

Institutional Risk Analytics

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To: Office of the Comptroller of the Currency, Docket No. OCC-2011-0011
FEDERAL RESERVE SYSTEM, OP – 1421
FEDERAL DEPOSIT INSURANCE CORPORATION, “Stress Test Guidance”

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Subject: Proposed Guidance on Stress Testing - Institutional Risk Analytics
Comments on Stress Testing for Banking Organizations

Dear Colleagues:

Institutional Risk Analytics has reviewed the request for comment and offers the following general and specific comments and suggestions to the Office of the Comptroller of the Currency, Federal Reserve and Federal Deposit Insurance Corporation with regards to bank stress testing.

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First, we are happy to report that US banks have been showing reduced operational stress according to IRA's leading indicator metric, our Bank Stress Index (BSI). The population of banks with "F" grade stress peaked in the 3rd quarter of last year among banks over \$10B and declined with the bulk of this population now in the B/C grade range. However, we also see that the systemic stresses of the past few years continue to keep some formerly A+ players one notch down in the A range of BSI scores. These banks remain vulnerable to the potential stress of a major first-loss event with regards to the value of the collateral underlying real estate portfolios.

IRA Bank Stress Index (BSI) Grade Distributions
Banks Over \$10 Billion

Period	A+	A	B	C	D	F
2011 03	29	33	13	20	2	10
2010 12	27	23	14	23	5	15
2010 09	27	21	16	24	4	17
2010 06	24	19	14	24	5	19
2010 03	21	16	20	17	5	26
2009 12	19	18	10	8	5	47
2009 09	25	15	14	9	2	47
2009 06	28	18	12	7	2	49
2009 03	32	19	11	8	1	44
2008 12	27	25	7	10	0	41
2008 09	31	28	9	12	3	31
2008 06	35	28	9	12	1	31

Source : FDIC/IRA Bank Monitor

We also note that smaller banks are also migrating up in terms of ratings, with a significant number of them bouncing from "F" back up to A+/A stress test assessments. But this improvement comes at a price to America's Main Street economy in the form of a dearth of lending. Smaller banks have for a variety of reasons curtailed loan originations and shifted assets towards holding liquid market investments.

IRA Bank Stress Index (BSI) Grade Distributions
Banks Under \$10 Billion

Period	A+	A	B	C	D	F
2011 03	3,709	1,517	488	437	70	1,199
2010 12	3,205	1,618	531	421	78	1,644
2010 09	3,466	1,571	503	376	63	1,621
2010 06	3,527	1,556	466	439	72	1,613
2010 03	3,655	1,576	484	463	88	1,508
2009 12	2,959	1,521	470	424	80	2,394
2009 09	3,283	1,466	396	420	75	2,290
2009 06	3,490	1,431	405	414	70	2,207
2009 03	3,927	1,412	441	429	87	1,776
2008 12	3,891	1,423	369	380	98	1,962
2008 09	4,467	1,265	306	344	60	1,762
2008 06	4,849	1,295	320	314	65	1,427

Source : FDIC/IRA Bank Monitor

Because we publish quarterly stress test results for all FDIC insured depositories,¹ IRA knows more than most analytical organizations just how varied are the risk appetite profiles of banks. Both of these population groups of the banking industry still face future stresses that are likely to generate large discontinuous shocks to their health that must be understood systemically and mitigated individually.

We urge the regulatory agencies to use this guidance opportunity to shift towards oversight methods that actively locate and control moral hazards prior to their becoming malignant. We submit that such shift in regulatory approach must be made or we will surely hatch another “Black Swan” of our own making at some point in the future.

We observe that the Guidance -- as presently drafted -- lacks specifics as to how regulators will architect a stress regime capable of observing the industry as a whole. Even within the subset of over \$10 Billion asset institutions covered by the guidance, the regime as described is too open in allowing banks to self-assess the stresses they face. There is a place for self assessment, make no mistake, but the first

¹ The IRA Bank Stress Index (BSI) is a quarterly survey of the operational results for all US banks based upon five factors: ROE, Capital, Charge-offs, Unused credit lines and Efficiency. The results of the survey are arrayed in an index with the benchmark year set equal to 1995. The BSI results are then divided into letter grades, with “A” rated institutions having BSI scores at or below the levels of operation stress in the benchmark year. .

step to meet the direction of Congress with respect to systemic risk mitigation is a consistent approach to understanding the entire industry.

The current proposal carries the potential to create a cacophonous regulatory regime where it will be difficult and impractical to glean systemic risk indicators that can be used by policy makers to identify, prevent or mitigate the build-up of risk to the U.S. economy. The policy of allowing each bank to create its own stress test methodology, we believe, must be balanced and, indeed, benchmarked in terms of factors that are comparable across all banks. Such bank to bank, apples to apples comparability naturally generates comprehensive industry metrics as well

Beyond the issue of analytical methods, we do not believe an open ended approach that allows banks to self-assess stress without some degree of unit-by-unit comparability addresses the intent of the Dodd-Frank Act to ultimately deliver manageable ways to proactively control systemic stress.

Nor do we believe the banking industry is well served by adopting yet another compliance oversight regime like the uniform bank performance reports that would result in a fruit basket of individual self-assessments, isolating institutions ever further from systemic externalities that affect them all. Or to state the obvious very directly, you cannot observe macro level systemic stress factors without a detailed understanding of the particular attributes of the entire population. Regulators should require (1) that stress tests have a component that is based on public data and thus comparable for each and every bank and (2) public disclosure of these results to better inform the public and policy makers as to the effectiveness of the stress testing regime.

Recommendations

We focus our comments towards identifying architectural approaches that fulfill the principles of the guidance in a more actionable fashion. Foremost among our recommendations:

Regulators should consider requiring some form of stress testing by all institutions, not just \$10 Billion consolidated assets institutions. While the over \$10 Billion institutions may account for a large fraction of the assets and liabilities of the banking industry impacting Washington and Wall Street, they are not even close to the majority of institutions whose collective stresses affect the country's "Main Street" economy.

The Dichotomy of Asset Based Distribution of U.S. Banks

Holding Companies:

Operating Assets Over \$10 Billion = 74 worth \$10,195B
Operating Assets Less Than \$10 Billion = 4,717 worth \$2,025B

Unit Institutions:

Assets Over \$10Billion = 110 worth \$10,612B
Assets Less Than \$10Billion = 7,991 worth \$2,906B

Source: FDIC/IRA Bank Monitor

It is inaccurate to say that systemic risk is focused just on one segment of the banking industry. **The potential detriment is evenly distributed, thus the system as a whole must be treated to fully comply with Dodd-Frank and 12 CFR.** The dichotomy of asset concentration versus institution count may beguile some into believing that big solutions for big banks are sufficient to repair the U.S. economy. We tread that path at great risk of so concentrating the power and politics of our financial system that we are merely setting up yet another “unintended” systemic event. We counsel continuing to solve the problem of systemic risk management in a balanced fashion as the best safeguard against such an event.

We support this recommendation with the following observations.

The data to conduct standardized susceptibility and vulnerability analysis of all bank to risk and stress in a timely manner is available and the additional computer processing required to do so is negligible.

It is IRA’s observation that the availability of Call Reports in machine-to-machine form since January 2009 via the FFIEC Central Data Repository (CDR) has made it possible to perform standardized stress tests reporting institutions rapidly. We do so at IRA when we absorb each Call Report piecemeal during to compute preliminary versions of IRA’s battery of safety and soundness tests. This is followed by a second, more comprehensive battery of tests as soon as the FDIC’s final RIS is released.

We believe these data and the excellent xml-based collection and delivery systems deployed by the FDIC on behalf of the FFIEC form a sufficient base of building blocks to advance the state of the art of a national stress testing regime to the bank holding company level as well.

The banking system is already implementing tiered-structure testing regimes to comply with the Dodd-Frank Act.

The FDIC amended Rule 12 CFR 327 to implement revisions to the Federal Deposit Insurance Act made by the Dodd-Frank Wall Street Reform and Consumer Protection Act (“Dodd-Frank”) as of April 1, 2011. This rule change included revisions for computations for conducting both small and large institution insurance assessments. It covers the smallest to the largest banks. It furthers the process of gathering data from banks specifically to characterize risk. We believe part of designing a future stress testing process should be to leverage and extend these already active initiatives.

Creating Comparable and Repeatable Stress Testing Regimes

A process for banks to benchmark their stress outlook in a consistent, comparable and verifiable fashion is the objective of “Section II: Overview of Stress Testing Frameworks” of the proposed guidance. There is treatment given to the need to establish consistent repeatable narratives or exercises that focus on material risks, exposures, activities, strategies. There is admonition to consider firm specific and systemic stress events and circumstances. But none of the guidance specifically informs banks that the regulators intend on demanding uniformity and comparability across institutions when it comes to stress testing.

We believe that regulatory guidance needs to denote specifically that there will be a uniform benchmarking regime assembled containing a number of standard stress scenarios. These scenarios will be developed by regulators to assess the capacity of banks to withstand a number of parametric stress level sensitivity tests and assumed adverse shock scenarios. Banks will then be required to model their own, institution specific risk factors for both public disclosure and private regulatory compliance.

While recognizing that this principle is an ever evolving process, raising the high level goal of comparability as part of the guidance process is important. It provides banks a heads up that they need to design internal risk and stress processes to achieve the clear, actionable, well supported and decision-making called for in Principle 4 of the proposed guidance.

We suggest that as part of answering the need for “standardized repeatability” agencies should convene ongoing standard tests and scenarios working groups, with industry participation and leadership, to provide banks with the guidance they need to create comparable assessment and reporting processes.

Systemic Risk Mitigation Starts with Public Data Testing

IRA has built a number of commercial stress indicators based on using public data from FDIC Call Reports to construct leading indicator, current indicator and confirmation indication tests of bank safety and soundness. We have found that FDIC public data from these reports can deliver significant insights to counterparties, bankers and regulators particularly for screening and prioritizing which banks to examine and where to start asking the tough questions.

Far more important though, public data tests allow banks to compare themselves to their peers and from this better understand their risk positions and make constructive decisions on what to do about it. We believe this ability to create context and perspective via public data benchmarking is crucial to enabling the avoidance of system wide stress. More, such regular stress test exercises also will support better management and corporate governance at all insured depositories by helping bank officers and directors to better understand the consequences of their decisions.

Having standardized and repeatable public data testing as an objective of the framework creates the basis for implementing future rule making to collect data from banks needed to improve public data based stress analysis. We note that adding new variables for collection is already facilitated by the continuous improvement process for the xml reporting taxonomy operated by the FDIC on a quarterly basis. We are not suggesting inventing anything new to the operating processes of the bank regulatory agencies. We further note that this is the same way the new observation variables are added to enable other Dodd-Frank Act systemic management objectives for insurance assessments.

One More Peace Dividend: Stability Analysis Reborn

As much as we love the elegance of statistical mathematics, it has proven insufficient for stress modeling in the face of the dramatic extreme discontinuities visible in today's financial markets. This new economic reality of greater volatility, we expect, will continue well into the future. IRA's internal stress testing regime that already delivers stress views of every active bank – around 7,500 units plus 4,500 BHC's -- now places less reliance on parametric and regression methods and more emphasis on heuristic scenarios driven by emerging "extreme" events. We now primarily use parametric and regression techniques to confirm whether or not an emerging risk issue lies within or outside the linear boundaries of the system's risk management "comfort horizon". We have found it is these tipping point insights which provide the best signposts for developing our commentary on the economic.

This type of analytics placing more emphasis on heuristic scenarios driven by emerging "extreme" events has its roots in "uncertainty theory" for global-stability and net assessment, art forms that once pervaded how the superpowers managed the

brinksmanship of the Cold War. Interestingly, even the scale of analysis is similar. For instance, typical Cold War scenarios exchanges examined between 10,000 to 20,000 force elements in play, some of which are large and the rest small. A banking industry stress testing regime would look at 7,900 units and 4,700 holding companies in play, some of which are large and the rest small.

Forward Looking, Flexible, Comparable

We suggest that at the core, a post Dodd-Frank Act stress testing process be created using building blocks of standardized scenarios that can be used to measure the inherent stress in every bank regardless of size. Making these scenarios available to banks will allow them to systematically benchmark themselves with respect to investor and regulatory concerns, feeding a virtuous process that increases the efficiency of the policy process to stay ahead of future challenges. We suggest that regulators consider a six-step process model.

Table: Building Block Approach to Stress Testing Regime

I. Nominal Case Test	II. Resolution Scenario Reference Case	III. Systemic Stress "Shock" Test Case	IV. Involuntary Consequence Response Case	V. Stress Mitigation Strategy Input	VI. Stress Management Prognosis
<p>The nominal case is outcome of a performance computation based on using the information as reported in quarterly filings.</p>	<p>This is the worst case outcome reference point. It should accurately reflect either the Loss Severity Analysis inputs from the FDIC's insurance assessment risk factors or the break-up planning factors from a Large Complex Institution Resolution plan, as applicable.</p> <p>One way to look at this benchmark is that the mitigated outcome of step VI must at least outperform this test point.</p> <p>Note: IRA currently models this as a prioritized tranche payout tree as part of our "shadow" CAMELS testing regime.</p>	<p>This is an initial reaction model that can be imposed on all banks based on a series of scenario assumptions driven by any combination of external stresses.</p> <p>These may be policy driven or market driven applied individually, or more appropriately, in logical combinations revealed to be likely by a well constructed heuristic scenario.</p>	<p>Shocks cause reactions. Many of these reactions are not actually within the control of the case subject. Nevertheless the subject will respond. The response will be complex impacting each stress stimulus differently depending on the initial condition of the subject.</p> <p>It is important here that the reasonableness range of the involuntary response options is set by testing across all potential subjects paying particular attention to discontinuous events at the population outliers.</p>	<p>After all banks have passed through columns I through IV, the process of incorporating the bank's risk management plan begins.</p> <p>There are many ways to mitigate stress and this is where bank management reveals its appetite and strategy vs. risk.</p> <p>As the guidance notes, these inputs must be reveal the degree of management's involvement as active and meaningful. That it demonstrates understanding of stress issues and takes action towards stress mitigation.</p>	<p>This is the indicator of each bank's contribution to either contributing to or decreasing from the larger issue of overall systemic risk.</p> <p>This is both a point of net assessment to see where the system is as a whole and also a filtering process for policy makers to determine where regulation can be tightened or relaxed with context.</p> <p>As with all net assessments, the information is most indicative when the sample size equals the census group.</p>

Note: The above process flow is based on a test bed framework constructed by Institutional Risk Analytics to prepare our comment. It is designed to accommodate emerging stress scenario models and test them against 100% of the active bank population including providing outlier analysis and back-testing, as needed, to confirm scenario design efficacy.

Based on IRA's work building a number of surveillance and compliance systems for bank analysis, we observe that standardized testing frameworks based on public data will illustrate up to 90% of the systemic risk picture. The remainder must be done by adding firm specific factors some of which may eventually be candidates for standardized reporting elements in the CALL REPORTS. For instance,

- Whether or not FHLB recovery obligations are whole or partial versus the principal owed.
- Unusual scenario externalities like the severe decline of a significant piece of the local economy where that institution does the preponderance of its business.

Note that under a standardized and comparable testing regime it will be much clearer to all who the "best of breed" and "worst of breed" institutions are. It will be a source of pride to some and an embarrassment – even catastrophe -- to others. This is precisely what the process of achieving "well regulated" systems is about.

It is important that these scenarios be designed fairly so as not to inappropriately advantage one segment of the banking industry over another or stifle future innovation in banking and finance. In this regard, we believe the industry's continued input remains vital to the design process. This too must be incorporated into the infrastructure design.

Caution to Stress Scenario Designers: Heuristics Validation Necessitates Census Testing

The validation process for qualifying the heuristic shock models also borrows from the Cold War era. One does "force structure analysis in depth"; meaning, modeling the test against 100% of the affected population and asking if the outcomes – including all outlier cases – remain reasonably explainable given the condition of each institution regardless of how center case or outlier it is. In fact, it is IRA's experience with our analytics engines that it is testing and understanding the intricacies of the outliers that garners the most insight as to the reasonableness of any scenario shock – no matter how catastrophic – is being contemplated.

The comprehensive approach to scenario modeling was routinely overlooked by legacy statistical analysis methods still employed by many Wall Street firms today that expunged outliers in an effort to simplify modeling equations. It is one of the biggest reasons the system succeeded in blinding itself to the coming of the Black Swan.

Now that we should know better, we shouldn't do it again. There's no reason to. We have the computers to do better. We have the theoreticians to do better. We need to change the inertia of the culture that prevents us from doing better. The single certainty we have is that dramatic discontinuity remains tomorrow's economic reality. Our risk and stress testing regime needs to be geared operate where the real world is.