

## A Case for CCAR Transparency

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What is it about CCAR that keeps bringing us back to questions of transparency? A year ago, Federal Reserve Vice Chair Randal Quarles called for significant improvements in the transparency of the CCAR process as part of policy proposals for CCAR's next chapter.<sup>2</sup> Since then, the Fed has taken some steps towards increasing disclosure, but key parts of CCAR remain opaque.

As a risk practitioner who's been involved in CCAR since its inception, I'm a strong supporter of supervisory stress testing and consider it to be the most powerful policy innovation to emerge from the crisis. But in my experience, lack of transparency has been CCAR's Achilles heel. Keeping the banks guessing about CCAR's models and scenarios is not a public virtue: It leads to uncertainty, where banks don't know the true regulatory costs of risk. And since risk is a key factor of production in banking, uncertainty obscures risk-return tradeoffs across the firm, undermining sound capital planning, balance sheet management, and business planning.

The reason we're still having a debate over transparency is that there's an important school of thought that regards lack of transparency of the models and scenarios the Fed uses in CCAR as a feature, and not a bug, of supervisory stress testing. For example, Mark Flannery, in a paper presented at a recent Fed conference, argues against additional disclosure on the grounds that doing so would slow down the Fed's ability to change CCAR models, and lead to a model "mono-culture" where banks abandon their internal models and adopt the Fed's "open book" models instead.<sup>3</sup> Some policymakers and commentators have also argued that CCAR

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<sup>2</sup> Randall K. Quarles (2018), "A New Chapter in Stress Testing," speech delivered at the Brookings Institution, Washington, D.C., November 9, <https://www.federalreserve.gov/newsevents/speech/files/quarles20181109a.pdf>.

<sup>3</sup> Mark J. Flannery (2019), "Transparency and Model Evolution in Stress Testing," prepared for conference at the Federal Reserve Bank of Boston, Boston, MA, July 9, <https://www.bostonfed.org/news-and-events/events/2019/stress-testing.aspx/>.

transparency would lead banks to operate with lower capital buffers, or create opportunities for “managing to the model” or “gaming the system.”<sup>4</sup>

While I’ll address these arguments below, it’s worth noting that calls for non-disclosure – or secrecy – in CCAR are unique within the bank regulatory framework. I can think of no other important regulatory process where policymakers, academics, or other commentators argue for withholding information about a binding regulatory requirement from the banks that are affected by it and from the public.

Secrecy and unpredictability should not be the principles on which we base the US financial regulatory framework. In my risk management role, I see enough uncertainty in the world as it is. Introducing an artificial source of uncertainty in CCAR is no way to make the financial system more resilient.

## **I. Transparency of the Fed models**

The case for transparency in CCAR has two branches: The first addresses the calibration of the CCAR shocks, which determines the nature and severity of the CCAR scenarios. The second concerns the models the Fed uses in their quantitative test, which, for a given set of stresses, determine the actual losses for an individual bank. Since the views on transparency differ most on disclosure of the Fed models, I’ll address those issues first.

Through much of CCAR, the Fed’s supervisory models have been, in effect, “black boxes”: There has been limited disclosure of the general methodology behind some of the Fed models in various white papers,<sup>5</sup> but not enough disclosure for banks to know with any confidence what the output of the Fed models will be for a given CCAR scenario. Instead, banks rely on ranges of estimates and a fair degree of guesswork to predict the outcome of the Fed’s quantitative test. In fact, there’s something of a cottage industry within banks of trying to build models to predict the Fed’s models, but the reality is that the predictions often don’t come very close. This is particularly true for the non-credit parts of CCAR, such as Pre-Provision Net Revenue (PPNR), Other Comprehensive Income (OCI), balance sheet growth, and the trading and counterparty losses associated with the Global Market Shock (GMS).

The limitations of bank predictions can be seen in instances of Mulligan use and conditional non-objections of the largest CCAR banks — the 8 US G-SIBs. As background, each year a CCAR bank submits its capital plan after the Fed has published that year’s CCAR scenario but before the bank knows what the Fed’s estimate of its losses will be. If the Fed’s estimate of losses exceeds the firm’s, and results in capital falling below minimum post-stress thresholds,

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<sup>4</sup> See, e.g., Daniel K. Tarullo (2014), “Stress Testing after Five Years,” speech delivered at the Federal Reserve Third Annual Stress Test Modeling Symposium, Boston, MA, June 25, <https://www.federalreserve.gov/newsevents/speech/tarullo20140625a.htm>.

<sup>5</sup> See, e.g., Board of Governors of the Federal Reserve System, “Dodd-Frank Act Stress Test 2019: Supervisory Stress Test Methodology,” March 28, 2019, <https://www.federalreserve.gov/publications/files/2019-march-supervisory-stress-test-methodology.pdf>.

then the firm is given a one-time opportunity to reduce its proposed capital distributions (known as “taking the Mulligan”). Alternatively, in certain circumstances, the firm may receive a conditional non-objection from the Fed.

By my count, going back to 2012, there have been 16 instances of the G-SIBs falling into one of these categories and coming up short in their CCAR estimates. Out of 64 total outcomes, this amounts to 25% of the time -- an impressive miss rate.

The result is that lack of disclosure of Fed models creates significant uncertainty. As noted above, without transparency, banks don't know the regulatory costs of risk. Since risk is a key factor of production, not knowing the regulatory cost obscures risk-return tradeoffs at multiple levels, from individual trading and lending decisions to top-level balance sheet management and capital planning. It's a bit like asking companies to make investment decisions without knowing the effective tax rate, because the IRS won't disclose the model it uses for calculating depreciation.

The cost of uncertainty isn't limited to the banks that have had to use the Mulligan to scale back their capital requests: It's embedded in the capital cushion that all banks maintain to clear CCAR minimums. And it cascades from there down to the inability of banks to know the cost of risk of individual transactions, hedges, asset classes, investments, and business strategies.

While this may be the bank's problem under normal, or “peacetime”, conditions, uncertainty could become a systemic problem during a crisis. Suppose a bank needs to de-risk its balance sheet because the economy has turned and it needs to conserve capital. Without model transparency, the bank won't know which assets to sell to increase its capital buffer for a given level of stress. The bank will have to wait for its de-risking actions to be run through the Fed's calculator to know what its regulatory capital position will be. Importantly, the Fed won't be able to anticipate how banks will respond to the need to de-risk either, because the banks won't know how their actions will be treated under CCAR.

It is also in times of crisis that public confidence in stress testing is most important. Yet by withholding information about CCAR models, the Fed is adding an *artificial* source of uncertainty which could become particularly problematic during a crisis, when market uncertainty is at a peak. Disclosure practices in peacetime should be guided by what will be needed to satisfy the market in times of stress. Otherwise, if the Fed decides to increase disclosure during a crisis, it risks being accused of making up rules on the fly, or worse, of regulatory forbearance – when credibility of CCAR is at a premium.

## **II. Arguments Against Model Transparency**

There are four main claims against transparency of the Fed models:

- Claim one maintains that “keeping the banks guessing” is a good thing because it will force banks to practice defensive balance sheet management and run with higher capital buffers. But if we want banks to hold higher capital levels, then why not raise them explicitly? Clarity is a virtue. We should be willing to have the debate about the appropriate level of bank capital in the open, rather than trying to raise capital levels by stealth.
- Claim two asserts that publishing the Fed’s models would lead to a model monoculture — whereby all banks abandon their internal models and adopt the Fed’s models instead. This claim ignores the *requirement* that banks use their own internal models for their CCAR submissions and public disclosure of their results. Banks’ CCAR models have been built up over the last 10 years and are subject to rigorous model validation standards and intense supervisory review. The notion that banks would opt to, or be *allowed* to, give up their internal models and mimic the Fed’s models overlooks these supervisory requirements.

Setting aside the regulatory mandate, banks have a self-interest in adopting the best models for their own risk management purposes. Take, for example, PPNR, which is, in effect, a forecast of a firm’s revenue and expenses under stress. No one-size-fits-all regulatory model could do a better job of forecasting revenues and expenses than the models firms use for their own budgeting and strategic planning purposes. It would be nonsensical for a firm to adopt the Fed’s published PPNR model rather than internal models for earnings forecasts and internal scenario analysis. The same can be said for interest rate, credit risk, and market risk models, all of which are used extensively outside of CCAR. Concerns that internal models would be ignored because the banks know the mechanics of the Fed models is belied by long-standing risk management processes that have been built around internal models.

- Claim three is that withholding details of the Fed models prevents banks from “managing to the model” or “gaming the system”. Although many commentators speak of “gaming”, it’s not clear what gaming means in this context: If the Fed thinks mortgage loss rates are going to spike in the next downturn, shouldn’t we want banks to take the Fed’s models into account in their assessment of risk?

The worry seems to be that banks can exploit discontinuities in the Fed models to lower their CCAR capital. Since no framework or model is perfect, every set of rules or models creates boundary conditions. Even where the Fed’s models may have discontinuities, it doesn’t follow that it’s in banks’ interest to exploit them to take on unwanted risk. Supervisors, meanwhile, should be able to detect and police obvious instances of gaming.

- Claim four is that not disclosing the Fed’s models helps ensure dynamism of the CCAR process. Dynamism is a good thing in CCAR, but it can be achieved by the Fed varying the scenario inputs within defined boundaries for CCAR calibration. Dynamism does not

depend on adjusting the models that translate scenarios into quantitative outputs — and then not telling the banks and the public about it. As with firm’s internal models, there’s no reason why adjustments can’t be made to Fed models every year, and the changes publicly disclosed.<sup>6</sup>

Against these four claims, the lack of transparency in CCAR models is an exception to the general preference for known rules throughout the regulatory system. If uncertainty is good for CCAR, why not extend it to other parts of the regulatory framework? Would we be better off if the Fed applied its own liquidity models to calculate the LCR, and didn’t tell the banks what deposit runoff rates it was assuming? Or the collateral haircuts it was applying in measuring credit exposures under the SCCL? Or if the IRS didn’t publish the tax rate? These rhetorical questions suggest there’s a high burden for CCAR’s special treatment.

### III. Transparency of CCAR scenarios

On scenario design and calibration, the challenge is to preserve the dynamism and salience of stress tests, while avoiding unnecessary volatility and “CCAR surprises.” We need to strike a balance between transparency and disclosure in a way that gives the Fed room to flex scenarios year-to-year. In my view, this can be achieved by providing full transparency of the philosophy underlying scenario design and calibration, which sets the perimeter of CCAR severity. This would define the “box” for CCAR calibration. Each year, scenarios could then be constructed within the box to test different vulnerabilities. But firms would know what the outer bounds are, and this can inform their capital planning processes.

For increased transparency to be effective, it must also extend to the Global Market Shocks used for trading book losses and the counterparty default test applicable to the US G-SIBs. The trading book and counterparty default losses, which are incremental to all other CCAR components, account for approximately 37% of total CCAR losses for the G-SIBs.<sup>7</sup> Their impact cannot be overlooked.

As Vice Chair Quarles has suggested, putting the scenario and GMS out for public comment each year — presumably, after the CCAR as of date — will help enrich the Fed’s thinking on scenario construction “within the box” and avoid unanticipated outcomes.<sup>8</sup>

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Uncertainty may be an unavoidable feature of financial markets, but it is a bug when baked into the design of a critical regulatory process. Reducing uncertainty through increased transparency should be a guiding principle for CCAR going forward.

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<sup>6</sup> Since the Fed models are not themselves considered to be a regulation (which explains why details currently are not disclosed), future disclosures would not have to go through the cumbersome notice and comment requirements associated with formal rulemaking.

<sup>7</sup> Based on CCAR 2019 disclosures for US G-SIBs.

<sup>8</sup> Quarles, “A New Chapter in Stress Testing.”