SUPERVISORY STRESS-TESTING
EVOLVING FOR HIGHER VALUE

14 DECEMBER 2018

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Executive Summary

EBA 2018: A valuable exercise, but extraordinarily high effort

- EBA 2018 was a valuable exercise providing reassurance on overall industry resilience and creating transparency on the health of individual banks
- However, the EBA 2018 exercise has also been extraordinarily high effort and cost
- Voices calling for change continue to rise, asking for a revision of stress-testing principles and standards – this won't happen without the cooperation of all parties involved

How to improve the 'value for effort' equation?

- Reasserting the 'constrained bottom-up nature' of the exercise
- Adjusting the methodology to 'make the exercise more real'
- Working on overall process simplification and calendar streamlining
- Recommitting to Stress-Testing as a key transparency and risk management tool – with clear linkages to capital requirements
- Reducing the operational burden through industrialization, both at bank & supervisor level

2020 and beyond: A way towards the Future

- The EBA 2020 exercise is around the corner – to realize the quick wins on the table today, a dedicated call for action is needed
- Beyond simply the 'very next EBA ST', banks would benefit to greater consistency across Stress Testing approaches across jurisdictions

EBA 2018:

A valuable exercise,

but extraordinarily high effort

EBA ST 2018 reassured supervisors and investors on the industry's overall resilience and good position to withstand an adverse scenario

EBA ST results over the last three exercises

	Avg. CET1%, Fully loaded starting-point	Avg. CET1% Fully loaded, Adv. Scenario	Avg. CET1 depletion, Adv. Scenario
2018 exercise	**15.90%** (2017, restated)	**11.85%** (2020)	**405bps** (2017 vs. 2020)
2016 exercise	**14.39%** (2015)	**10.51%** (2018)	**388bps** (2015 vs. 2018)
2014 exercise	**11.28%** (2013)	**8.70%** (2016)	**258bps** (2013 vs. 2016)

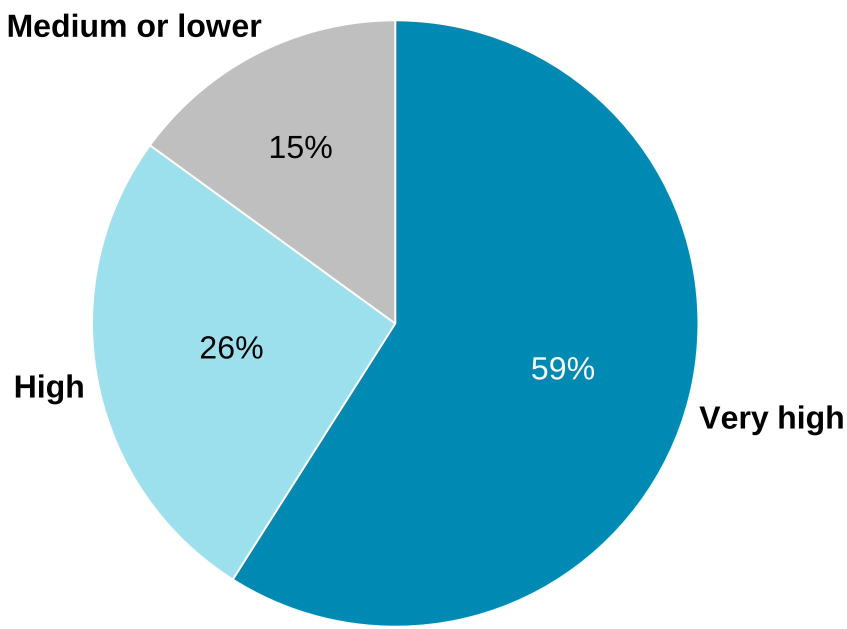
Observations

- **Scenarios much better aligned with current market concerns vs. 2016 surprise Brexit**
- **Results show an overall resilient banking system, despite higher CET1 depletion**
  - Capital build-ups in recent years leading to higher average capital levels by 2020 (134bps higher average CET1 vs. 2016)
  - Higher capital impact vs. 2016 (405bps across all EBA banks vs. 388bps)
  - Strong variations across countries observed (UK/Germany most vs. Poland/Norway least)
  - Profitability/NPAs remaining key concerns
- **Three formal QA cycles ensured a level playing field and adherence to methodology** – leading to a substantially higher CET1 depletion vs. original pre-QA bank results

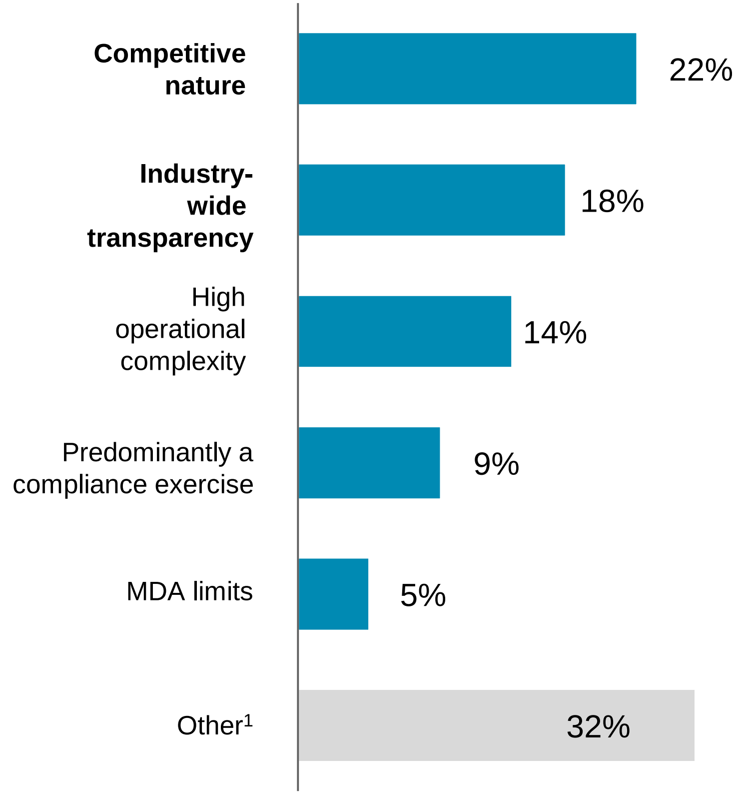
Source: EBA

Our survey shows banks understand the need for this type of exercise and are taking it seriously

EBA 2018 exercise strategic relevance



Most important drivers of perceived senior management relevance



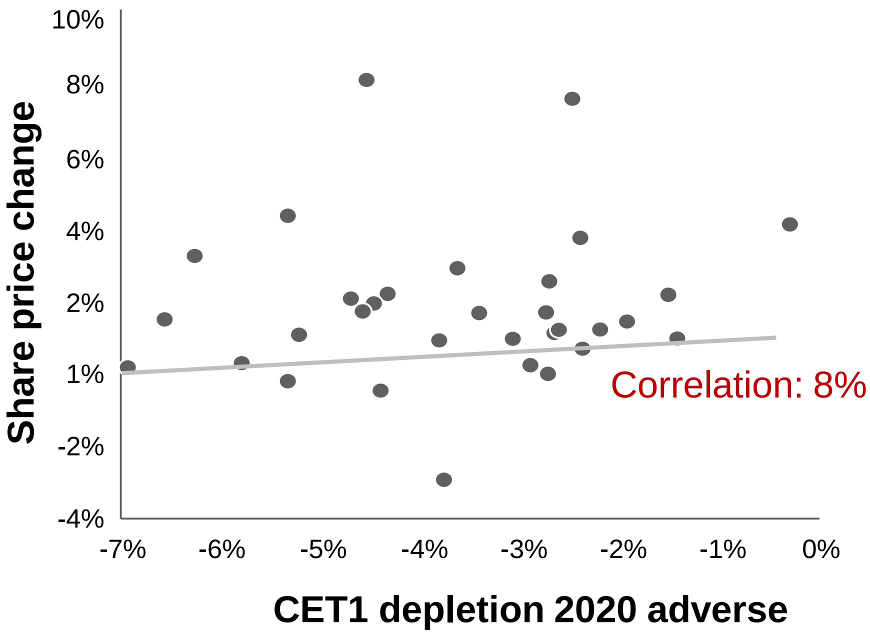
Source: Oliver Wyman industry benchmarking

1. Category 'Other' contains references to SREP decision, contradictory to survey debrief

Market reaction to results publication has been muted while banks raise questions on the usefulness in internal risk management and comparability

Investor reaction to ST

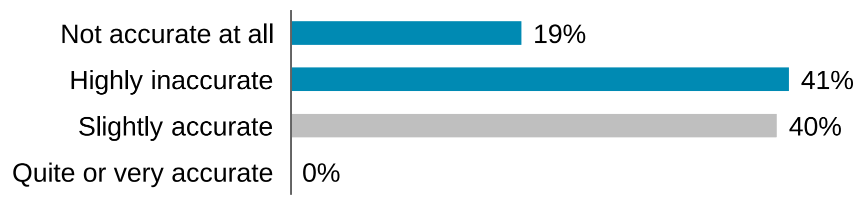
Share price change Thu 08/11 (2 pm) vs before pub



Industry perception of ST

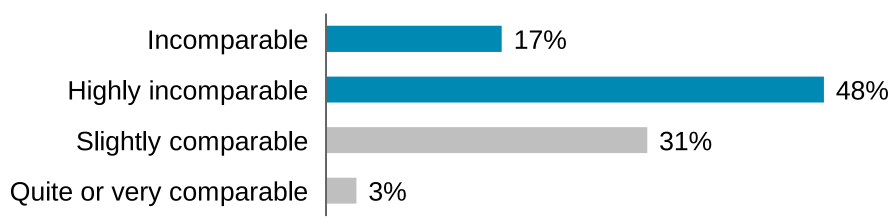
- **~60% of institutions feel that results do not fully reflect their resilience:**

Perception of results' reflecting actual bank resilience



- **~65% of institutions think results comparability across banks could improve**

Perception of llevel playing field across institutions



Source: Oliver Wyman industry benchmarking, EBA, Oliver Wyman analysis

The overall process has proven long, complex and expensive for everyone involved, both for banks and regulators/supervisors

	INDUSTRY	REGULATORS AND SUPERVISORS
Budget & staff	• **> €150MM+** spent both on internal & externally supported projects	• Significant **infrastructure investments** (incl. STAR)
	• **> 10,000 FTE** months invested across participants[1]	• Several **100s of experienced staff** dedicated to the exercise
Process length and complexity	• Long preparation phase of **8 months**	• Lengthy preparation phase to align between **>20 authorities & geographies**
	• Up to **37 templates per submission** (incl. 10 on Credit Risk, & 6 on Market Risk, not even counting 4+ full template rereleases & multiple changes in guidance)	• Infrastructure dealt with **>>5 MN data points** per submission, including complexity with design of different templates
	• **4-6 QA-cycles**, high pressure explain/comply, including **unexpected QA cycles**	• **Detailed QA per bank** across the 1 ADC and 4 FDC submission cycles
	• Calculations, reconciliation & submission across ADC as well as **4 FDC submissions**	• On-going coordination & QA for 48 EBA Banks, **both centrally & via JST** for all FDC submissions, along with execution duties

1. And additional participating broader SSM institutions
Source: EBA, Oliver Wyman industry benchmarking

An increasing number of voices are calling for evolutions in European ST – driving change will require mobilisation of all stakeholders involved

Andrea Enría – EBA Chair

EBA EUROPEAN BANKING AUTHORITY

What we have learnt
from EU-wide Stress Tests

"*There are certainly areas where improvements are needed and aspects that may require a more fundamental rethinking*

An open and informed debate will surely contribute to enhance the robustness of the EU framework for stress testing and its legitimacy across all interested stakeholders"

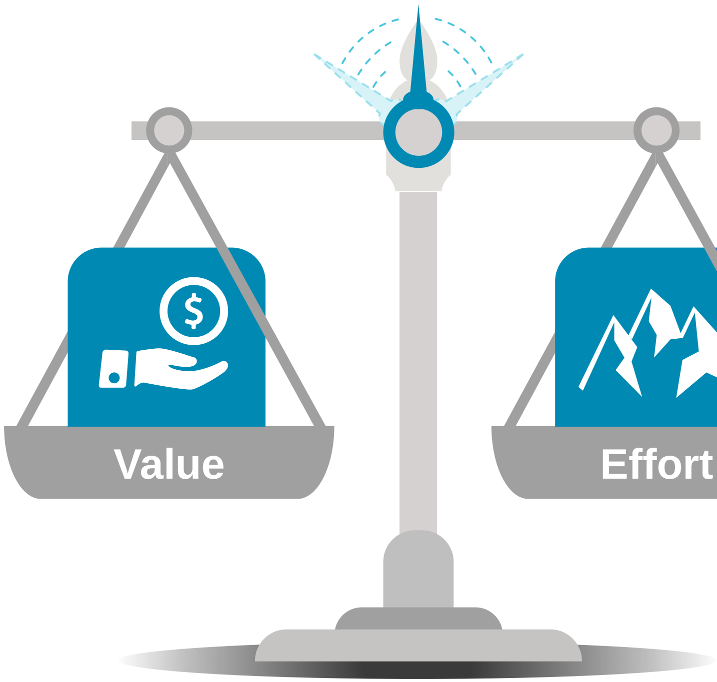
15 November 2018

Observations

- **A concerted effort is key, involving:**
  - Key regulatory and supervisory bodies (EBA, SSM, NCAs)
  - Banks (G-SIFIs, EBA banks)
  - Associations (EIFR, AFME, …)
- **Short-term quick-wins are possible – with the ambition to implement by EBA 2020**
- **A more strategic, long-term vision should be taken into account for future exercises** – potentially involving broader international bodies and supervisors (e.g. PRA/BIS) as a 2nd step
- **Trade offs between short term development** steps for a better exercise 2020, compared to **later**, **more highly evolved** version e.g. 2022 already being discussed within industry

Evolution required:
Improving the value for effort equation

Future evolutions should enhance value of the exercise, while balancing appropriate effort required

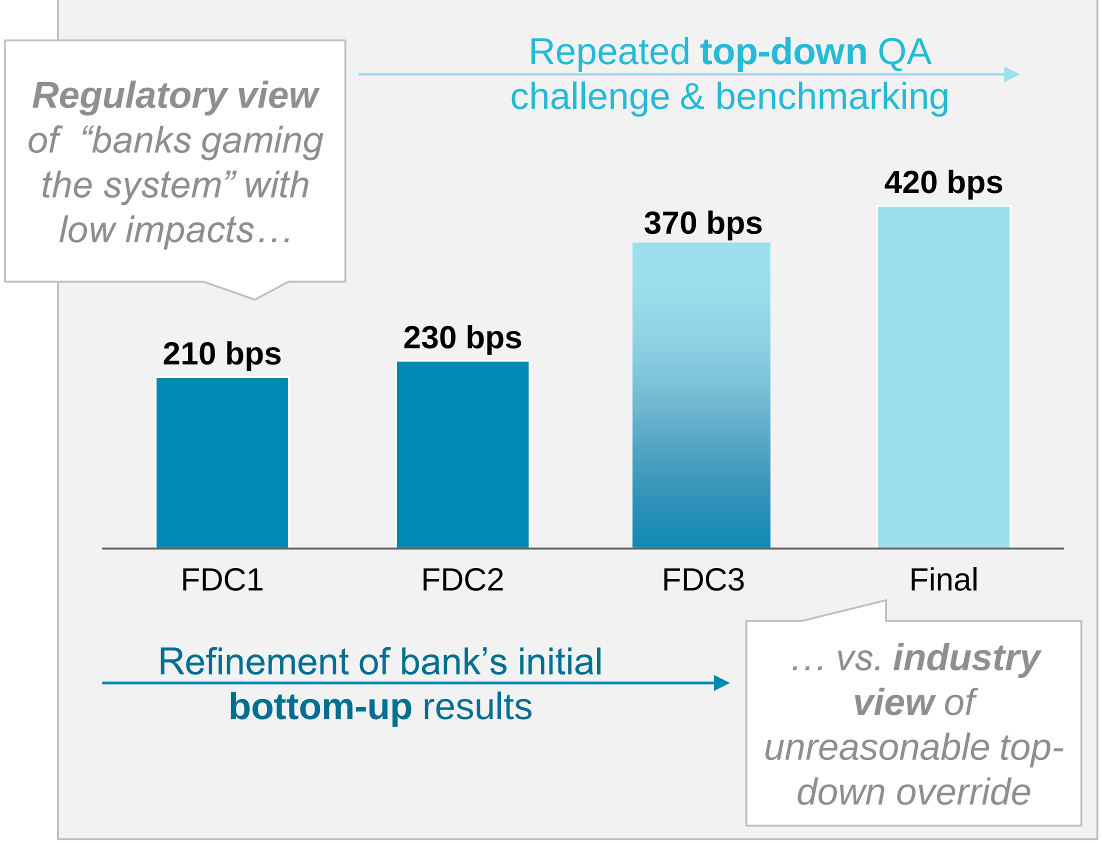


Key levers

1	**Exercise nature (constrained bottom-up)**
2	**Enhancements to methodology**
3	**Process simplifications (calendar/governance/QA)**
4	**Clear link to risk management and capital requirements**
5	**Stress-Test industrialisation (stability & predictability)**

1 Many participants struggled aligning internal bottom-up results vs. top-down QA, creating frustrations on both banks and supervisors

CET1 depletion throughout the QA process
Oliver Wyman benchmarking

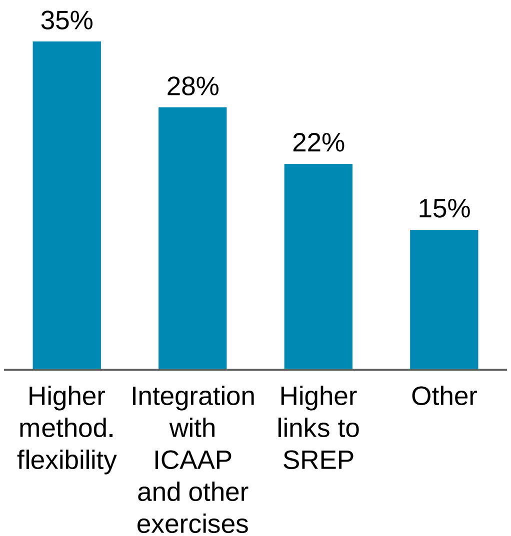


Observations & Improvement levers

- **EBA 2018 final QA rounds triggered complaints around level/intensity of QA challenge, questioning specific**
  - value of bottom-up efforts ahead of top-down QA feedback
  - timing of that feedback – following positive initial QA
- **Robust QA is absolutely key to avoid gaming and limit potential over-optimism of bank submissions:**
  - Early calibration after FDC1 should be the defining QA cycle
  - Final cycles only needed to refine
- **Possible levers to combine value of strong bottom-up bank commitment with a global level playing field are:**
  - Clear and transparent QA processes to participating institutions
  - Anticipated visibility to supervisors on overall results direction

2 Making the exercise more real is a key lever to unlock true value for day-to-day risk management and embedding in internal processes

Key driver to higher relevance



__Recent discussions__ further mention:

- *Uncoupling the 'model validation' portion to reduce NFCI cap (perform prior to exercise)*
- *Further incentivizing quality of models by expanding approach to other risk types*

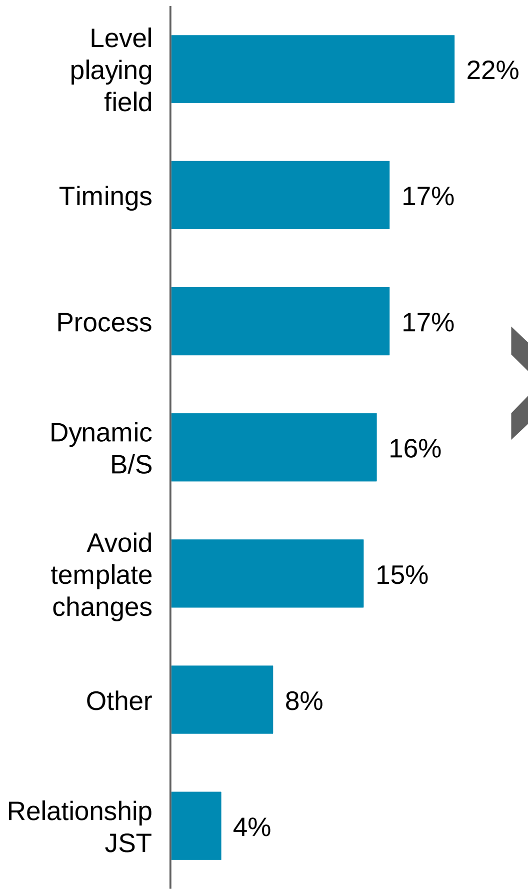
Source: Oliver Wyman industry benchmarking

Illustrative improvement areas

Topic	**Possible actions**– detailed cost/benefit analysis required
Enhancing exercise realism, recognizing bank idiosyncrasies	• Dynamic constrained B/S to allow accounting for business model or corporate structure changes • Increase recognition for bank one-offs – whilst ensuring a level-playing field and strong QA • Managerial actions under stress: e.g. allow parallel publication of 'managed adverse' scenario
Revisit methodology choices per risk type, e.g. **Market Risk** (doubt in need for static floors in light of available full reval across scenarios	• Pragmatically abolish either need for full revaluation or better calibrate caps/floors in advance (e.g. via dedicated industry forum & consultation)
Credit Risk (operational challenges of new methodology)	• Improved beta-testing of templates • Critical review of highly prescriptive IFRS9 rules • Tailor credit risk benchmarks more
Net interest income (Dubious intertemporal inconsistencies method [FAQ#7] & idiosyncratic shock vs. local frames)	• Leverage bottom-up calculation capabilities of most banks (e.g. to better account for contractual pass-throughs, sight-deposit repricing maturity models…) • Increase recognition of internal PPNR models – potentially anticipating review of internal ST models

3 Process enhancements are required to reduce execution effort on supplier side and improve overall usability and relevance for participants

Top future improvements



Source: Oliver Wyman industry benchmarking

Illustrative improvement areas

Calendar streamlining

- Condensing timelines (e.g. by avoiding re-development, settled IFRS9 methodology)
- Synchronising calendars with other regulatory / planning exercises
- Clarity & stability of (micro-)timelines

Process revisions

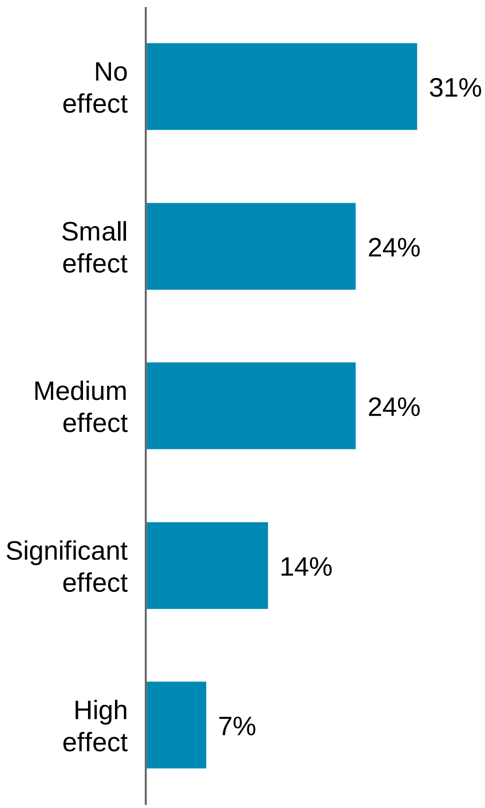
- Simplifying templates
- Coordination of messages (FAQ) and requests (ensuring cost/benefit is part of consideration)
- Reducing the number of iterations/QA cycles
- Supervisory dialogue (vs. monologue)

Visibility of QA and benchmarks

- Template quality and stability (early beta-testing, already before ADC cycles)
- Consistency in QA processes & between different QA channels (JST vs. central team)
- Increasing visibility on benchmarking tools (and use in QA processes), calibration to involve industry consultation

4 Stress-testing needs to function as it was supposed to: creating transparency, improving risk management and determining SREP

ST effect on capital management decisions



Source: Oliver Wyman industry benchmarking

Illustrative improvement areas

Increasing clarity on SREP link

- Clarity of ST repercussions
- Thresholds of SREP impacts
- Notification of intended actions

Elevating the informative value

- Shortening time to publication
- Increasing realism
- Reducing the level of detail

Sustaining the value of QA/LFP

- Dynamic relationship with JST
- JST team of experts in all areas
- Consistency on QA requests

5 ST industrialization is a key agenda theme – only possible for EBA uses, once exercise methodology and process become more predictable/stable

SUPERVISORY EXPECTATIONS

"Models applied must be used in bank's ST or internal risk management and, ideally, should not have been developed specifically/exclusively for the purpose of the EBA"

ECB guidance on stress testing for banks, 2016

VS

INDUSTRY DREAM

A robust and integrated balance sheet forecasting platform shared across all the bank to support steering and data-driven decision making, interfacing directly with supervisory platform

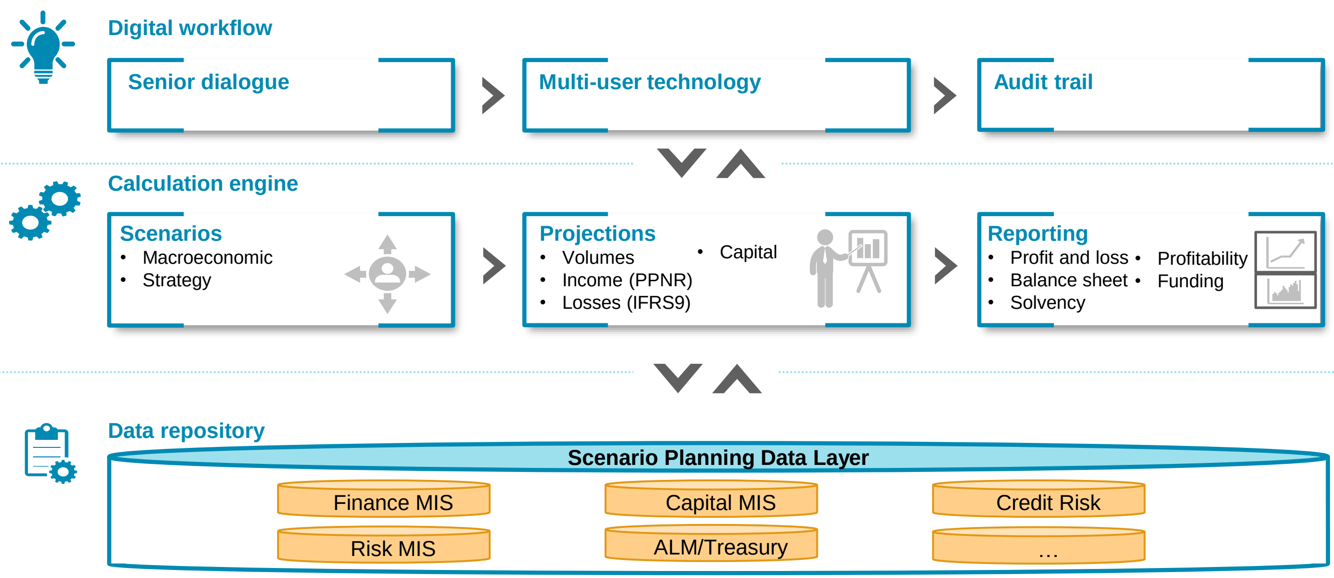
Uses

Users

- Finance
- Risk
- Strategy
- …

Illustrative use cases

- Strategic planning
- Stress Testing
- Risk appetite
- Budgeting
- Strategic FRM
- Recovery & resolution
- …

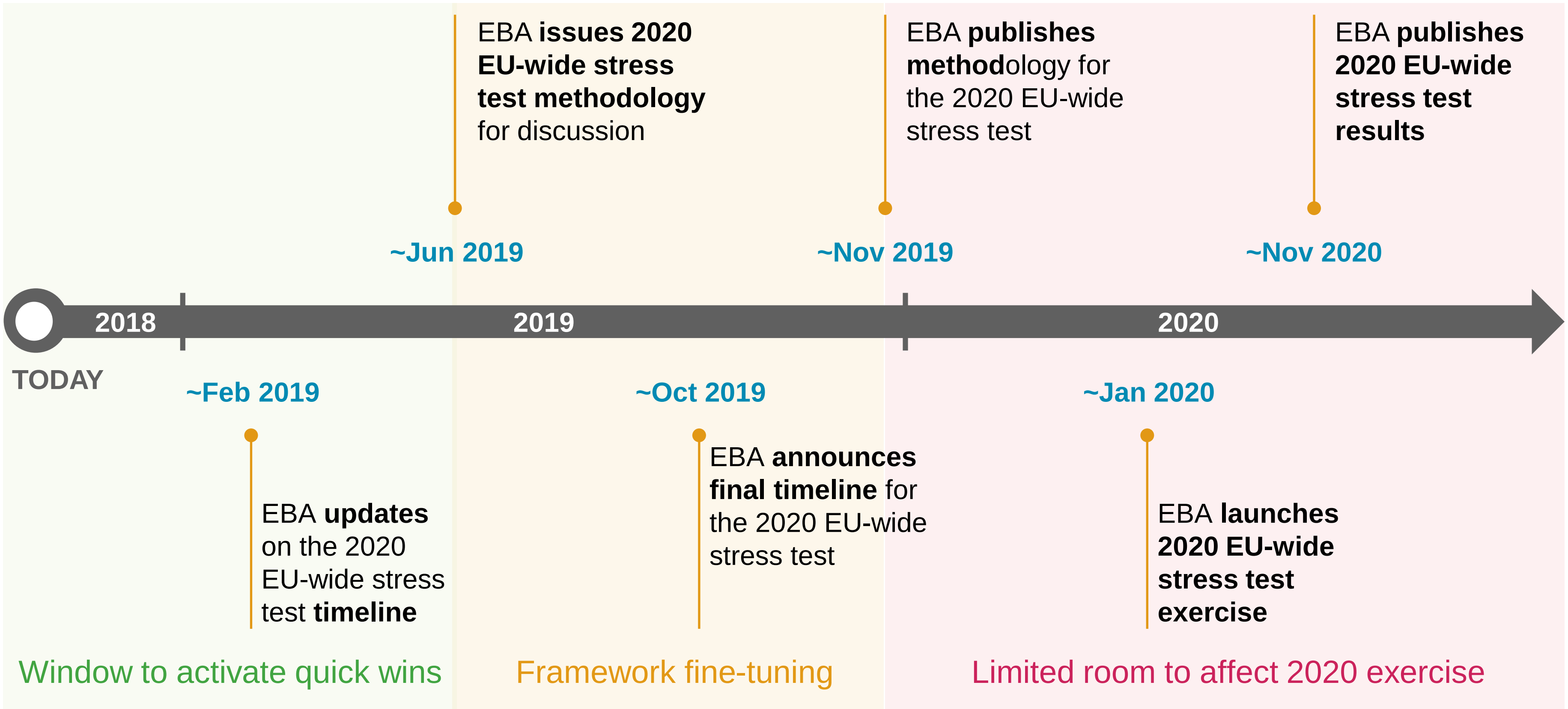


EBA 2020 and beyond:

A way towards the Future

EBA 2020 is around the corner – NOW is the right time to act on Quick Wins, Supervisors and banks have a direct opportunity to shape the next EBA STs

EBA 2020 illustrative timeline[1]



1. EBA 2018 timeline + 2 years

The case for evolution towards a 'Global Stress Testing Standard': In 3-5y time more global approaches across global authorities are possible

Stress testing principles
Basel Committee on Banking Supervision

BANK FOR INTERNATIONAL SETTLEMENTS

"*Authorities should also consider scope for greater cross-border collaboration on stress testing, where feasible, such as through common scenarios and sharing of better practices.*"

October 2018

Other jurisdictions are already enhancing their stress testing frameworks

- e.g. the **PRA in the UK** has addressed the issue of comparability by adopting **a dynamic balance sheet approach** including idiosyncratic risks
- e.g. the **US CCAR** approach completely removes the option of 'gaming the methodology' by calculating results centrally

The case for an evolved 'Global Stress Testing Standard' gains more and more advocates

- e.g. G-SIBs involved in ST exercises across multiple geographies already look for alignment of
  - **Data requirements** incl. cut-off dates & scope across risk types to remove burdens of duplication preparation
  - **Timelines** to improve consistence for global Risk Mgmt
  - **Templates**, to unlock full synergistic potential of industrializing a global ST infrastructure in-house

Questions and answers

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