

An Accountant's Discussion of
“Bank Economic Capital” by
Hirtle and Plosser

Stephen G. Ryan, NYU Stern

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Overview of Paper

- Bank capital measures are based on GAAP with surprisingly few adjustments given the distinct objectives of bank regulators and the FASB (see slide 7)
- These measures performed very poorly for the four large regional banks that failed in 2023. Moreover, the measures have long been and remain problematic, partly because of these different objectives and partly because of the nature of banks business model/deposit intangible (see slide 6)
 - Nice quote on pp 7-8: “during times of stress, creditors are sensitive to economic solvency rather than accounting ratios. Thus, it is important to have solvency measures that do not depend solely on accounting and regulatory constructs to help identify weak banks.”
- The authors develop two measures of the level of bank capital that incorporate sensible differences from GAAP measurements given bank regulators’ primary objective and practical considerations (see slides 3-5)
- The authors conduct interesting and readily interpretable graphical analyses of the time-series of their measures versus traditional capital measures, and they effectively run horseraces comparing the ability of these measures to predict bank distress in general and for the four large regional banks that failed in 2023

Primary Adjustments to GAAP

- The authors' economic capital measures include the following primary adjustments to GAAP measurements of financial instruments
 - Fair values for all financial assets
 - Fair values are reported or estimated depending on information in call reports
 - Under GAAP, loans HFI and HTM securities are measured at amortized cost less credit loss allowance
 - ~ Riskless present values for liabilities, with two approaches regarding withdrawals/interest-rate beta for (uninsured) demand deposits
 - Gradual withdrawals (5%/year) with low interest-rate beta yields economic capital measure (EC)
 - Banks' business model holds
 - Riskless present value < amortized cost (GAAP)
 - Immediate repricing to market rates/interest-rate beta of one (akin to a run, if financing can be replaced) yields economic capital measure with deposit repricing (R-EC)
 - Banks' business model fails (though bank may not)
 - Riskless present value = amortized cost (GAAP)

Other Adjustments to GAAP

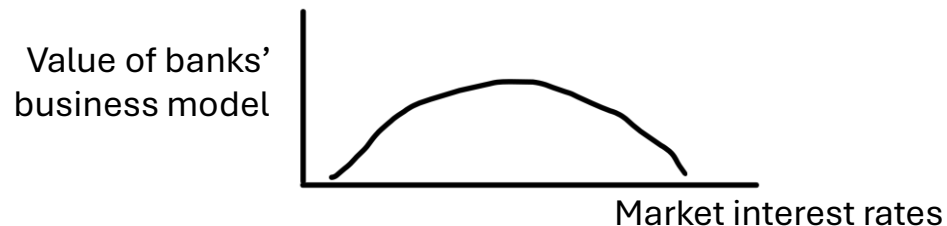
- Ignore intangible assets (standard)
- Create liability for the present value of necessary operating expenses
 - Makes more sense for EC (going concern effectively assumed) than for R-EC (going concern effectively in doubt)
 - Unlike loan commitments, these expenses do not constitute a current obligation and thus are not even conceivably an accounting liability'

Non-adjustments to GAAP

- Loan commitments
 - Under GAAP, most loan commitments are only recognized as credit loss reserve liabilities under the ILM and now CECL
 - Ignoring the potential liquidity requirements of these commitments could be a significant limitation in some circumstances. E.g., my understanding is that crypto firms drew on commitments at Silvergate
- Derivatives-based hedges???
 - Under GAAP, derivatives are always measured at fair value, though unrealized gains and losses on cash flow hedges are recorded in AOCI
 - The GAAP treatment of the hedged items depends on whether they are economically or cash flow hedged (no change to measurement, which may be off-balance sheet), or fair value hedge (hedged item fair valued)
 - Doesn't matter much outside of very large banks

Banks' Business Model/Deposit Intangible

- Banks' goal typically is to invest in (at least) market-rate loans and securities, finance those assets primarily with below-market-rate demand deposits, and earn healthy interest-rate spreads
- Because depositors value convenience and a sizeable (though rapidly declining) fraction of deposits is FDIC-guaranteed, deposits normally are “sticky” with low interest-rate beta, and banks' business model is robust. If the model stays robust, banks can bear sizeable losses on assets and still recover over time
 - Long-duration assets are economically hedged by sticky deposits.
- Occasionally large losses on assets, sharp interest-rate increases, or other events (e.g., SVB's sale of AFS securities) cause deposits to run or become interest-rate sensitive, imperiling banks' business model. E.g., the economic value of banks' business model to market interest rates usually looks something like this



- If banks can't replace any lost financing, they typically are shut down quickly by the FDIC (SVB, First Republic, Signature). Even if they can replace lost financing with market-rate financing, the loss of interest rate spread makes it difficult for banks to recover from sizeable losses on assets (Silvergate)
 - Economic hedge fails

Bank Regulators and the FASB have Distinct Primary Focuses

- Primary focuses
 - *Bank regulators*: Solvency
 - *FASB*: Equity valuation
 - Also, the FASB generally addresses one accounting issue at a time, and it usually does not write industry-focused standards
- On the asset side, these focuses both mostly indicate that fair value measurement is preferred, at least in isolation/ignoring the measurement of liabilities
- In principle, fair value measurement of liabilities, which incorporates banks' own credit risk, makes sense for equity valuation (as long as assets are also fair valued), whereas the authors' riskless present valuation of demand deposits makes sense for solvency

But Bank Regulators and the FASB also Have a Common Practical/Political Problem

- How to measure demand deposits given banks' usually robust business model. Is it better to be right most of time, when the economic hedge holds but it doesn't matter much, or right the relatively rare times when the economic hedge fails and it matters? IMHO, the latter, but...
- The resolution of this question has involved the following difficulties
 - *For the FASB, a CATCH-22:* Many assets (loans HFI and HTM securities) are measured at amortized cost less a credit loss allowance, so demand deposits can't be fair valued; demand deposits are measured at amortized cost, so the economically hedged assets can't be measured at fair value
 - *For bank regulators, time-inconsistency:* Banks' business model usually holds, so the concern is only on the asset side; once the potential for deposits to run or become interest-rate sensitive arises, incorporating this potential into capital measures likely constitutes a self-fulfilling prophecy

But Bank Regulators and the FASB also Have a Common Practical/Political Problem (2)

- I interpret the authors as effectively finessing this time-inconsistency problem by proposing to use both EC and R-EC measures at all times, even though R-EC logically becomes more relevant as the likelihood that deposits run or reprice increases
 - It would be nice to provide some results demonstrating this changing relevance, although a dynamic measure of economic capital that incorporated this likelihood would not finesse the time-inconsistency problem

A Few, Mostly Expository, Suggestions for the Authors

- There are a lot of details (re assumptions and estimation) in the text; try to migrate as many of these details as possible to the appendices
- Try to make the differences between your economic capital measures (EC and R-EC) and traditional capital measures (e.g., TCE, MVE-TCE) as clear and intuitive as possible using simple equations or perhaps Venn diagrams
 - The discussion of the difference of EC and EVE in the last full paragraph on p. 10 is in this vein

A Few, Mostly Expository, Suggestions for the Authors (2)

- Discuss the evolution of these measures for the four failed regional banks, which differ in some respects, in terms of what effects each measure captures and when the measure captures those effects relative to the timing of the interest rate rise. E.g.,
 - SVB and First Republic held fixed-rate residential-mortgage-related assets (securities for SVB, loans for First Republic) in addition to high uninsured deposits, a toxic combination w.r.t. interest rate and interest-rate-motivated prepayment risks
 - Silvergate and to a lesser extent Signature had crypto exposures on both sides of their balance sheets, a concentration risk that realized when FTX collapsed

A Few, Mostly Expository, Suggestions for the Authors (3)

- Some of the details could be eliminated or simplified by conducting the analysis on the subsample of public banks, for which since 1991 FAS 107 disclosures of the fair value of financial instruments in financial reports provide fair values of essentially all of banks' financial assets and most of their financial liabilities (but not demand deposits). Since 2018 under ASU 2017-12, financial reports also include better data on hedges
 - Bank regulators are mostly concerned about failures of large banks, which generally are public
- Focusing on uninsured deposits seems a bit limiting
 - Even if they don't run, insured deposits large enough to exceed depositors' short-term liquidity needs can become interest-rate sensitive when rates rise sufficiently
- Par value is not an accounting measurement basis. For instruments that don't amortize or appreciate much prior to maturity (e.g., coupon bonds with coupon rate equal to market rate), par value may approximately equal amortized cost. For short-term instruments or low-risk instruments that don't amortize or appreciate much prior to maturity, par value may approximately equal fair value