



The design of a stress test in 5 Q&As

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Introduction: Are stress tests “Mad, Bad, and Dangerous”?

(Kevin Dowd, Cato Journal, Vol. 35, No. 3).

- Stress tests have been increasingly used by supervisors
- Common tool, but challenged for various reasons:
 - Actual use for banks (EU and US)
 - Credibility of results (EU)
 - Reliability of bottom-up (EU, use of internal models)
 - Accountability of top-down (US)
 - Cost and benefits of running such a complex exercise (worldwide)



A few Questions can summarise the state of play of the debate on stress testing and a few (possible) Answers can help understand the future of stress testing

Q 1: Do stress tests need to be pass/fail?



- Pass/fail exercise are seemingly easier to interpret, but may give a sense of false security
- Lack of capital thresholds (and possible shortfall) makes the results less intuitive (and less media-friendly), but allows to focus on impacts, vulnerabilities and areas for improvement:
 - *Bloomberg (2015): "EU Cooks Up a Stress Test for 2016 That No Bank Will Fail"*
 - *Reuters (2016): "Europe to stress-test its banks again, but none can fail"*
 - *Bloomberg (2016): "Banks Can't Fail as Europe Rolls Out Post-Crisis Stress Test"*
 - *Irish Examiner (2016): "New EU bank stress tests will be impossible to fail"*
- Single or bank-specific threshold?



**No golden rule, but a pass/fail threshold is necessary in recapitalization stress test (system-wide), useful in P2 exercise (bank-specific), an option in the other cases.
...by the way, no pass/fail threshold implies no bank can pass....**

Q 2: Does transparency lead to self-fulfilling prophecies?

- Transparency of the results adds to market discipline (and complements supervisors' assessment) but there is debate on possible consequences in terms of:

- Beauty context (especially in pass/fail stress test)
- Self-fulfilling prophecies

- However, there are benefits of transparency, especially in crisis stress tests:

Stress tests are increasingly being used by country authorities as an instrument for regaining the public's trust in the banking system ... in this regard, transparency, and hence the quality of disclosure, is critical. (Ong and Pazarbasioglu, 2013).

- Transparency on supervisors' stance in stress testing is also important:

Disclosure on stress tests is to hold supervisors accountable for their actions about (i) what is needed for firms to meet the test requirements; (ii) what firms that do not meet the requirements would be expected to do; and (iii) what steps supervisors would take with those firms (Goldstein and Sapra, 2012):

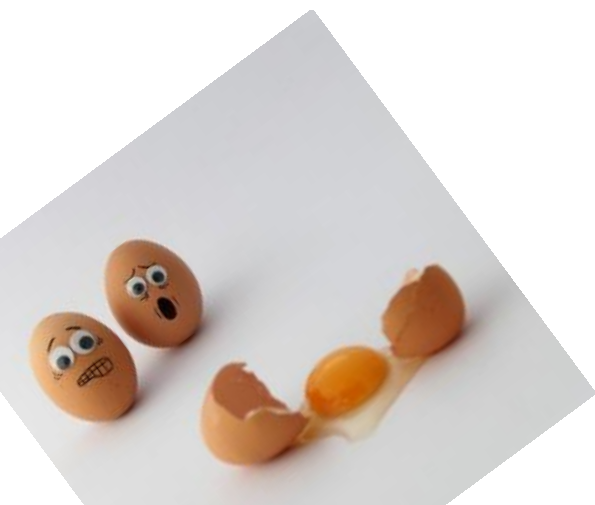
Disclosure of results is a must in crisis stress tests, but it is also desirable in normal times. Authorities should be disclosing stress test design, methodology, and macroeconomic assumptions. What about details of the top down models?

Q 3: Why do stress tests use banks' models, which are flawed? (1/2)

- Stress tests use what is available and make the best out of it – they are not meant to reinvent the wheel. In particular, stress test is a taker of the existing regulatory framework and banks' internal models are part of it. But all models came under pressure in the aftermath of the crisis, and still are:

“Of course, all models are wrong. The only model that is not wrong is reality and reality is not, by definition, a model. But risk management models have during this crisis proved themselves wrong in a more fundamental sense. They failed Keynes' test – that it is better to be roughly right than precisely wrong. With hindsight, these models were both very precise and very wrong” (Haldane, 2009)

- Bottom-up approaches can be “constrained”, introducing caps and floors to banks' own estimates.



Q 3: Why do stress tests use banks' models, which are flawed? (2/2)

- Top-down models cannot be manipulated by banks, but are also prone to model risk. They can also reduce the incentives for banks in investing in risk management.
- Also, supervisors are starting to look not just on the number generated by the test, but also on how the bank generated that result. To pass the stress test, a bank's capital ratio must exceed the hurdle rate, and the bank's data, data management and modelling must pass muster as well (Huertas, 2015).
- Leverage ratio? Perhaps, but not that good with a static balance sheet

Models are the best tool we have at the moment, though imperfect. Complementing top-down and bottom-up outcomes, introducing constraints, benchmarking banks' results, and disclosing granular data for "external" due diligence mitigate model risk and strengthen the credibility of stress tests

Q 4: Are scenarios credible? (1/2)

- Approaches on scenario selection relatively standardised: normally 2 or 3 scenarios:
 - a baseline;
 - 1 or 2 adverse (Adverse (EU), Adverse and severely adverse (US))
- Multiple scenarios are difficult to manage in a system-wide stress test, but important to add ad hoc sensitivities:
 - If banks are too different: market risk (also for avoiding window-dressing?)
 - If some risks are not scenario dependent: conduct risk
 - Some country specific aspects are to be added on the top of the general scenario
- Real time updates of the scenario if things go wrong? (adverse is better than reality: sovereign haircuts in 2011)



Q 4: Are scenarios credible? (2/2)

- Recently, in the UK concepts of cyclical and exploratory scenarios:

“The new UK ‘exploratory’ scenario is there to give us the opportunity to poke around in the corners, to test more structural risks to which UK banks might be exposed – risks that are not well captured by indicators of imbalances”. (Brazier, 2015)

- Would an exploratory scenario have allowed to test for Grexit, Brexit?
Political economy considerations in stress testing ...

- policy makers prefer to say financial system is resilient and are concerned of stress tests being perceived as a forecast

“The particular set of stresses ... may be far removed from those that actually occur. In part this could be because those setting the tests do not want to consider the possibility that their own policies could fail (e.g. a break-up of the Eurozone)” (Ong and Pazarbasioglu, 2013)

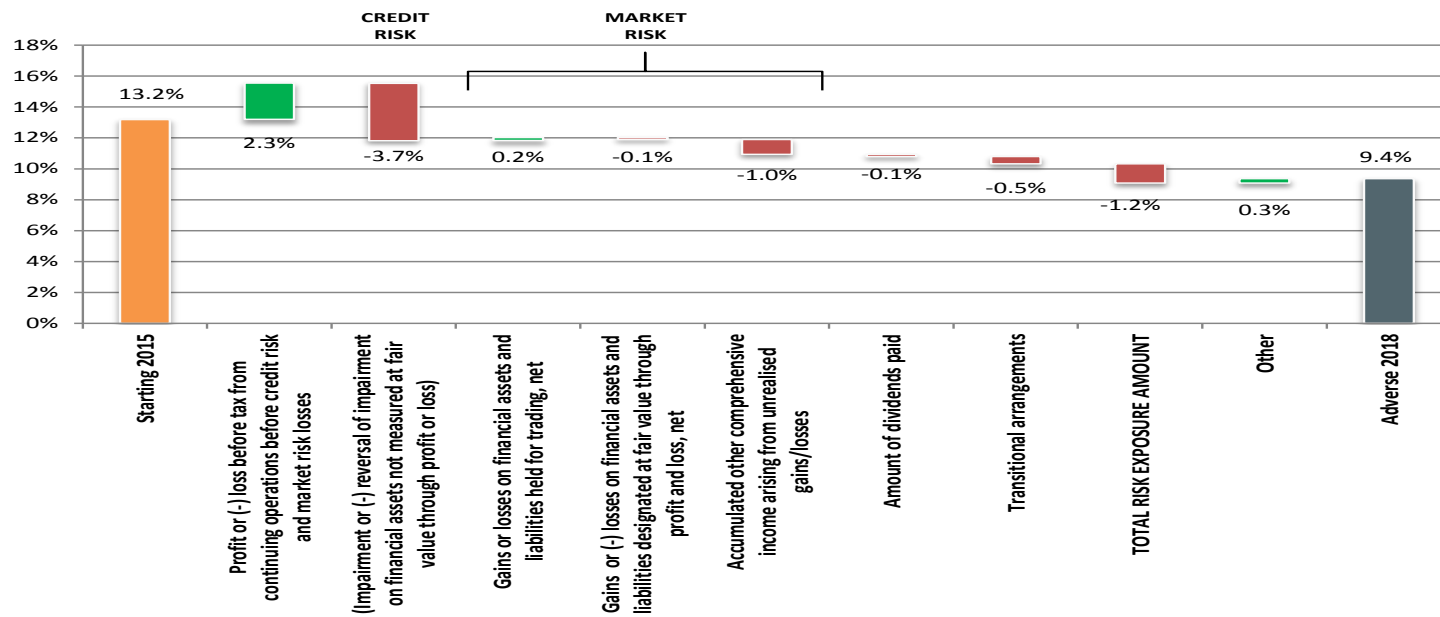
- ... and the availability of a (public) backstop

“the main problem that many expert commentators see with the current conduct of stress tests, is that these tests, especially the European ones, have not been rigorous and tough enough. But this is primarily, in my view, because the European authorities have not yet fully resolved the question ... of how to provide back-stop funding to recapitalise the weaker banks” Goodhart (2015)

Multiple scenarios are not an option at the moment, but specific add-ons and sensitivities can add to the severity of the scenario (granular transparency as a complement). The exploratory scenario is a concept to explore....but being aware of the political economy of stress testing.

Q 5: Which risks are to be covered?

- Important to be comprehensive and cover main risks, but there is a trade-off between comprehensiveness and simplicity
- Some risk drivers seem to have more impact than others on banks (on average):
 - Poor modelling/insufficient supervisory guidance vs little actual risk?
 - A solvency stress test can say little on some specific risks (conduct? Cyber risk?)



Main drivers to the change in CET1 ratio 2015-18 - Adverse

Stress test methodology should be comprehensive but not overcomplicated and neutral w.r.t. banks' business model. Some risks are more for war games than stress tests.

Conclusions

- Design of stress test affected by practical considerations and political economy arguments. This in turn affects the role stress test can play in bad/good times
- Still, they are here to stay and are the only tool available to addressing disaster myopia
- Not steady state yet (at least in the EU). What we need for enhance credibility:
 - Consolidated – if not standardised – methodology, but avoiding window dressing
 - Clear data requirements
 - Stable timeline
 - Acknowledging limitations – stress tests do not provide all answers
 - Mitigating design risk

“Instead, the conclusion here is that, fallible as they may be, the conduct of annual stress tests gives the regulatory authorities their best available chance of dealing with fragile banks while there is still enough time to avert a, potentially contagious, failure”. Charles Goodhart, In praise of stress tests, CEPR, 2016



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