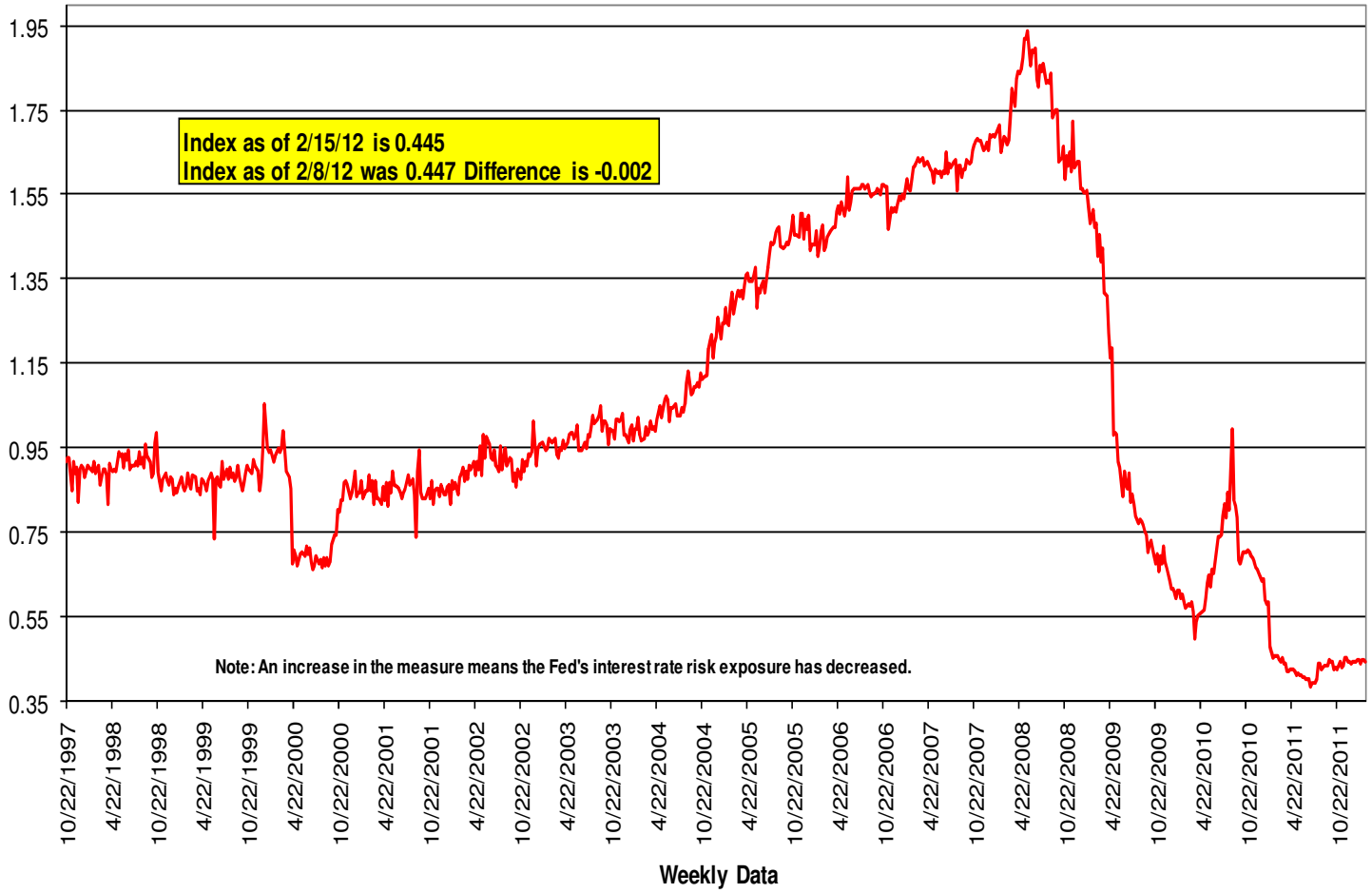
Chart 1: CUMB-E Index of Federal Reserve Policy Flexibility as of 2/15/11

Percentage point parallel shift in yield curve needed to exhaust Federal Reserve capital account



Source: Barclays Capital, Federal Reserve H.4.1 release tables 2 and 9, and Cumberland Advisors.

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Chart 2: Federal Reserve Leverage and Reliance Upon Bank Excess

Reserves to fund assets as of 2/15/11

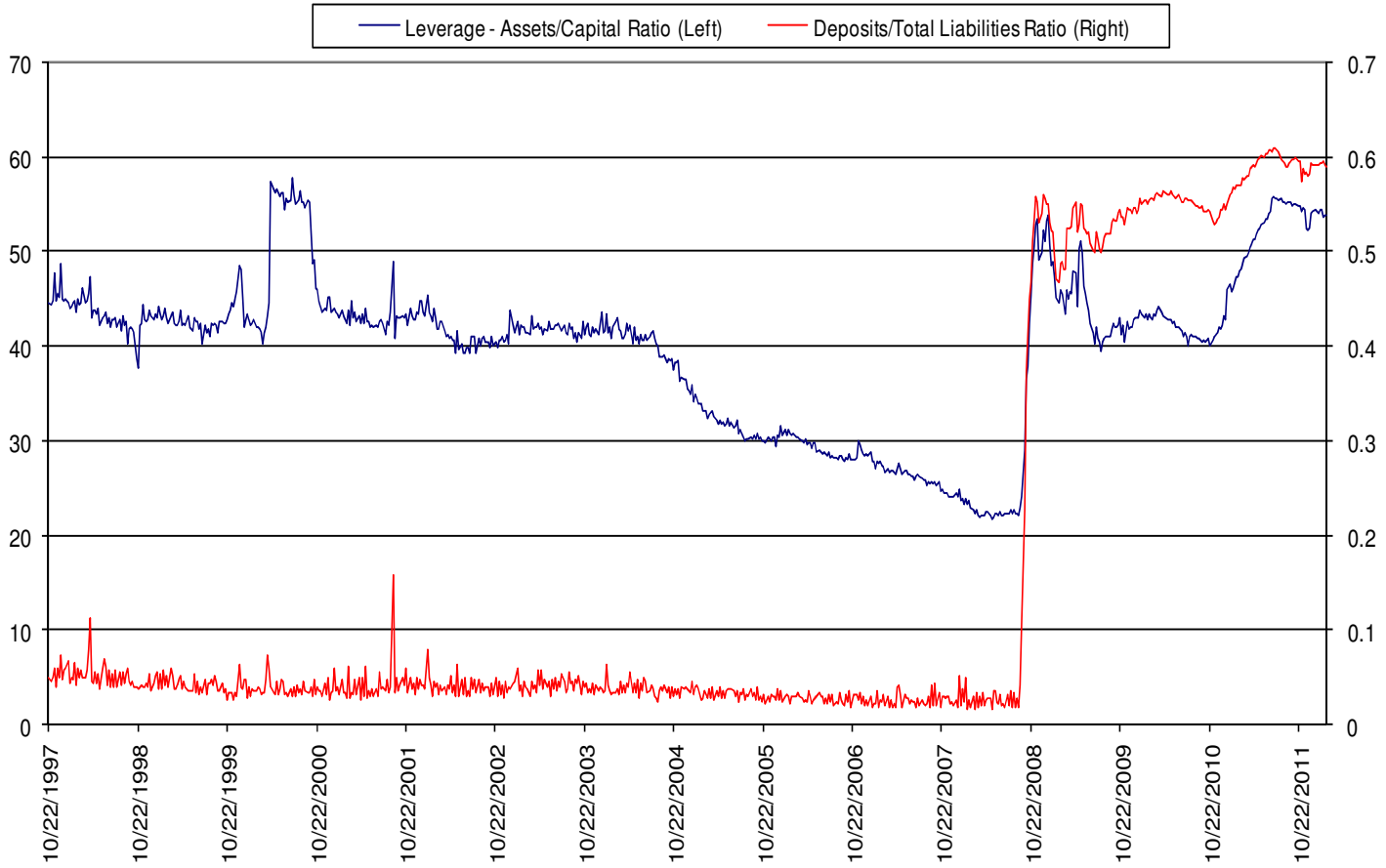

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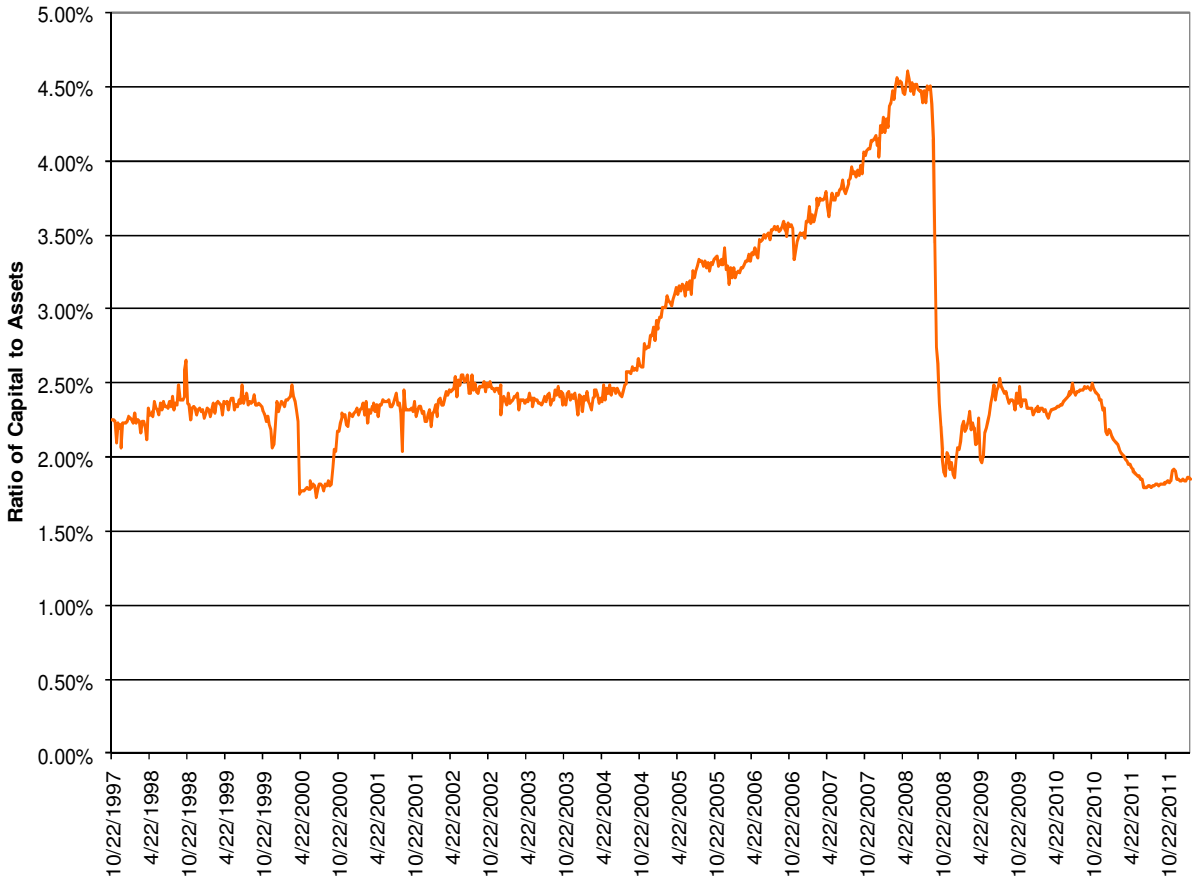
Chart 3: Federal Reserve Capital Ratio

Certificates marked to market



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Documentation of data sources and variable definitions for CUMB-E Indices of Federal Reserve Policy Flexibility

Standard measures of the duration of a bank's capital account (See Bierwag and Kaufman(1983)) consider changes in interest rates on both the asset and liability side of the balance sheet. Because the nominal value of all the Fed's non-capital liabilities, which consist chiefly of currency and reserve deposits of member banks, equals their book value, we assumed for purposes of the index that they were all payable upon demand, they essentially have a duration of zero for computational purposes.

The real nuances of the computations center on the Fed's asset side of its balance sheet and are taken from Table 9 and Table 2 of the Board's H.4.1 report released each week. The two asset categories that matter the most in terms of approximating the Fed's interest rate risk exposure of the large holdings of Treasury securities in the 1-5 year maturity category, the 5-10 year maturity category and over 10 years category, and the very large portfolio of mortgage backed securities which have maturities over 10 years.

To estimate the durations of the Fed's assets, approximations for the modified durations of the Fed's Loans, Treasuries and mortgage backed securities were obtained from the data provided by Barclays Capital on their website. The formula used to calculate the duration of capital is:

$$\text{DURATION OF CAPITAL} = \frac{\Delta \text{K}}{\text{K}} = -(D_A)(\frac{A}{K})\Delta i$$

Where K is capital, DA is the duration of assets, A is assets and i is the percentage point change in interest rates. This formula is used to determine how much of a change in interest rates would cause a 100% decline in the Fed's capital ratio to zero.

The asset categories used and the associated duration sources are contained in the table which follows.

[1] Again, we invite suggestions as to how to improve the estimates and what alternative data sources might exist. https://live.barcap.com/BC/barcaplive?menuCode=MENU_FI_WELCOME

Source of Duration Estimates – Barclay's https://live.barcap.com/BC/barcaplive?menuCode=MENU_IDX_1061		
Asset	Proxy Duration Measure	Source Main source page
Term Auction Credit	Short-term 1-3 Mo. Returns Modified Duration	Col. 2 – Americas, Other Americas, Short Term Under Short Term 1-3 mo. category
Other Loans with less than 1 yr maturity	Duration of Short Term Treasuries	Col. 2 – Americas, Other Americas, Short Treasuries
Other Loans with 1-yr to 5 yr maturity	Treasuries 1-5 year modified duration	Col. 2 – Americas, U.S., Aggregate, Treasuries, 1-5 yr. .
US Treasuries with leas than 1yr maturity	Duration of Short Term Treasuries	Col. 2 – Americas, Other Americas, Short Term - Treasuries
US Treasuries 1- 5 yr	Treasuries 1-5 year modified duration	Col. 2 – Americas, U.S., Aggregate, Treasuries, 1-5 yr.
US Treasuries 5-10 yr	US Treasuries 5-10 year modified duration	Col. 2 – Americas, U.S., Aggregate, Treasuries, 5-10 yr.
US Treasuries over 10 yr	Long US Treasury durations modified	Col. 2 – Americas, U.S., Aggregate, Treasuries, Long
US Agency Securities 1 yr or less	Short Treasury Duration	Col. 2 – Americas, Other Americas, Short Term - Treasuries
Fed Res Banks: Fed Agency Security Holdings: Over 1-Yr to 5-Yrs (EOP, Mil.$)	Treasuries 1-5 year modified duration	Col. 2 – Americas, U.S., Aggregate, Treasuries, 1-5 yr.
Fed Res Banks: Fed Agency Security Holdings: Over 5 to 10 Yrs (EOP, Mil.$)	US Treasuries 5-10 year modified duration	Col. 2 – Americas, U.S., Aggregate, Treasuries,-10 5 yr. .
Fed Res Banks: Federal Agency Security Holdings: Over 10 Yrs (EOP, Mil.$)	Long Agency (FNMA/FHLMCC Component	Col. 2 – Americas, Other Americas, Customized, Long Agency (FNMA/FHLMC Component)
Reserve Bank Credit: Mortgage-Backed Security (EOP, Mil.$) - TOTAL	MBS Duration	Col. 2 – Americas, U.S., Aggregate, Securitized, MBS Fixed Rate