
week2	-198.6726	67.40408	-2.95	0.032	-371.9403	-25.4049
_cons	-20338.77	1218.878	-16.69	0.000	-23471.99	-17205.54

. \* F-test indicates 0.14 percent chance of random occurrence given  
. \* that there is no quadratic relation and the second-order term  
. \* improves the fit.

. \*  
. \*  
. \* weeks 1-12  
. \*

. reg ytd week

Source	SS	df	MS			
Model	232938917	1	232938917	Number of obs =	12	
Residual	21160593.7	10	2116059.37	F( 1, 10) =	110.08	
Total	254099511	11	23099955.5	Prob > F =	0.0000	
				R-squared =	0.9167	
				Adj R-squared =	0.9084	
				Root MSE =	1454.7	

ytd	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
week	-1276.301	121.6455	-10.49	0.000	-1547.344	-1005.258
_cons	-16396.38	895.2863	-18.31	0.000	-18391.2	-14401.56

. \* F-test and (equivalent) t-test indicate 0.00 percent chance of  
. \* random occurrence if there is no linear relation

. reg ytd week week2

Source	SS	df	MS			
Model	239209821	2	119604910	Number of obs =	12	
Residual	14889690	9	1654410	F( 2, 9) =	72.29	
Total	254099511	11	23099955.5	Prob > F =	0.0000	
				R-squared =	0.9414	
				Adj R-squared =	0.9284	
				Root MSE =	1286.2	

ytd	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
week	-385.2098	470.1662	-0.82	0.434	-1448.8	678.3801
week2	-68.54545	35.2075	-1.95	0.083	-148.1903	11.09944
_cons	-18475.59	1329.365	-13.90	0.000	-21482.82	-15468.36

. \* F-test indicates 0.00 percent chance of random occurrence given  
. \* that there is no quadratic relation and the second-order term

Pierre Sprey letter attachment 060909.txt

. \* improves the fit.

. \*

-----  
-----  
-----