

A decorative graphic consisting of two curved lines, one blue and one yellow, arching across the top of the slide.

Peristiani, Morgan & Savino (2010)
Discussion
*The Information Value of the Stress Test
and Bank Opacity*

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Overview of the paper

1. Two notions contemplated:

- **Information value:** Did the stress test produce new information about banks?
- **Bank opacity:** What do we learn about the bank opacity hypothesis?

2. Papers technical considerations:

- **4 events:** announcement, clarification, methodology, results
- **Period of analysis:** from 2009 February 10 to May 7 => 3-month period analysis
- **19 banks tested + significant set of external banks**
- **Based on market data : share prices and CDS**

3. Event study methodology:

- **(cumulative) abnormal returns (“CAR”)**

Results

	Problem / Hypothesis tested	Methodology	Conclusions
Portfolio / aggregate level analysis (Section 3)	Looking at <i>ex ante</i> events, one would expect differences between the GAP and NO GAP banks only to the extent the market had deciphered beforehand which banks would have a gap.	<u>1st step</u> : comparison of abnormal stock returns between SCAP banks and next 15 public banks <u>2^d step</u> : comparison of abnormal stock returns within SCAP banks, between GAP banks and NO GAP banks	Markets only reacted to: <ul style="list-style-type: none"> • clarification • publication of results <p>GAP banks respond <i>positively</i> to results announcement</p>
Cross-sectional regression (section 4)	“Puzzling” response of GAP banks in aggregate analysis => “ <i>expectations hypothesis</i> ”: positive aggregate response for GAP banks positive because capital gaps smaller than expected?	Regression of CAR^R for each stress-tested bank on: <ul style="list-style-type: none"> • its revealed capital gap (per assets) • a proxy for the expected gap (CAR^C) 	Market not surprised to learn which banks had capital gaps, but surprised by size of the gaps => Banks are opaque to some intermediate degree
Impact of the clarification event - CDS spreads (section 5)	Which event actually mattered in the clarification event: <ul style="list-style-type: none"> • reassurance on no-nationalization? • CAP details? <p>If CDS spreads also reacted to clarification, at least part of the impact reflected information that stress tested banks would not be nationalized.</p>	Comparison of cumulative abnormal change in CDS spread for GAP banks vs. NO GAP banks around the 4 key SCAP events	At least part of the impact of clarification was because investors were reassured that stress tested banks would not be nationalized based on the results The methodology was also informative to the bond market

Identification strategy

First-stage : Estimation over the period (T0;T1) =(July 1, 2006; 11 June 31 ,2007)

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$

Second-stage : Computation of the abnormal returns over a period surrounding the announcement (T2-delta;T2+delta) with T2>T1

$$\hat{\varepsilon}_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt} \quad (2)$$

Third-stage : regression of the cumulative function of the abnormal returns over banks characteristics

$$\frac{1}{\delta} \sum_{t=T2-\delta}^{t=T2+\delta} \hat{\varepsilon}_{it} = X_{it} \gamma + \eta_{it} \quad (3)$$

Identification Strategy : confounding variables

- It is assumed that over the period of estimation of (1), no potential omitted variables pollute the estimation of the alpha and beta
- However, it is assumed that the estimation of (1) around the time of announcement is polluted by omitted variables : for example GAP, No GAP variable
- What is in question : relevant additional variables or confounding factors in the estimation of (1) that could drive both the estimation of betas and the impact of gap and no gap variables.

Identification Strategy : shocks on the reference period / Timing announcements

•Shocks affecting the estimation of the reference period

- Feb. 27: Mortgage giant Freddie Mac says it will no longer buy the most risky subprime loans.
- April 2: Subprime mortgage lender New Century Financial files for bankruptcy-court protection

•Timing of the announcement and leakages

- 150 people involved into the different US regulation agencies
- How many in the stressed banks ?
- Market participants are working in financial institutions

Some proposals : econometric methods

1. Estimation procedures :
 - Bootstraps necessary since you are working on variables that are generated by an econometric model (or WLS)
 - CAR significativity test : Petrella (2013) uses an improved version of the test (Kolar & Pynnönen)
2. Omitted variables :
 - Introduction of control variables (Petrella et al., 2013) to capture market “jitters” or economic cycles / Factor models
 - Stability of the alphas and betas over the reference period : use of jackknife estimators or chow tests
3. Timing of the announcement
 - Placebos on the dates of announcement
 - Different time windows surrounding the announcement

Some proposals : outcomes & drafting

- Why discarding market analysts expectations, at least for robustness checks ?
- Identification of testable hypotheses (*information value, bank opacity*): what kind of information do they encompass ? Is it relevant to assess the two with the same approach? An advantage in comparison with EBA Stress test : information disclosure is only on the impacts of the stress tests
- Is there different levels of market opacity, considering banks' business models and specific risks (eg: retail vs. corporate banks)
- Impact of the stress test scenarios (vs realised or anticipation at the time of the results) : market consensus vs baseline
- Does the level of float have an incidence on the impact discrepancies between banks ?
- Cost of funding rather than stock market prices

Conclusion

- Innovative paper (the first one on an empirical test of the impacts of the disclosure of stress test results)
- Followed by more advanced papers using a more pathological case (the EBA stress testing exercise)
- However, the SCAP is really on stress test and not on the disclosure of stress test results + assets composition
- A little more to do about some robustness checks or the analysis of other outcomes (funding)

Conclusion

- Stress testing are highly expected by market participants when things turn bad
- Put the regulator into a corner
 - Suppose one bank is hurt by the liquidity crisis
 - On close monitoring by regulators
 - Should it be included in the Stress test exercise ?
 - If not, stigma from not participating (might be less important that we think)
 - If yes :
 - Weaknesses are revealed : market overreactions (downgrading, higher cost of funding)
 - No apparent weakness (in term of solvency)
 - But problem if the realised scenario worse than the adverse scenario : lack of credibility of the whole exercise. B
 - Conclusion : better off not to have stress tests disclosed
- Academic debate on the disclosure of stress testing at the infancy stage and has still to develop and make its way to policy makers. Things might be more subtle that “more information is always better, since more information provides better market discipline” as often heard in the technical groups in charge

BACK UP SLIDES

Conclusion : considerations on disclosure (1)

Should stress tests be made public in the first place?

- Recent practice of supervisors towards increasing disclosure (eg: EBA stress-tests 2011)
- However, some supervisors chose to limit the level of disclosure in the past (eg: 2010-2011 US CCAR). Stress-tests exercises are also criticized for their lack of credibility and realism.

If stress-tests disclosed, to what extent and under what conditions?

- Conditions of “transparent information” (BCBS, 1998): comprehensiveness; relevance; timeliness; reliability; comparability; materiality
- See e.g. Goldstein et al. (2013) for a theoretical analysis of an optimal disclosure model by a banking regulator;

Conclusion : considerations on disclosure (2)

If stress-tests disclosed, to what extent and under what conditions?

- Conditions of “transparent information” (BCBS, 1998): comprehensiveness; relevance; timeliness; reliability; comparability; materiality

Nature of information disclosed	<ul style="list-style-type: none">• methodology, stress scenarios, risks covered (credit, market, operational, liquidity, contagion), types of exposures (corporate, retail, sovereign), results? (<i>Schuermann 2013</i>)• actual detailed data, simulations (results of stress scenarios)? (<i>Petrella et al. 2013</i>)
Information granularity	<ul style="list-style-type: none">• aggregate results, individual results?• full sample of banks in the exercise, specific banks only?• partial results (pass / fail), detailed results (eg: level of capital shortfalls)?
Mode of disclosure	<ul style="list-style-type: none">• mandatory (prudential requirements), voluntary? (<i>Bischof et al. 2012</i>)
Source of disclosure	<ul style="list-style-type: none">• banks, regulators, supervisors, other public authorities?
Timing of disclosure	<ul style="list-style-type: none">• allow some delay to prevent market over-reactions; allow methodology updates and clarifications? (<i>Peristiani 2010, Petrella 2013</i>)

Indicative bibliography

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Conclusion : considerations on disclosure (1)

Goldstein et al. (2013) for a theoretical analysis of an optimal **disclosure** model by a banking regulator; also IMF (2013a, 2013b) for suggestions of practical guidelines for stress-tests implementation

Increased disclosure usually considered as overall beneficial and valued by market participants...

- It improves transparency, and therefore market discipline (=> efficient allocation of resources, enhanced bank performance and financial stability)

... despite potential negative effects

- such as *ex post* inefficient or speculative reactions of other stakeholders (market over-reactions, bank runs)
- Hirschleifer effects (risk sharing opportunities diminish)

Comparison with EBA 2011 Stress Tests

Petrella & Resti (2013)

Event study analysis of EBA's 2011 stress-tests: impact analysis (in terms of CAR) of pre-results and results announcements on bank stock prices

2011 EBA stress-tests timeline

Pre-results date

13 january 2011	First announcement date
2 march 2011	Detailed announcement date
18 march 2011	Methodology date
8 april 2011	Capital definition date

Results date

15 july 2011	Results date
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Stress tests proved informative for market participants:

- Significant market reactions both on various pre-results dates and upon the release of the test's detailed, bank-by-bank results
- Investors interested both by the disclosure of more detailed historical on tested banks and by simulated data on banks' resilience to the stress-test downturn scenario

Stress-tests can play a role in mitigating bank opacity

Other studies of interest on European stress-tests

- Cardinali & Nordmark (2011): replicate Peristiani et al. (2010) for 2010 and 2011 European stress tests
- Bischof & Daske (2012)
- Ellahie (2012) : effects of stress-test announcements on information asymmetry

US vs European stress tests exercises

Exercise	Announc. date	Results release date	Banks covered	Coverage	Minimum capital target(s)	Capital shortfalls found	Risk types included
2009 US SCAP (FED, FDIC, OCC, OTS)	Feb. 10, 2009	May 7, 2009	19 Domestic bank holding companies	2/3 of assets in the US banking system	Common Tier 1 at 4% Tier 1 at 6%	10 Banks USD 75 bn	market (1), credit
2010 EU Stress Test (CEBS)	Dec. 2, 2009	July 23, 2010	91 Banks	65% of assets in the EU banking system At least 50% for each country	Tier 1 at 6%	7 Banks (+17 "near fail") EUR 3.5 bn	market, credit
2011 EU Stress Test (EBA)	Jan. 12, 2011	July 15, 2011	90 Banks	65% of assets in the EU banking system At least 50% for each country	Core Tier 1 at 5%	8 Banks (+16 "near fail") EUR 2.5 bn	market, credit, liquidity (2), operational
2012 US CCAR (FED)	Nov. 22, 2011	March 13, 2012	19 Domestic bank holding companies participating in the 2009 SCAP		Common Tier 1 at 5% Leverage at 3–4%	4 Banks (shortfall not disclosed)	market, credit, operational

Source: Petrella et al. (2013), Schuermann (2013)

Notes: (1) Only banks with at least \$100 bn in trading assets were required to conduct the market risk stress test. (2) liquidity risk was not directly assessed, though funding stresses were taken into account, especially as related to sovereign stress impacting funding costs for financial institutions.