

# 2018 European Bank Stress Test Results And the winners are... not that many

Our First Glance at Results  
November 2018

ALVAREZ & MARSAL



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# Highlights

2018 Stress Test Results are out after a year long process – They display strong capital position and improved capital flexibility. However, positive news are overshadowed by structural business model issues.



1

**While 2018 stress test impacts increase compared to those experienced in last stress test 2016 ...**

- Impact of 2018 stress tests shows average capital depletion (2017 CET1 to adverse) of 410bps after IFRS9 implementation, 30bps higher than depletion created by 2016 stress tests (380bps)
- Increased depletion explained by more severe scenario construction for European countries and tougher quality assurance process
- Worst 3 countries by CET1 FL depletion: UK, Germany and Denmark
- Best 3 countries by CET1 FL: Poland, Norway and Spain



2

**...banks demonstrate strong resilience to weather a stress due to improved capital starting positions.**

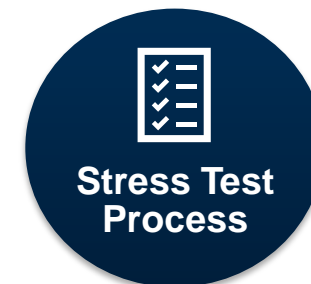
- No incremental capital needs are required as no bank fell below the 5.5% CET1 minimum threshold
- Capital flexibility measured as the buffer between CET1 after stress test and minimum threshold of 5.5% increases to 482bps from 390bps in 2016
- As result we expect positive bias towards increased capital distributions via dividend payments or buybacks
- Pillar 2 guidance requirements will remain stable particularly if minimum level of 100bps remains



3

**However, most banks are still unable to generate adequate levels of efficiency and profitability.**

- Only # 3 of the 48 analysed show ROE above cost of capital under the 2016-18 baseline scenario and no adds value under the adverse scenario
- Net interest margin for 48 banks projected lower than in 2016 tests
- Efficiency ratio at 66% still showing big room for improvement
- NPLs while reduced remain high in countries like Italy and Ireland
- European banks continue to trade below book value (0.8 times price to book) evidencing that markets discount survival of only the fittest



4

**Not only fitting of bank business models need to improve, but also the stress test supervisory process.**

- The process took a year long creating doubts about the relevance of the scenario and bank risk profile. ECB process, timing and tools can be improved
- Stress tests included for the first time the credit provisioning under IFRS9. As expected, IFRS9 creates an acceleration of credit losses in year 1 (51% of total credit losses vs 36% in prior tests)
- Unlike the UK or the US, European stress tests continue to lack the teeth as they do not represent a binding constraint for banks

# Highlights

We identify few winners in our scorecard that combines capital and performance metrics. While banks may score well in one dimension, few banks score high in both capital and business fitting metrics.



Perhaps unfairly, UK banks are the big losers of the ST18. UK banks display the highest CET1 Fully Loaded depletion (-599bps vs. EU average of -394bps) and the lowest capital flexibility post-stress vs. the 5.5% minimum threshold. All UK banks display higher depletion than in ST16, except for RBS. These results are driven by a harsh UK scenario that depicts hard Brexit. However, UK banks are capitalised above EU averages, their profitability is projected under baseline as double their EU counterparts, and they have half of NPL ratio compared to the EU average. UK banks are not necessarily more exposed to a crisis than other European banks. Furthermore, these ST results do not mean much to the UK banks as their capital requirements are set by the PRA tests coming up in early December.



German banks also get weak scores in the ST18. German banks generate the second highest depletion after UK banks (-519bps). Their strong CET1 starting point allows German banks to cope well with post stress test CET1 leaving them with capital flexibility slightly above EU average. All German banks display higher depletion than in ST16, except for Commerzbank. German banks are projecting the lowest ROE under baseline conditions (1.4% vs. EU average of 4%) due to low net interest income margins and efficiency ratio above 80%. While stronger capital flexibility than EU average, all German banks demonstrate poor performance fitting indicators.



French banks score average in the ST18. Their CET1 Fully Loaded depletion of 382 bps and post stress CET1 ratio of 9.7% is slightly below EU average of 10%. All banks experience higher depletion than in ST16 due to more severe scenario. While French banks experienced the highest increase in loan volume due vs. 16 levels due to the strength of the economy, NII margins declined and are below EU average. Furthermore, their efficiency ratio is projected at 73% well above the EU average of 66%. Profitability measured in terms of ROE continues to be low with all banks projecting ROE under baseline below 6%.



Dutch banks perform well in the ST18. Their CET1 Fully Loaded depletion of 372 bps and more importantly their post stress CET1 ratio of 11.8% is well above EU average of 10%. Their performance metrics are also better than EU counterparts, with NII margins improving, efficiency at average levels and NPL ratios below average. ABN Amro's depletion improved by 324bps and it is one of the few banks projecting ROE levels above cost of capital.



Italian banks are apparent winners in the ST18. Their CET1 Fully Loaded depletion of -304bps improves by 76bps compared to ST16. However, the scenario used might not reflect full scope of potential risks being faced. For instance, Italian sovereign bond spreads have widened during the last two months twice the shock considered in the EBA stress test. In addition, post stress CET1 ratio of 9.1% is below EU average of 10%. Lastly, NPL ratio of 10% is well above EU average and acts as a binding constraint for loan growth and profitability.



Spanish banks look strong in terms of CET1 depletion (-189bps) much lower than EU average. However, post stress CET1 ratio of 8.9% is the lowest after the UK due to relatively low CET1 starting points. Santander and BBVA are two of the few European banks that display negative implied P2G. In addition, margins, efficiency and ROE are all projected at levels above baseline EU average. Santander is one of the few banks projecting ROE levels above cost of capital.

## Nordic Banks

Nordic banks are winners in the ST18 due to very high CET1 FL levels: Sweden (20.7%), Finland (20.2%) and Norway (16.5%). This leaves Nordic banks with the best capital flexibility after stress across the EU. They also display strong performance metrics. Banks in Sweden and Norway are the only ones with efficiency ratios below 50%. Their NPL ratio is well below EU average. Lastly, Swedish banks are the best performers across EU in terms of ROE projections.





## Section **1** | Stress Test Impacts



# 1. Stress Test Impacts

2018 stress test capital depletion increased compared to those experienced in last stress test 2016 (410bps vs. 380bps PH).

- Impact of 2018 stress tests shows average capital depletion (2017 CET1 transitional to adverse) of 410 bps after IFRS9 implementation, 30bps higher than depletion created by 2016 stress tests (380bps)

| Capital Depletion               | All Banks      | European G-SIBs | IFRS9 Restat. | Worst 3 Countries              | Best 3 Countries                  | Worst 3 Banks                    | Best 3 FL Banks                  |
|---------------------------------|----------------|-----------------|---------------|--------------------------------|-----------------------------------|----------------------------------|----------------------------------|
| <b>CET 1 Phased-In Adverse</b>  | <b>-410bps</b> | <b>-410bps</b>  | <b>-12bps</b> | <b>Germany, UK and Ireland</b> | <b>Poland, Norway and Hungary</b> | NordLB, Nederlandse and Deutsche | Powszechna, Polska, and DNB Bank |
| <b>CET Fully Loaded Adverse</b> | <b>-394bps</b> | <b>-390bps</b>  | <b>-22bps</b> | <b>UK, Germany and Denmark</b> | <b>Poland, Norway and Spain</b>   | NordLB, Nederlandse and Lloyds   | Powszechna, Santander and Polska |

- European G-SIBs display average capital depletion of 410 bps in line with total average
- Worst 3 capital depletion countries measured on fully loaded basis (UK, Germany and Denmark) vs Top 3 (Poland, Norway and Spain). UK higher impacts than ST16 explained by hard brexit scenario.
- Worst 3 capital depletion banks measured on fully loaded basis (NordLB, Nederlandse, and Lloyds)
- Best 3 capital depletion banks measured on fully loaded basis (Powszechna, Santander and Polska)

- Increased depletion explained by more severe scenario construction for European countries, increased methodology constraints and tougher quality assurance process (which we estimate in average to have contributed 175bps vs. 100bps in 2016). By main driver of CET1 depletion

- NII: +170pbs same as ST16
- Credit Loss: - 430bps increasing contribution by 54bps compared to ST16
- Trading Income: +20bps same as ST16
- OCI Impact: -30bps 41bps lower than ST16
- RWA: -130bps, 31bps higher than ST16

# 1. Stress Test Impacts

2018 stress test capital depletion increased compared to those experienced in last stress test 2016, mainly due to credit losses and RWA impact.

## Scorecard

Total Depletion

IFRS9 Restatement

Depletion by Country/Bank

Capital Waterfall

| EU - 2018 EBA ST Results |                   | 2018 Results | 2016 Results | Status |
|--------------------------|-------------------|--------------|--------------|--------|
| Starting Point           | CET1 PH 2017      | 14.4%        | 13.2%        | ↑      |
|                          | CET1 FL 2017      | 14.0%        | 12.6%        | ↑      |
| Ending Point             | CET1 PH 2020 Adv  | 10.3%        | 9.4%         | ↑      |
|                          | CET1 FL 2020 Adv  | 10.1%        | 9.2%         | ↑      |
| Depletion bps            | CET1 PH 2020 Adv  | (410)        | (383)        | ↑      |
|                          | CET1 FL 2020 Adv  | (394)        | (335)        | ↑      |
| Depletion Year 1 bps     | CET1 PH 2018 Adv  | (269)        | (339)        | ↓      |
|                          | CET1 FL 2018 Adv  | (323)        | (423)        | ↓      |
| Excess over 5.5%         | CET1 PH 2020 Adv  | 482          | 386          | ↑      |
|                          | CET1 FL 2020 Adv  | 455          | 372          | ↑      |
| Leverage                 | Leverage SP 2017  | 5.1%         | 4.9%         | ↑      |
|                          | Leverage 2020 Adv | 4.2%         | 4.1%         | ↑      |

| EU - 2018 EBA ST Results |  | 2018 Results | 2016 Results | Status |
|--------------------------|--|--------------|--------------|--------|
| NII                      | NII Adverse 17-20 (%)                  | -14%         | -17%         | ↓      |
|                          | NII Adverse 17-20 / RWA (bps)          | 942          | 888          | ↑      |
| NTI                      | NTI Adverse 17-20 (%)                  | -89%         | -83%         | ↑      |
|                          | NTI Adverse 17-20 / RWA (bps)          | 18           | 20           | ↓      |
| Credit Loss              | Credit Loss Adverse 17-20 (%)          | 171%         | 83%          | ↑      |
|                          | Credit Loss Adverse 17-20 / RWA (bps)  | -426         | -371         | ↑      |
|                          | Credit Loss Year 1 / Credit Loss Total | 50%          | 36%          | ↑      |
| RWA                      | RWA Adverse 17-20 (%)                  | 12%          | 10%          | ↑      |
|                          | RWA Adverse 17-20 in CET1 terms (bps)  | (126)        | (94)         | ↑      |

# 1. Stress Test Impacts

2018 stress test impact shows higher capital depletion (measured as 2017 restated CET1 to adverse) compared to ST'16 (410bps vs. 380bps). Capital flexibility also presents higher results (482bps vs. 390bps).

Scorecard

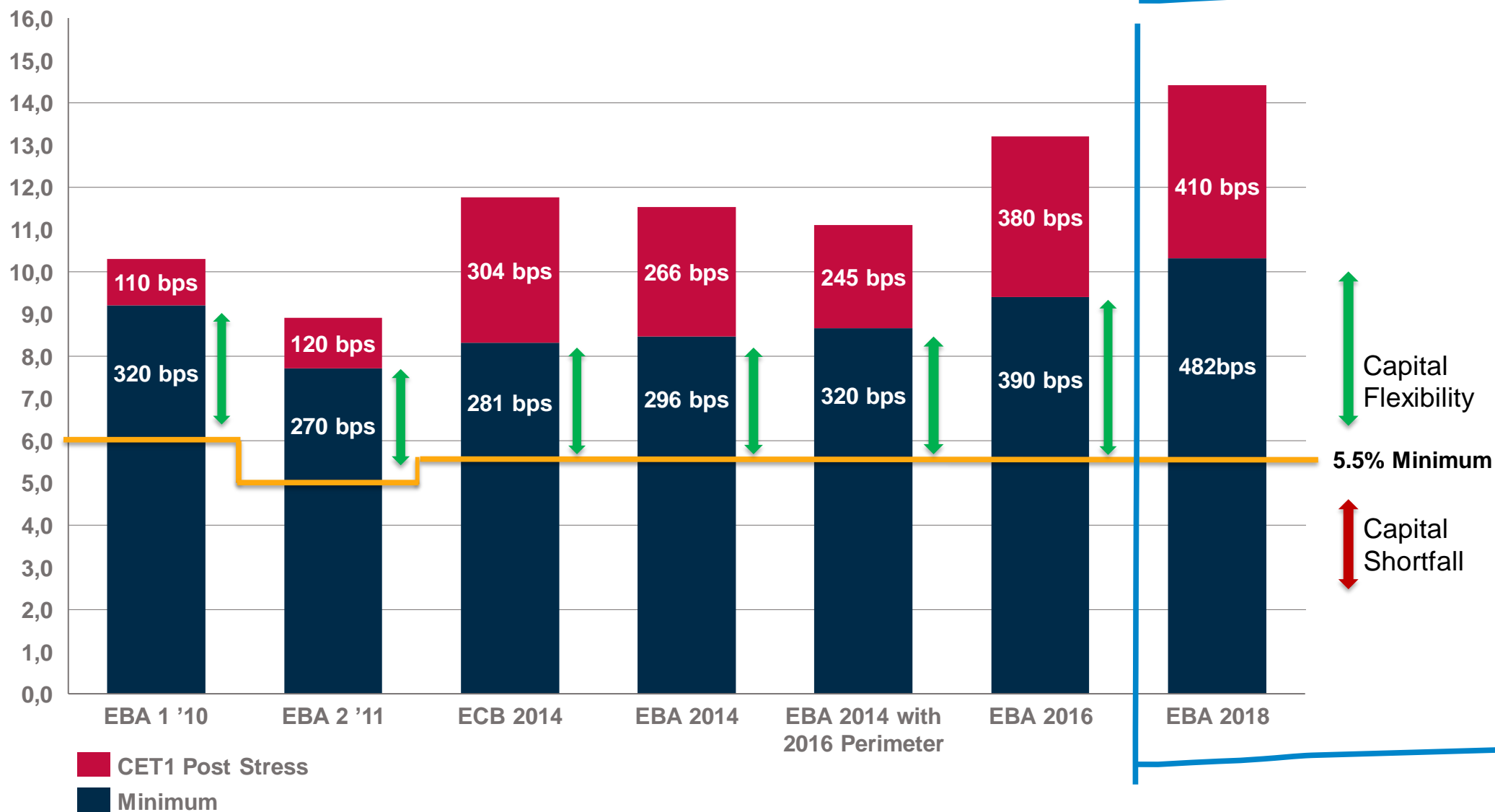
Total Depletion

IFRS9 Restatement

Depletion by Country/Bank

Capital Waterfall

## CET1 Ratio (%)





# 1. Stress Test Impacts

Capital flexibility has improved as compared to ST'16 due to a higher starting point level. Out of 48 banks, none fell below 5.5%, and 41 maintain ratios above 8%.

Scorecard

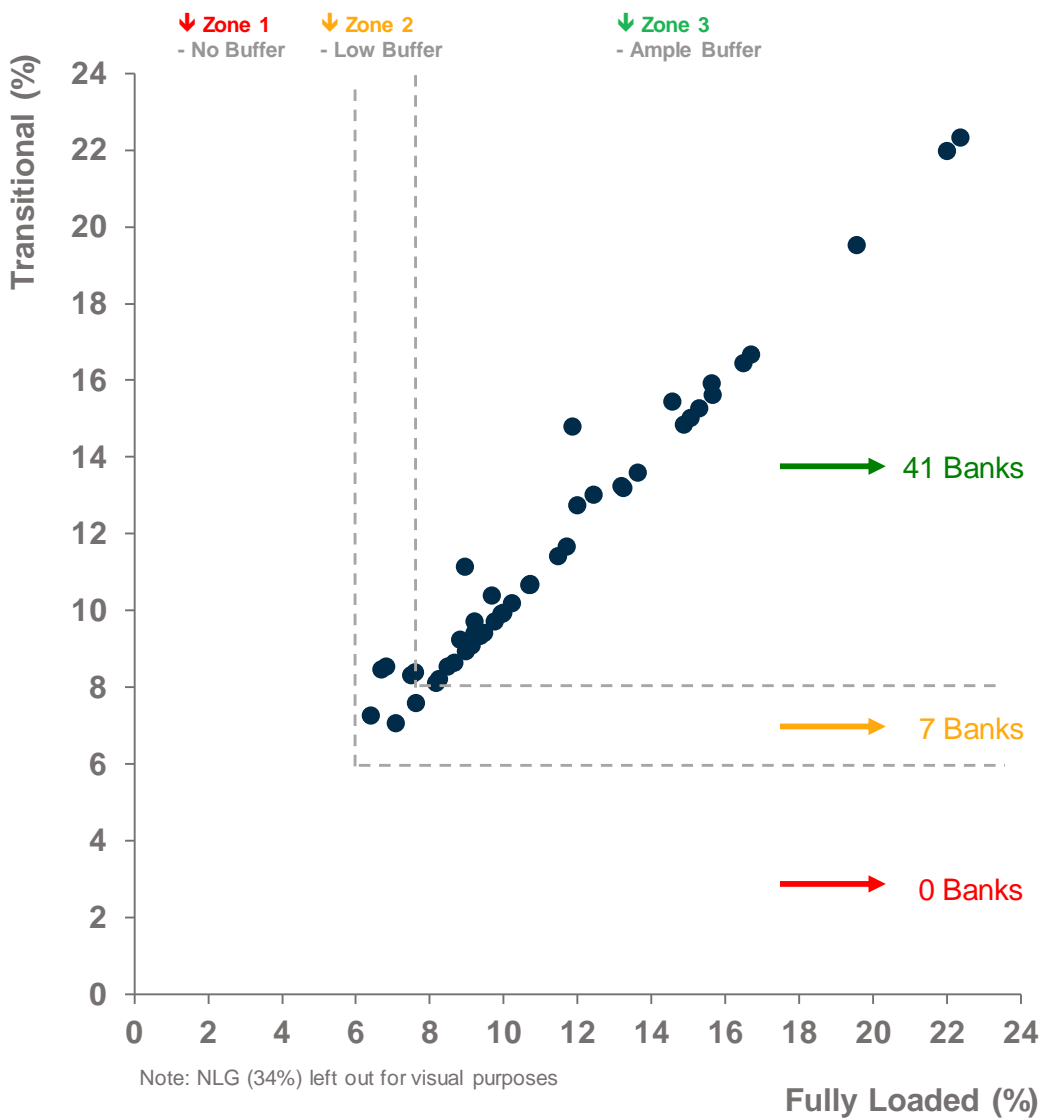
Total Depletion

IFRS9 Restatement

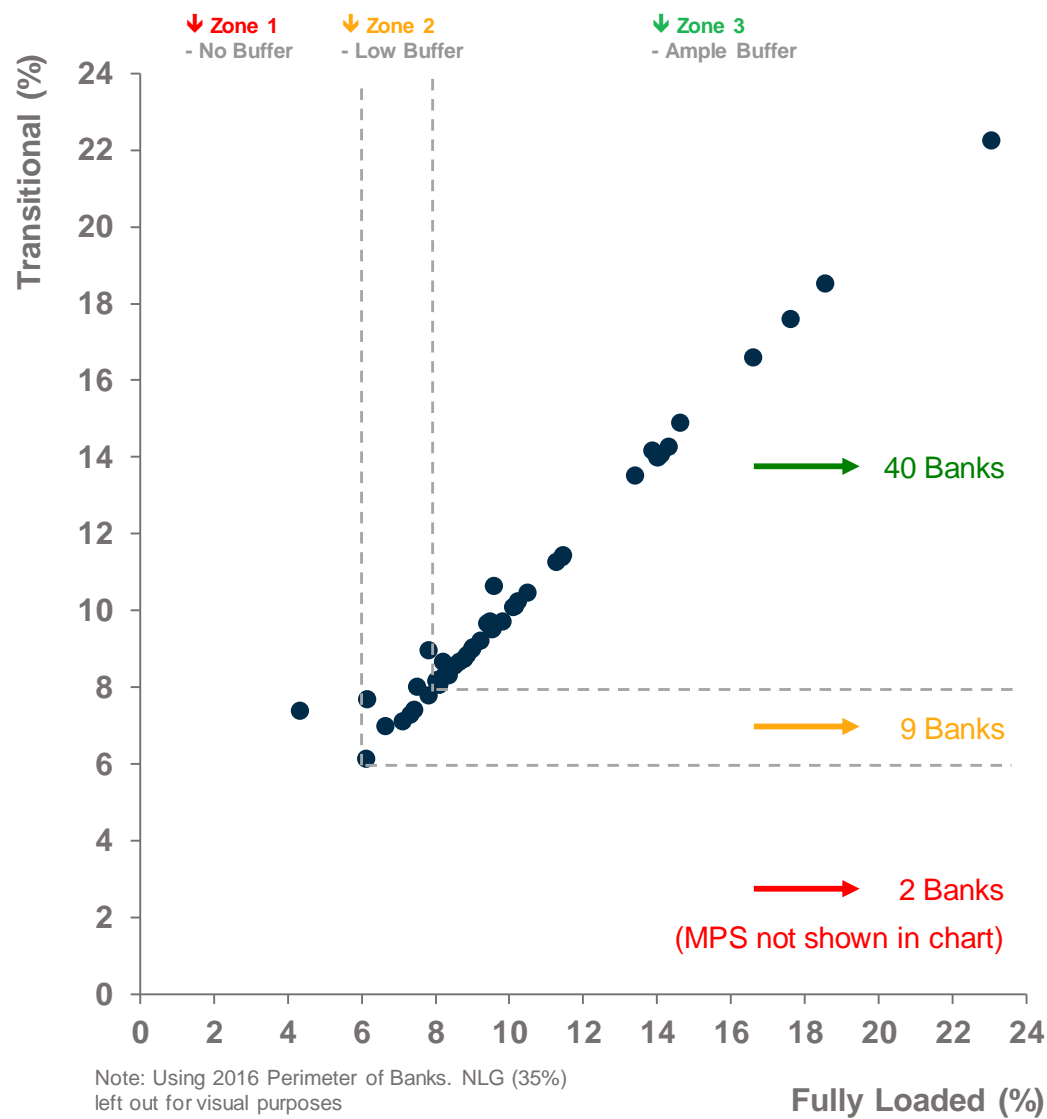
Depletion by Country/Bank

Capital Waterfall

## 2018 Results



## 2016 Results



# 1. Stress Test Impacts

Out of the 48 banks, the average IFRS9 restatement impact was 22bps (FL). Italian banks suffered the highest impact with an average decrease of 86bps of CET1, while Finland had a positive impact of 10bps.

| Scorecard |                                      | Total Depletion |                    | IFRS9 Restatement     |          | Depletion by Country/Bank |                                       | Capital Waterfall |                    |                       |          |
|-----------|--------------------------------------|-----------------|--------------------|-----------------------|----------|---------------------------|---------------------------------------|-------------------|--------------------|-----------------------|----------|
| Country   | Bank Name                            | Bank Code       | IFRS9 Impact (bps) | CET1 after Adjustment | Quartile | Country                   | Bank Name                             | Bank Code         | IFRS9 Impact (bps) | CET1 after Adjustment | Quartile |
| AT        | Erste Group Bank AG                  | ERST            | 6                  | 13.0%                 | 1st      | FR                        | Société Générale S.A.                 | SOCG              | -15                | 11.2%                 |          |
| AT        | Raiffeisen Bank International AG     | RAZE            | -25                | 12.5%                 |          | HU                        | OTP Bank Nyrt.                        | OTP               | -35                | 14.9%                 | 4th      |
| BE        | Belfius Banque SA                    | BELF            | 29                 | 16.2%                 | 1st      | IE                        | Allied Irish Banks Group plc          | AIB               | -45                | 17.0%                 | 4th      |
| BE        | KBC Group NV                         | KBC             | -39                | 16.0%                 | 4th      | IE                        | Bank of Ireland Group plc             | BIRE              | -21                | 13.6%                 |          |
| DE        | Bayerische Landesbank                | BLB             | 7                  | 15.4%                 | 1st      | IT                        | Banco BPM S.p.A.                      | COPOP             | -72                | 11.2%                 | 4th      |
| DE        | Commerzbank AG                       | COM             | -79                | 13.3%                 | 4th      | IT                        | Intesa Sanpaolo S.p.A.                | ISP               | -102               | 11.8%                 | 4th      |
| DE        | Deutsche Bank AG                     | DEBK            | -14                | 13.9%                 |          | IT                        | UniCredit S.p.A.                      | UC                | -93                | 12.7%                 | 4th      |
| DE        | DZ BANK AG Deutsche Zentral          | DZB             | -10                | 13.6%                 |          | IT                        | Unione di Banche Italiane Società     | UBI               | -23                | 11.2%                 |          |
| DE        | Landesbank Baden-Württemberg         | LBW             | 38                 | 16.0%                 | 1st      | NL                        | ABN AMRO Group N.V.                   | ABN               | -13                | 17.5%                 |          |
| DE        | Landesbank Hessen-Thüringen          | LHTG            | 85                 | 16.0%                 | 1st      | NL                        | Coöperatieve Rabobank U.A.            | COOPR             | -16                | 15.3%                 |          |
| DE        | Norddeutsche Landesbank              | NLG             | 0                  | 41.6%                 | 1st      | NL                        | ING Groep N.V.                        | ING               | -18                | 14.5%                 |          |
| DE        | NRW.Bank                             | NRW             | 97                 | 12.9%                 | 1st      | NL                        | N.V. Bank Nederlandse Gemeenten       | GEM               | -104               | 29.8%                 | 4th      |
| DK        | Danske Bank                          | DBK             | -25                | 17.3%                 |          | NO                        | DNB Bank Group                        | DNB               | -3                 | 16.5%                 | 1st      |
| DK        | Jyske Bank                           | JBK             | -34                | 16.0%                 |          | PL                        | Polska Kasa Opieki SA                 | PLK               | -43                | 16.0%                 | 4th      |
| DK        | Nykredit Realkredit                  | NKR             | -14                | 20.5%                 |          | PL                        | Powszechna Kasa Oszczednosci Bank     | PBP               | -34                | 15.9%                 | 4th      |
| ES        | Banco Bilbao Vizcaya Argentaria S.A. | BBVA            | -31                | 10.7%                 |          | SE                        | Nordea Bank - group                   | NORD              | -15                | 19.3%                 |          |
| ES        | Banco de Sabadell S.A.               | SAB             | -75                | 12.0%                 | 4th      | SE                        | Skandinaviska Enskilda Banken - group | SEB               | -17                | 19.2%                 |          |
| ES        | Banco Santander S.A.                 | SAN             | -23                | 10.6%                 |          | SE                        | Svenska Handelsbanken - group         | SHAN              | -13                | 22.6%                 |          |
| ES        | CaixaBank, S.A.                      | KXA             | -15                | 11.5%                 |          | SE                        | Swedbank - group                      | SWED              | -3                 | 24.6%                 | 1st      |
| FI        | OP Financial Group                   | OPG             | 10                 | 20.2%                 | 1st      | UK                        | Barclays plc                          | BAR               | -34                | 12.9%                 | 4th      |
| FR        | BNP Paribas                          | BNPP            | -16                | 11.5%                 |          | UK                        | HSBC Holdings plc                     | HSBC              | 1                  | 14.5%                 | 1st      |
| FR        | Groupe BPCE                          | BPCE            | -12                | 15.1%                 |          | UK                        | Lloyds Banking Group plc              | LLOYD             | -31                | 13.7%                 |          |
| FR        | Groupe Crédit Agricole               | CA              | -30                | 14.6%                 |          | UK                        | The Royal Bank of Scotland Group Plc  | RBS               | 26                 | 16.2%                 | 1st      |
| FR        | Group Crédit Mutuel                  | CMUT            | -19                | 17.2%                 |          | <b>G-SIBs</b>             | <b>Total G-SIBs Weighted Avg.</b>     |                   | <b>-21</b>         | <b>13.0%</b>          |          |
| FR        | La Banque Postale                    | LBP             | -25                | 13.2%                 |          | <b>EU</b>                 | <b>Total EU Weighted Avg.</b>         |                   | <b>-22</b>         | <b>14.0%</b>          |          |

# 1. Stress Test Impacts

Out of the 48 banks, the average IFRS9 restatement impact was 22pbs (FL). Italian banks suffered the highest impact with an average decrease of 86bps of CET1, while Finland had a positive impact of 10bps.

Scorecard

Total Depletion

IFRS9 Restatement

Depletion by Country/Bank

Capital Waterfall

| Code                              | Bank Name      | IFRS9 Impact (bps) | CET1 after Adjustment | Quartile |
|-----------------------------------|----------------|--------------------|-----------------------|----------|
| AT                                | Austria        | -6                 | 12.8%                 | 1st      |
| BE                                | Belgium        | -15                | 16.0%                 |          |
| DE                                | Germany        | -7                 | 15.4%                 | 1st      |
| DK                                | Denmark        | -23                | 17.9%                 |          |
| ES                                | Spain          | -28                | 10.8%                 |          |
| FI                                | Finland        | 10                 | 20.2%                 | 1st      |
| FR                                | France         | -18                | 13.5%                 |          |
| HU                                | Hungary        | -35                | 14.9%                 | 4th      |
| IE                                | Ireland        | -34                | 15.4%                 | 4th      |
| IT                                | Italy          | -86                | 12.1%                 | 4th      |
| NL                                | Netherlands    | -18                | 15.6%                 |          |
| NO                                | Norway         | -3                 | 16.5%                 | 1st      |
| PL                                | Poland         | -38                | 15.9%                 | 4th      |
| SE                                | Sweden         | -13                | 20.7%                 |          |
| UK                                | United Kingdom | -8                 | 14.3%                 |          |
| <b>Total G-SIBs Weighted Avg.</b> |                | -21                | 13.0%                 |          |
| <b>Total EU Weighted Avg.</b>     |                | -22                | 14.0%                 |          |

# 1. Stress Test Impacts

Worst capital depletion banks on fully loaded basis are NordLB, Nederlandse, and Lloyds. Best capital depletion banks on fully loaded basis are Powszechna, Santander and Polska.

Scorecard

Total Depletion

IFRS9 Restatement

Depletion by Country/Bank

Capital Waterfall

| Country | Bank Name                            | EBA 2018                          |             |      |              |             |      | EBA 2016                          |             |      |              |             |           | Depletion Chg. 18 vs 16 (FL) |
|---------|--------------------------------------|-----------------------------------|-------------|------|--------------|-------------|------|-----------------------------------|-------------|------|--------------|-------------|-----------|------------------------------|
|         |                                      | Stressed CET1 Depletion 2017-2020 |             |      |              |             |      | Stressed CET1 Depletion 2015-2018 |             |      |              |             |           |                              |
|         |                                      | Transit.                          | Impact Bps  | Qrt. | Fully Loaded | Impact Bps  | Qrt. | Transit.                          | Impact Bps  | Qrt. | Fully Loaded | Impact Bps  | Qrt.      |                              |
| AT      | Erste Group Bank AG                  |                                   | -486        |      |              | -456        |      | -416                              |             |      | -423         | 4th         | 33        |                              |
| AT      | Raiffeisen Bank International AG     |                                   | -282        | 1st  |              | -273        |      | -432                              |             |      | -408         |             | -135      |                              |
| BE      | Belfius Banque SA                    |                                   | -296        |      |              | -296        |      | -449                              |             |      | -323         |             | -28       |                              |
| BE      | KBC Group NV                         |                                   | -254        | 1st  |              | -236        | 1st  |                                   | -389        |      |              | -361        | -124      |                              |
| DE      | Bayerische Landesbank                |                                   | -596        | 4th  |              | -592        | 4th  |                                   | -690        | 4th  |              | -365        | 227       |                              |
| DE      | Commerzbank AG                       |                                   | -417        |      |              | -341        |      |                                   | -636        | 4th  |              | -471        | 4th       | -130                         |
| DE      | Deutsche Bank AG                     |                                   | -651        | 4th  |              | -576        | 4th  |                                   | -540        | 4th  |              | -332        | 244       |                              |
| DE      | DZ BANK AG Deutsche Zentral          |                                   | -481        |      |              | -467        |      |                                   | 0           | 1st  |              | -250        | 217       |                              |
| DE      | Landesbank Baden-Württemberg         |                                   | -547        | 4th  |              | -536        | 4th  |                                   | -694        | 4th  |              | -658        | 4th       | -122                         |
| DE      | Landesbank Hessen-Thüringen          |                                   | -614        | 4th  |              | -608        | 4th  |                                   | -369        |      |              | -301        | 307       |                              |
| DE      | Norddeutsche Landesbank              |                                   | -778        | 4th  |              | -769        | 4th  |                                   | -742        | 4th  |              | -714        | 4th       | 55                           |
| DE      | NRW.Bank                             |                                   | -608        | 4th  |              | -582        | 4th  |                                   | -432        |      |              | -347        | 235       |                              |
| DK      | Danske Bank                          |                                   | -481        |      |              | -532        | 4th  |                                   | -210        | 1st  |              | -147        | 1st       | 385                          |
| DK      | Jyske Bank                           |                                   | -432        |      |              | -432        |      |                                   | -206        | 1st  |              | -201        | 1st       | 231                          |
| DK      | Nykredit Realkredit                  |                                   | -492        |      |              | -484        |      |                                   | -526        | 4th  |              | -533        | 4th       | -49                          |
| ES      | Banco Bilbao Vizcaya Argentaria S.A. |                                   | -234        | 1st  |              | -193        | 1st  |                                   | -375        |      |              | -208        | 1st       | -15                          |
| ES      | Banco de Sabadell S.A.               |                                   | -511        |      |              | -446        |      |                                   | -350        |      |              | -369        | 77        |                              |
| ES      | Banco Santander S.A.                 |                                   | -259        | 1st  |              | -141        | 1st  |                                   | -402        |      |              | -199        | 1st       | -58                          |
| ES      | CaixaBank, S.A.                      |                                   | -343        |      |              | -239        | 1st  |                                   | -273        |      |              | -184        | 1st       | 55                           |
| FI      | OP Financial Group                   |                                   | -491        |      |              | -491        |      |                                   | -458        |      |              | -455        | 4th       | 36                           |
| FR      | BNP Paribas                          |                                   | -297        |      |              | -288        |      |                                   | -246        | 1st  |              | -236        | 52        |                              |
| FR      | Groupe BPCE                          |                                   | -448        |      |              | -445        |      |                                   | -329        |      |              | -331        | 113       |                              |
| FR      | Groupe Crédit Agricole               |                                   | -433        |      |              | -437        |      |                                   | -303        |      |              | -319        | 117       |                              |
| FR      | Group Crédit Mutuel                  |                                   | -399        |      |              | -405        |      |                                   | -199        | 1st  |              | -216        | 1st       | 189                          |
|         | <b>Total G-SIBs Weighted Avg.</b>    |                                   | <b>-410</b> |      |              | <b>-390</b> |      |                                   | <b>-374</b> |      |              | <b>-378</b> | <b>12</b> |                              |
|         | <b>Total EU Weighted Avg.</b>        |                                   | <b>-410</b> |      |              | <b>-394</b> |      |                                   | <b>-383</b> |      |              | <b>-335</b> | <b>59</b> |                              |

# 1. Stress Test Impacts

Worst capital depletion banks on fully loaded basis are NordLB, Nederlandse and Lloyds. Best capital depletion banks on fully loaded basis are Powszechna, Santander and Polska.

Scorecard

Total Depletion

IFRS9 Restatement

Depletion by Country/Bank

Capital Waterfall

| Country | Bank Name                             | EBA 2018                          |             |      |              |             |      | EBA 2016                          |             |      |              |             |           | Depletion Chg. 18 vs 16 (FL) |
|---------|---------------------------------------|-----------------------------------|-------------|------|--------------|-------------|------|-----------------------------------|-------------|------|--------------|-------------|-----------|------------------------------|
|         |                                       | Stressed CET1 Depletion 2017-2020 |             |      |              |             |      | Stressed CET1 Depletion 2015-2018 |             |      |              |             |           |                              |
|         |                                       | Transit.                          | Impact Bps  | Qrt. | Fully Loaded | Impact Bps  | Qrt. | Transit.                          | Impact Bps  | Qrt. | Fully Loaded | Impact Bps  | Qrt.      |                              |
| FR      | La Banque Postale                     |                                   | -460        |      |              | -494        |      | -348                              |             |      | -470         | 4th         | 24        |                              |
| FR      | Société Générale S.A.                 |                                   | -378        |      |              | -363        |      | -339                              |             |      | -341         |             | 22        |                              |
| HU      | OTP Bank Nyrt.                        |                                   | -237        | 1st  |              | -246        | 1st  |                                   | -419        |      |              | -372        | -126      |                              |
| IE      | Allied Irish Banks Group plc          |                                   | -599        | 4th  |              | -520        |      |                                   | -847        | 4th  |              | -880        | 4th       | -359                         |
| IE      | Bank of Ireland Group plc             |                                   | -467        |      |              | -468        |      |                                   | -560        | 4th  |              | -513        | 4th       | -45                          |
| IT      | Banco BPM S.p.A.                      |                                   | -547        | 4th  |              | -453        |      |                                   | -410        |      |              | -339        | 114       |                              |
| IT      | Intesa Sanpaolo S.p.A.                |                                   | -284        |      |              | -219        | 1st  |                                   | -274        |      |              | -226        | 1st       | -7                           |
| IT      | UniCredit S.p.A.                      |                                   | -346        |      |              | -334        |      |                                   | -347        |      |              | -329        | 5         |                              |
| IT      | Unione di Banche Italiane Società     |                                   | -338        |      |              | -374        |      |                                   | -323        |      |              | -277        | 97        |                              |
| NL      | ABN AMRO Group N.V.                   |                                   | -269        | 1st  |              | -267        | 1st  |                                   | -597        | 4th  |              | -591        | 4th       | -324                         |
| NL      | Coöperatieve Rabobank U.A.            |                                   | -414        |      |              | -390        |      |                                   | -538        | 4th  |              | -387        | 3         |                              |
| NL      | ING Groep N.V.                        |                                   | -383        |      |              | -381        |      |                                   | -394        |      |              | -371        | 10        |                              |
| NL      | N.V. Bank Nederlandse Gemeenten       |                                   | -712        | 4th  |              | -742        | 4th  |                                   | -706        | 4th  |              | -855        | 4th       | -113                         |
| NO      | DNB Bank Group                        |                                   | -115        | 1st  |              | -150        | 1st  |                                   | -1          | 1st  |              | -1          | 1st       | 149                          |
| PL      | Polska Kasa Opieki SA                 |                                   | -113        | 1st  |              | -144        | 1st  |                                   | 0           | 1st  |              | -230        | 1st       | -86                          |
| PL      | Powszechna Kasa Oszczednosci Bank     |                                   | -52         | 1st  |              | -30         | 1st  |                                   | -182        | 1st  |              | -198        | 1st       | -168                         |
| SE      | Nordea Bank - group                   |                                   | -265        | 1st  |              | -265        | 1st  |                                   | -236        | 1st  |              | -236        | 30        |                              |
| SE      | Skandinaviska Enskilda Banken - group |                                   | -272        | 1st  |              | -272        |      |                                   | -225        | 1st  |              | -225        | 1st       | 47                           |
| SE      | Svenska Handelsbanken - group         |                                   | -307        |      |              | -307        |      |                                   | -270        | 1st  |              | -270        | 37        |                              |
| SE      | Swedbank - group                      |                                   | -260        | 1st  |              | -260        | 1st  |                                   | -187        | 1st  |              | -203        | 1st       | 57                           |
| UK      | Barclays plc                          |                                   | -604        | 4th  |              | -657        | 4th  |                                   | -412        |      |              | -405        | 252       |                              |
| UK      | HSBC Holdings plc                     |                                   | -520        |      |              | -533        | 4th  |                                   | -312        |      |              | -312        | 221       |                              |
| UK      | Lloyds Banking Group plc              |                                   | -548        | 4th  |              | -694        | 4th  |                                   | -291        |      |              | -291        | 403       |                              |
| UK      | The Royal Bank of Scotland Group Plc  |                                   | -623        | 4th  |              | -625        | 4th  |                                   | -746        | 4th  |              | -745        | 4th       | -120                         |
|         | <b>Total G-SIBs Weighted Avg.</b>     |                                   | <b>-410</b> |      |              | <b>-390</b> |      |                                   | <b>-374</b> |      |              | <b>-378</b> | <b>12</b> |                              |
|         | <b>Total EU Weighted Avg.</b>         |                                   | <b>-410</b> |      |              | <b>-394</b> |      |                                   | <b>-383</b> |      |              | <b>-335</b> | <b>59</b> |                              |

# 1. Stress Test Impacts

Worst capital depletion country for transitional CET1 is Germany and for fully loaded CET1 is UK. Best performer is Poland. UK higher impacts than ST16 explained by hard Brexit scenario.

Scorecard

Total Depletion

IFRS9 Restatement

Depletion by Country/Bank

Capital Waterfall

| Country | Bank Name                         | EBA 2018<br>Stressed CET1 Depletion 2017-2020 |               |      |                 |               | EBA 2016<br>Stressed CET1 Depletion 2015-2018 |          |               |      |                 | Depletion<br>Chg. 18 vs<br>16 (FL) |               |           |
|---------|-----------------------------------|---|---------------|------|-----------------|---------------|---|----------|---------------|------|-----------------|------------------------------------|---------------|-----------|
|         |                                   | Transit.                                      | Impact<br>Bps | Qrt. | Fully<br>Loaded | Impact<br>Bps | Qrt.  | Transit. | Impact<br>Bps | Qrt. | Fully<br>Loaded |                                    | Impact<br>Bps | Qrt.      |
| AT      | Austria                           |   | -427          |      |                 | -383          |   |          | -423          |      |                 | -418                               | 4th           | -34       |
| BE      | Belgium                           |   | -294          |      |                 | -257          |   |          | -411          |      |                 | -348                               |               | -91       |
| DE      | Germany                           |   | -567          | 4th  |                 | -519          | 4th   |          | -537          | 4th  |                 | -387                               |               | 133       |
| DK      | Denmark                           |   | -474          |      |                 | -502          | 4th   |          | -283          | 1st  |                 | -245                               |               | 257       |
| ES      | Spain                             |   | -279          |      |                 | -189          | 1st   |          | -386          |      |                 | -232                               | 1st           | -43       |
| FI      | Finland                           |   | -492          | 4th  |                 | -491          |   |          | -458          | 4th  |                 | -455                               | 4th           | 36        |
| FR      | France                            |   | -385          |      |                 | -382          |   |          | -286          |      |                 | -292                               |               | 90        |
| HU      | Hungary                           |   | -231          | 1st  |                 | -246          | 1st   |          | -419          |      |                 | -372                               |               | -126      |
| IE      | Ireland                           |   | -540          | 4th  |                 | -497          | 4th   |          | -710          | 4th  |                 | -703                               | 4th           | -206      |
| IT      | Italy                             |   | -341          |      |                 | -304          |   |          | -409          |      |                 | -380                               |               | -76       |
| NL      | Netherlands                       |   | -380          |      |                 | -372          |   |          | -480          | 4th  |                 | -422                               | 4th           | -50       |
| NO      | Norway                            |   | -111          | 1st  |                 | -150          | 1st   |          | -1            | 1st  |                 | -1                                 | 1st           | 149       |
| PL      | Poland                            |   | -72           | 1st  |                 | -73           | 1st   |          | -182          | 1st  |                 | -198                               | 1st           | -125      |
| SE      | Sweden                            |   | -274          | 1st  |                 | -274          |   |          | -234          | 1st  |                 | -236                               | 1st           | 38        |
| UK      | United Kingdom                    |   | -556          | 4th  |                 | -599          | 4th   |          | -400          |      |                 | -398                               |               | 201       |
|         | <b>Total G-SIBs Weighted Avg.</b> |   | <b>-410</b>   |      |                 | <b>-390</b>   |   |          | <b>-375</b>   |      |                 | <b>-339</b>                        |               | <b>51</b> |
|         | <b>Total EU Weighted Avg.</b>     |   | <b>-410</b>   |      |                 | <b>-394</b>   |   |          | <b>-383</b>   |      |                 | <b>-335</b>                        |               | <b>59</b> |



# 1. Stress Test Impacts

CET1 adverse depletion of 394bps (fully loaded) driven by loan losses (-430bps), NII (+170bps) and RWA impacts (-130bps). Compared to ST16, credit loss and RWA increase partially offset by lower OCI impacts.

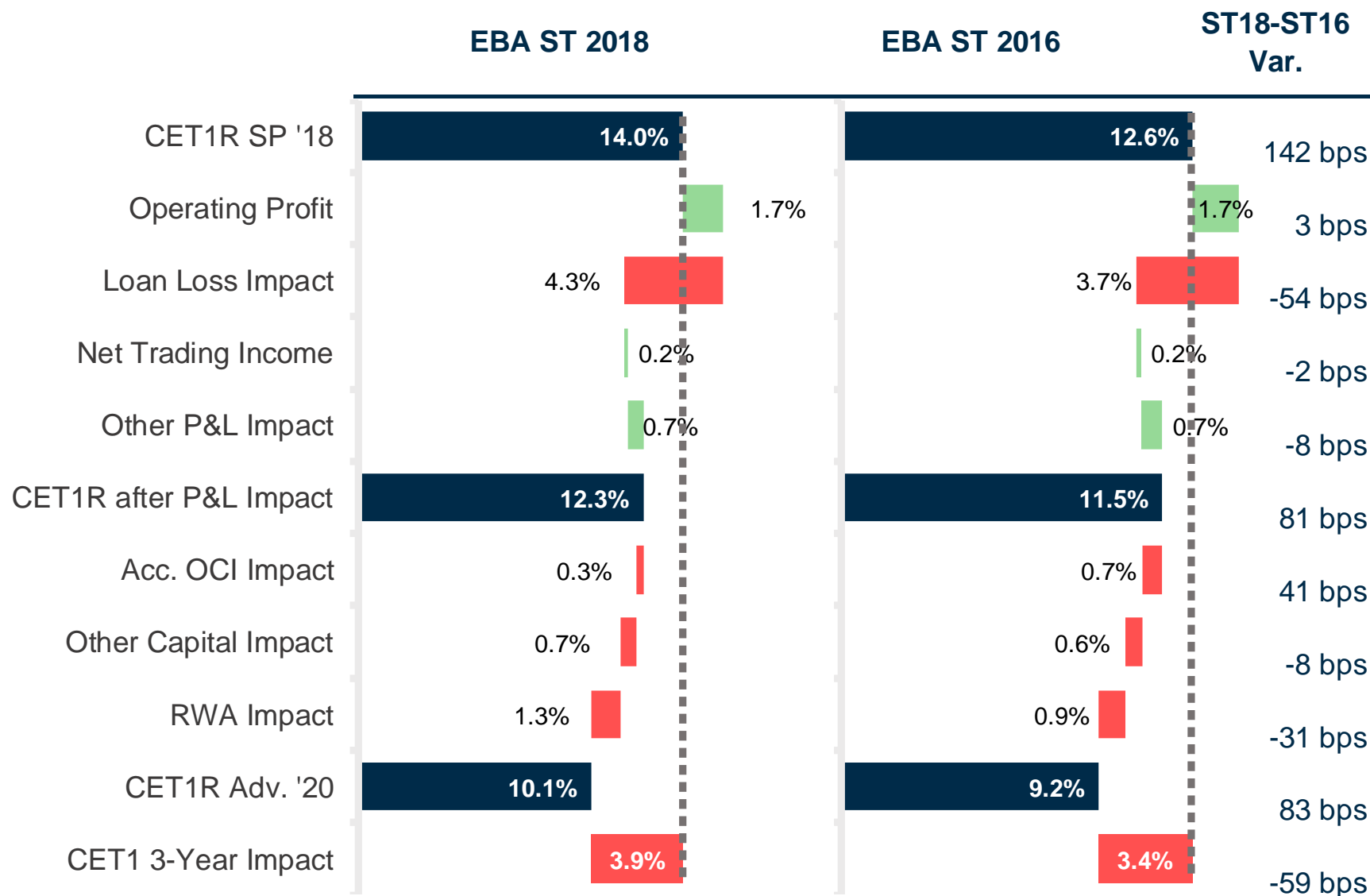
Scorecard

Total Depletion

IFRS9 Restatement

Depletion by Country/Bank

Capital Waterfall



- Positive impact is interpreted as beneficial, while a negative impact is considered detrimental to capital



## Section 2 | Capital Actions



## 2. Capital Actions

Banks demonstrate strong resilience to a stress due to improved capital starting positions. No incremental capital actions required with positive bias towards future increased capital distributions.

---

- No incremental capital needs are required as no bank fell below the 5.5% CET1 minimum threshold
    - No bank failures in 2018 test compared to 1 fail in 2016 (Banca Monte dei Paschi) and 25 fails in 2014
    - Unlike other stress tests, no equity raising during 2017 to pre-empt stress tests (€5bn pre-empted raising during 2016 and €50bn during 2014)
  
  - Capital flexibility measured as the buffer between CET1 after stress test and minimum threshold of 5.5% increases to 482bps from 390bps in 2016 and 296bps in 2014
    - CET1 generation of +120bps fully compensated the increased stress capital depletion of 30bps
  
  - As result we expect positive bias towards increased capital distributions via dividend payments or buybacks
    - We expect market attention to focus on potential for increase in capital distributions away from needs of recapitalization in prior stress test exercises
  
  - SREP decision will incorporate stress test results as an element of Pillar 2 guidance (P2G) and not as a binding requirement. Pillar 2 guidance requirements will remain stable particularly if minimum level of 100bps remains. Calculation of P2G has not been clarified by the ECB and can be done following two options:
    - Option 1 (as ST 2016):  $P2G = [5.5\% + \text{Stress Depletion (maximum through period)}] - [\text{SREP requirement (4.5\% + P2R + Conservation Buffer)}]$
    - Option 2 (as indicated by EBA SREP July 18):  $P2G = \text{Stress Depletion (maximum through period)} - \text{Conservation Buffer (250bps)}$
  
  - Removing stress test results from Pillar 2 requirements is positive for bank's dividend potential and AT1 valuation. However, the approach departs from UK and US where stress tests are binding and as a result have more teeth than in Europe.
- 

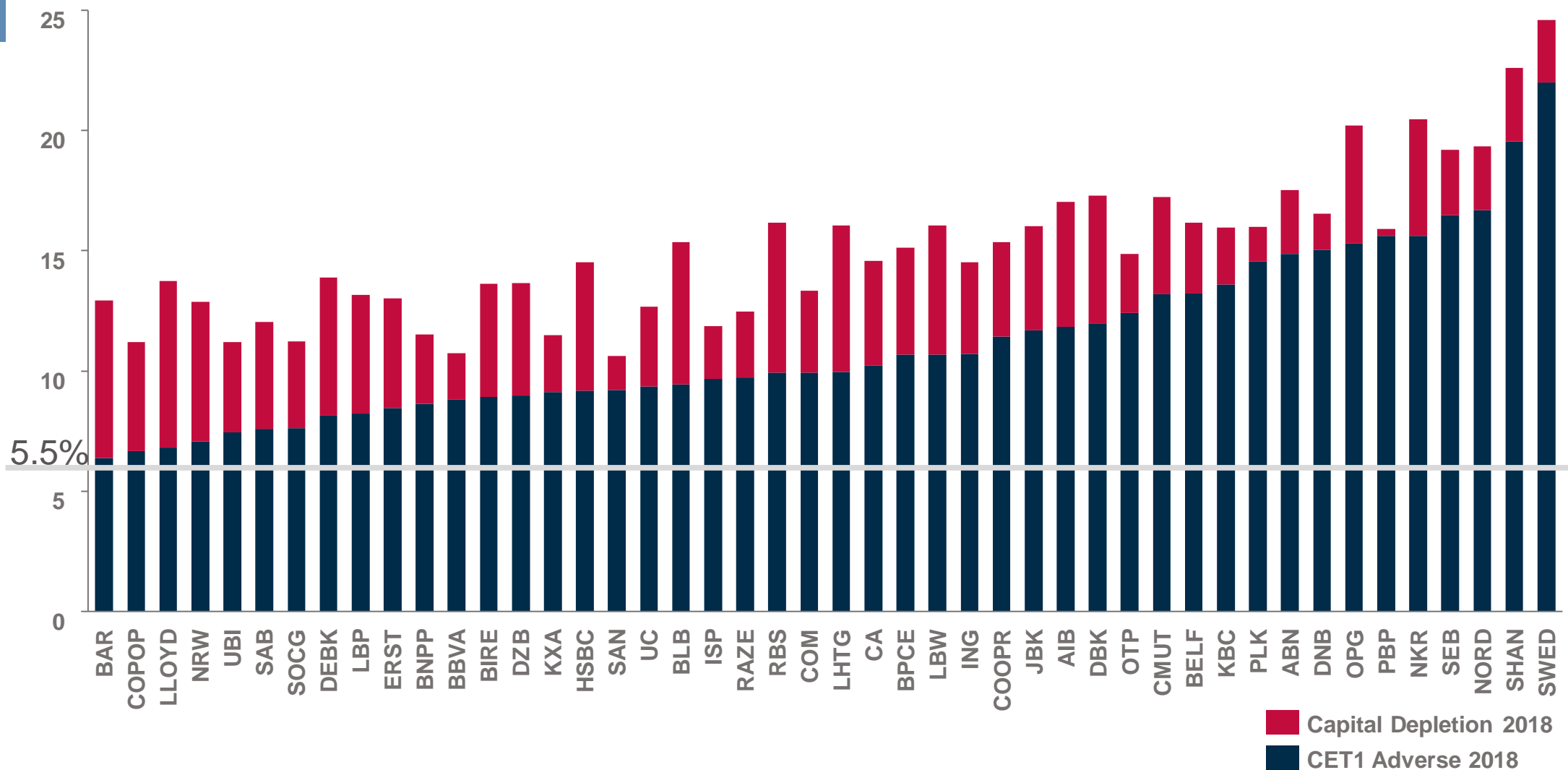
\* EBA July 2018, Final Report on the Guidelines on the revised common procedures and methodologies for the supervisory review and evaluation process (SREP) and supervisory stress testing

## 2. Capital Actions

No bank capital action are expected. We expect markets to focus on capital flexibility left post stress as this is a good indicator of future capital dividend increases.

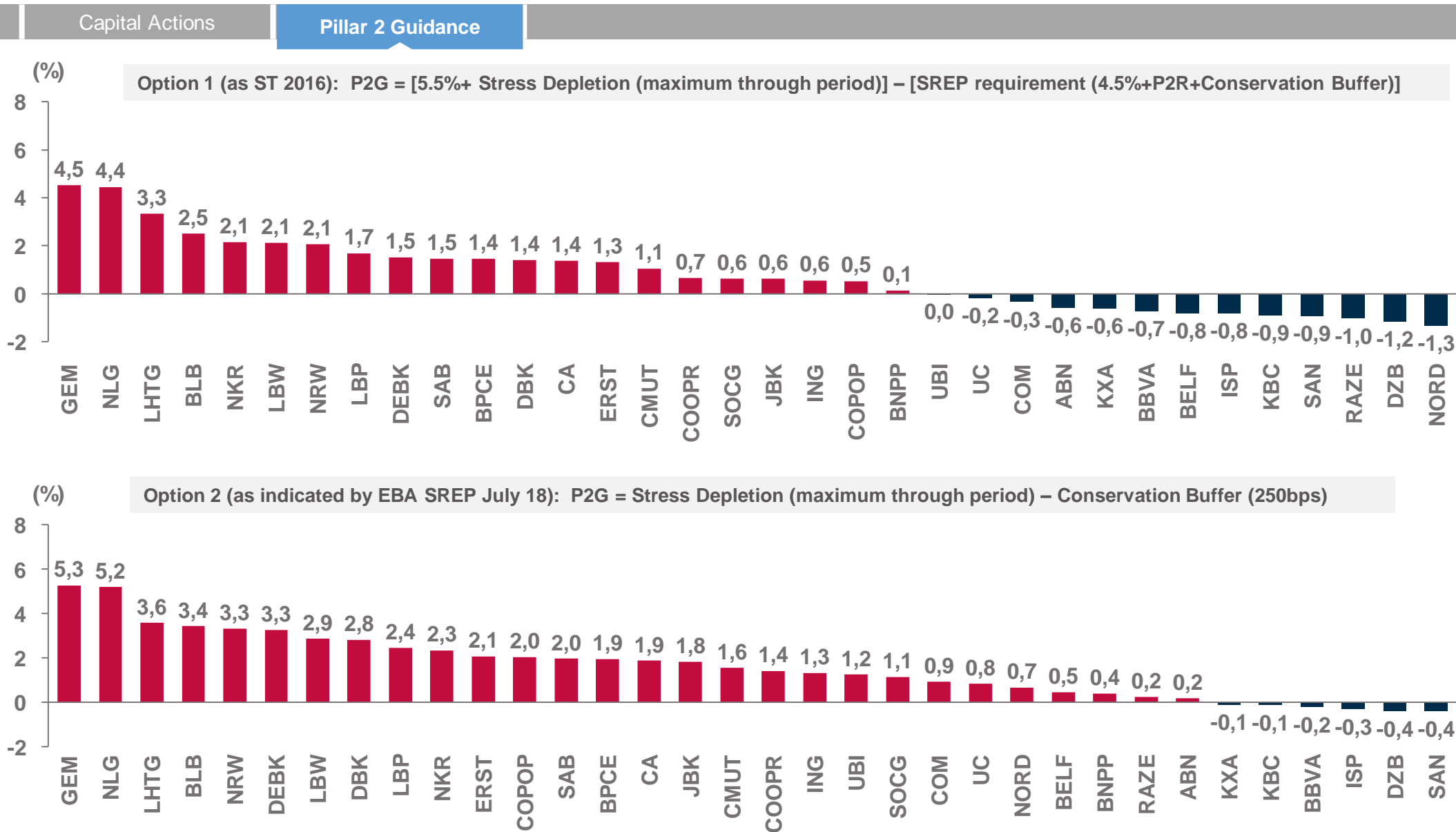
### Capital Actions

### Pillar 2 Guidance



## 2. Capital Actions

We have made a pro-forma calculation of Pillar 2 guidance for ECB SSM banks based on capital depletion observed in stress test.







## Section **3** | Bank Business Models





# 3. Bank Business Models

Most banks are still unable to generate adequate levels of efficiency and profitability.

- 
- Only 3 banks of the 48 analysed show ROE above cost of capital under the 2016-18 baseline scenario and no bank adds value under the adverse scenario
    - European bank valuation is currently at 0.8 times due to lagging profitability vs. cost of capital (assumed @10%). Analysis of ROE under baseline and adverse scenarios shows:
      - Only 3 banks meet ROE levels above cost of capital in baseline scenario
      - No bank meets ROE levels in adverse scenario
      - ROE analysis for 2014 stress test exercise shows similar pattern
- 
- Net interest margin for 48 banks in average decline from 2.1% in 2016 tests to 1.8% in 2018 tests
- 
- Efficiency ratio at 66% still showing big room for improvement
- 
- NPLs while reduced remain high in countries like Italy and Ireland
  - NPL ratio continues to be high in countries like Italy (10%) and Ireland (10%)
  - All 48 European banks tested show average NPL of 3.3% with coverage of 44% vs 4.8% and 44%, respectively in 2016
  - NPL shows strong correlation with CET1 capital depletion
- 
- European banks continue to trade below book value (0.8 times price to book) evidencing that markets discount survival of only the fittest
-

### 3. Bank Business Models

Although market valuation has increased in the last 2 years, most banks are still unable to generate adequate levels of efficiency and profitability.

#### Scorecard

Profitability

Volume and Margin

Efficiency

NPLs

|                         | Metric              | ST 2018 | ST 2016 |   | Var. 18' vs. 16' |
|-------------------------|---------------------|---------|---------|---|------------------|
| <b>Market Valuation</b> | Stock Price         | 13.20   | 11.94   | ↑ | 10.6%            |
|                         | Price to Book       | 0.80    | 0.68    | ↑ | 18.4%            |
| <b>Profitability</b>    | ROE Actual          | 6.8%    | 5.4%    | ↑ | 145 bps          |
|                         | ROE 3Y avg. Bas.    | 3.8%    | 4.8%    | ↓ | -99 bps          |
| <b>Revenues</b>         | Volume Loans growth | n.a.    | n.a.    | ↑ | 7.2%             |
|                         | Margin Actual       | 1.8%    | 2.1%    | ↓ | -12.8%           |
|                         | Margin 3Y avg. Bas. | 1.8%    | 2.0%    | ↓ | -10.1%           |
| <b>Efficiency</b>       | C/I Actual          | 63.3%   | 68.7%   | ↓ | -535 bps         |
|                         | C/I 3Y avg. Bas.    | 65.6%   | 67.0%   | ↘ | -140 bps         |
| <b>NPL</b>              | NPL ratio %         | 4.1%    | 5.3%    | ↓ | -115 bps         |
|                         | NPL Coverage %      | 44.7%   | 50.6%   | ↓ | -588 bps         |

- Stock price and P/B was calculated as a weighted average by market capitalization of banks publicly traded. Dates corresponding to stress test results publication.

# 3. Bank Business Models

Only 3 banks of the 48 analysed show ROE above cost of capital under the 2016-18 baseline scenario and no bank adds value under the adverse scenario

Scorecard

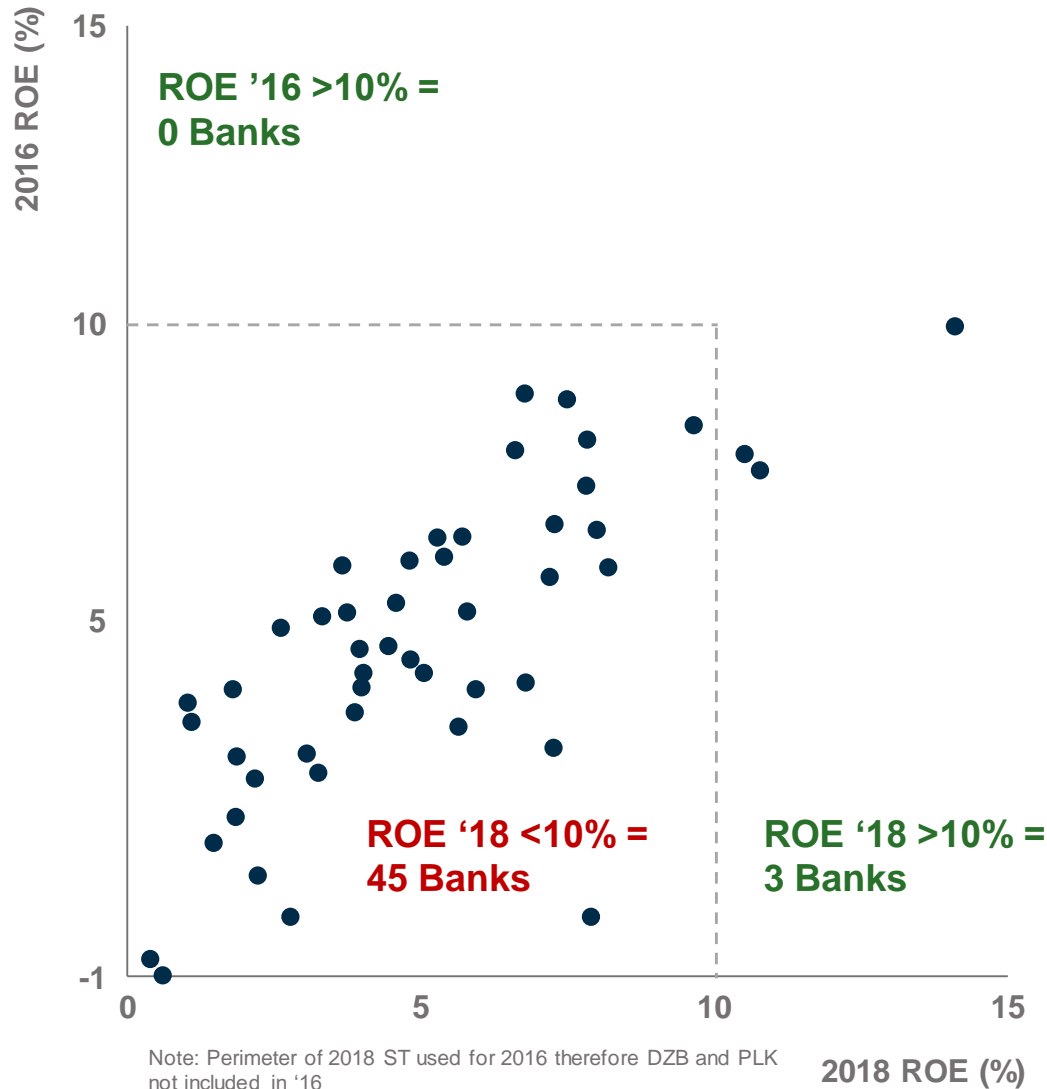
**Profitability**

Volume and Margin

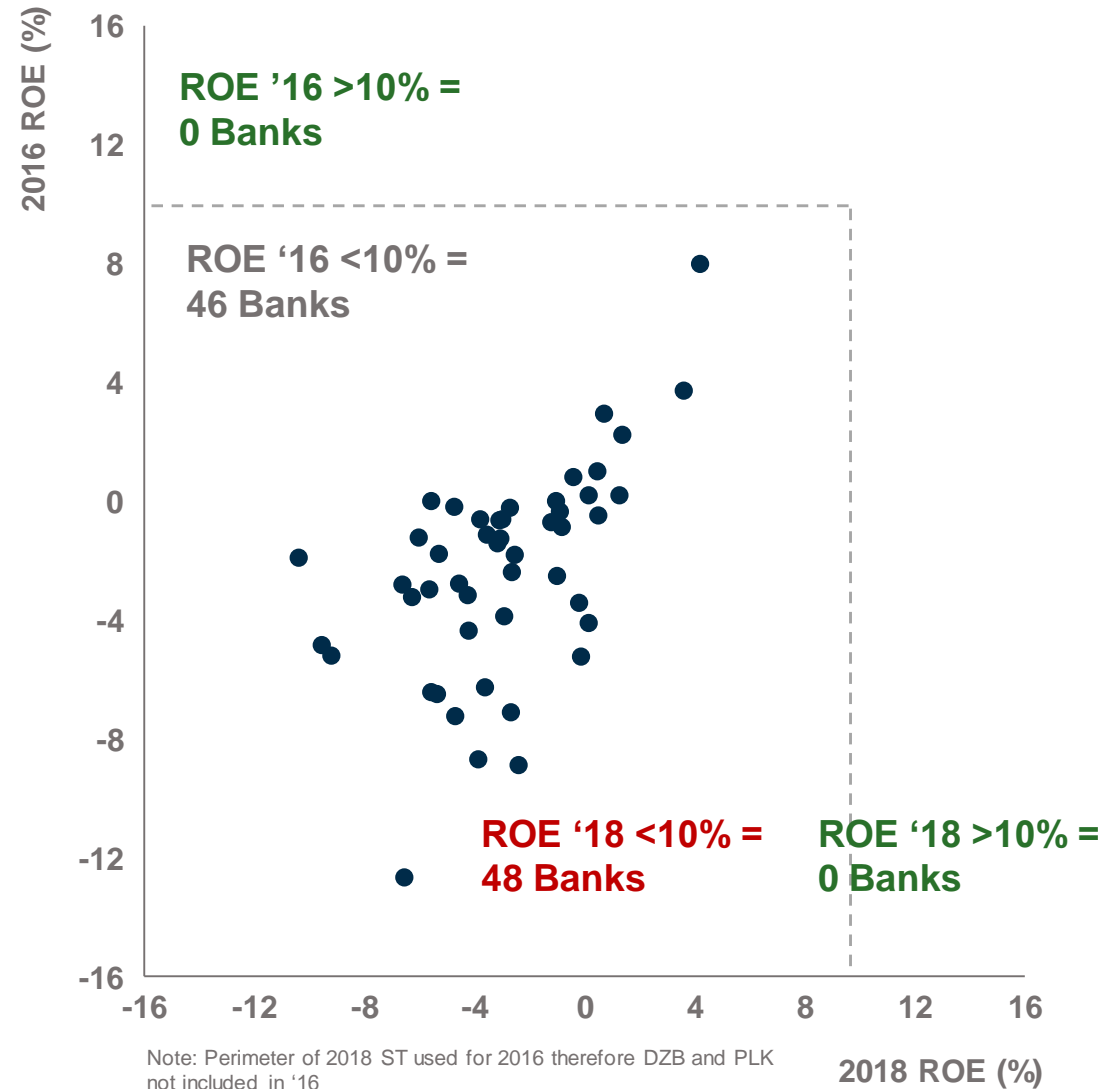
Efficiency

NPLs

### ROE 3-Y Average Baseline '18 vs '16



### ROE 3-Y Average Adverse '18 vs '16



### 3. Bank Business Models

While credit volume has improved, net interest margin is projected to be 20bps lower than in ST16 due to declining rates. Few banks compensate volume growth with declining rates.

Scorecard

Profitability

Volume and Margin

Efficiency

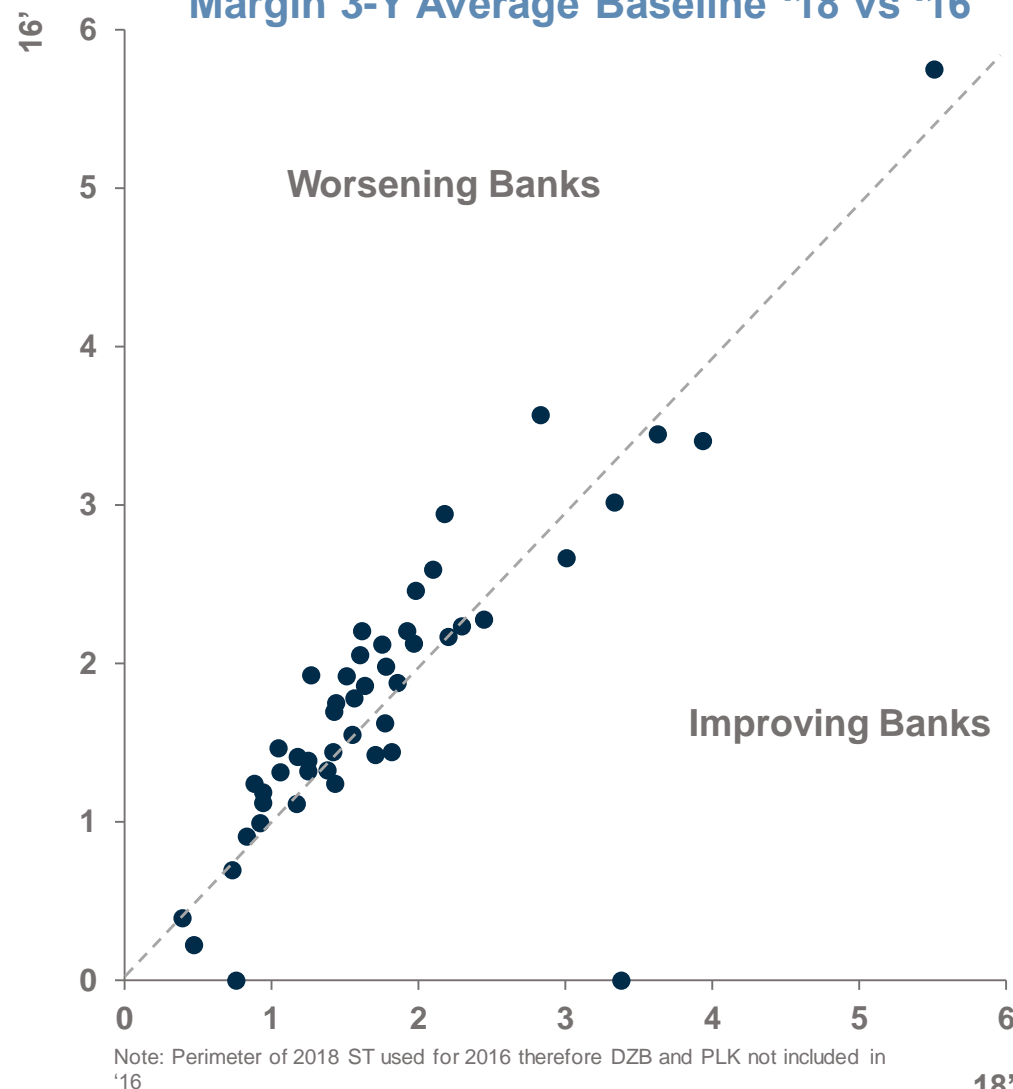
NPLs

#### Volume and Margin Summary by country

| Code      | Country         | Loans and Advances SP (€Mn) | L&A growth vs. ST 16' | NII Margin 3Y avg. 18' | NII Margin avg. 3Y Change vs '16 (bps) |
|-----------|-----------------|-----------------------------|-----------------------|------------------------|--|
| AT        | Austria         | 275,136                     | 16.9%                 | +2.4 %                 | -58 bps                                |
| BE        | Belgium         | 306,618                     | 18.8%                 | +1.7 %                 | -19 bps                                |
| DE        | Germany         | 1,812,430                   | 14.4%                 | +1.3 %                 | -24 bps                                |
| DK        | Denmark         | 540,854                     | 13.7%                 | +1.1 %                 | -29 bps                                |
| ES        | Spain           | 1,944,481                   | 5.1%                  | +3.1 %                 | +22 bps                                |
| FI        | Finland         | 96,217                      | 13.9%                 | +0.9 %                 | -18 bps                                |
| FR        | France          | 4,180,283                   | 20.6%                 | +1.5 %                 | -27 bps                                |
| HU        | Hungary         | 29,292                      | 10.4%                 | +5.5 %                 | -24 bps                                |
| IE        | Ireland         | 159,189                     | -8.5%                 | +2.7 %                 | +26 bps                                |
| IT        | Italy           | 1,351,910                   | 12.0%                 | +1.6 %                 | -37 bps                                |
| NL        | Netherlands     | 1,585,786                   | 2.5%                  | +1.6 %                 | +1 bps                                 |
| NO        | Norway          | 161,622                     | 1.7%                  | +2.2 %                 | +3 bps                                 |
| PL        | Poland          | 54,482                      | 11.6%                 | +3.9 %                 | +53 bps                                |
| SE        | Sweden          | 925,884                     | 0.4%                  | +1.3 %                 | +3 bps                                 |
| UK        | United Kingdom  | 3,090,837                   | -8.2%                 | +1.9 %                 | -37 bps                                |
| <b>EU</b> | <b>Total EU</b> | <b>16,515,022</b>           | <b>7.2%</b>           | <b>+1.8 %</b>          | <b>-20 bps</b>                         |

- NII margin calculated as NII normalized by total Loans and Advances. 3Y average calculated as the simple mean of yearly NII margin.

#### Margin 3-Y Average Baseline '18 vs '16



### 3. Bank Business Models

Efficiency ratio is projected at 66% under baseline scenario still showing big room for improvement. Few banks reach levels below 45%.

Scorecard

Profitability

Volume and Margin

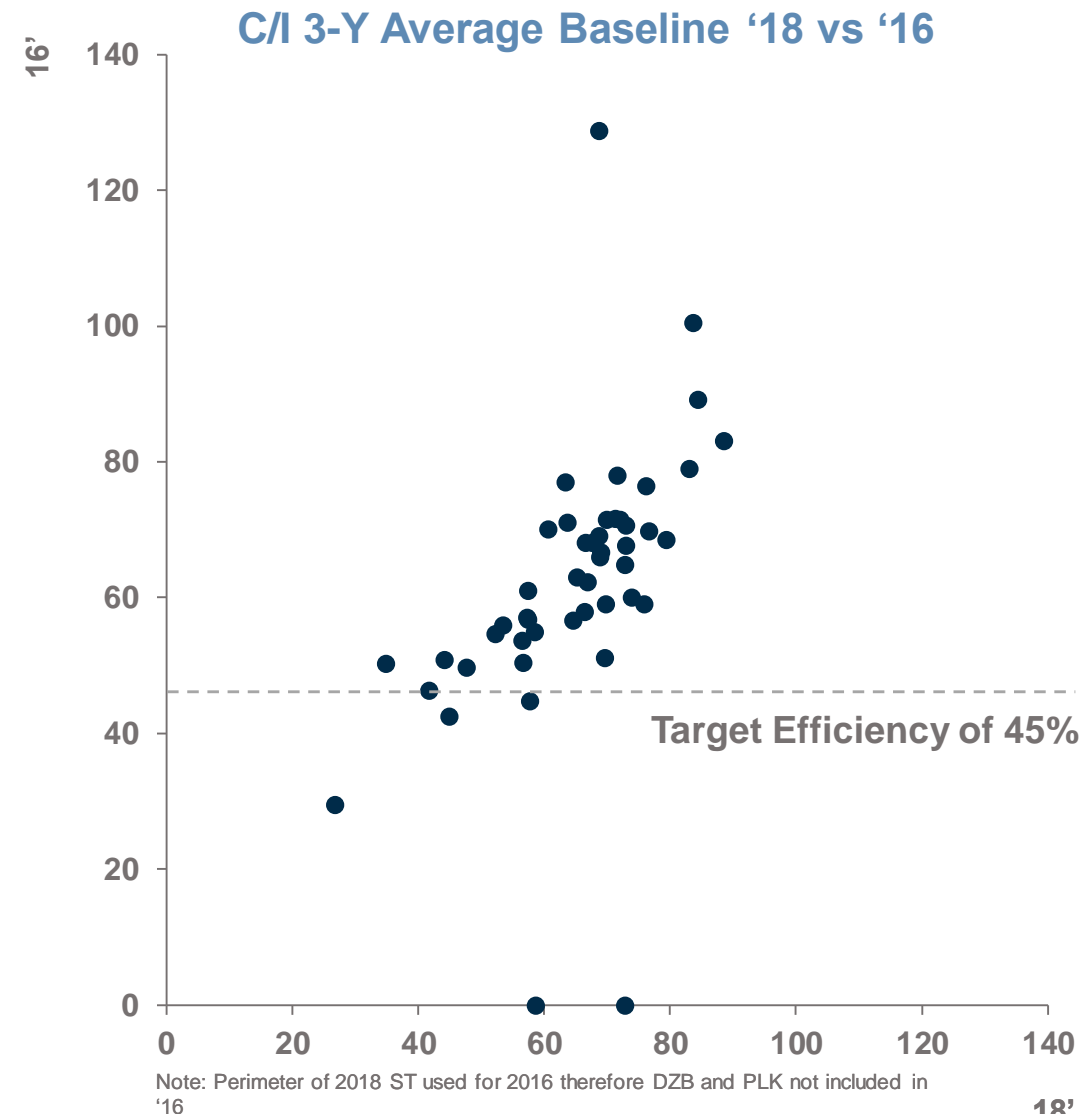
Efficiency

NPLs

#### Cost to Income Summary by country

| Code      | Country         | C/I ratio SP | C/I ratio SP Change vs '16 (bps) | C/I ratio avg. 3Y Baseline | C/I ratio avg. 3Y Change vs '16 (bps) |
|-----------|-----------------|--------------|----------------------------------|----------------------------|---------------------------------------|
| AT        | Austria         | 65.0%        | +155 bps                         | 73.1%                      | +511 bps                              |
| BE        | Belgium         | 51.5%        | -644 bps                         | 57.6%                      | -212 bps                              |
| DE        | Germany         | 86.4%        | -775 bps                         | 85.5%                      | +505 bps                              |
| DK        | Denmark         | 47.0%        | -1,381 bps                       | 55.1%                      | +436 bps                              |
| ES        | Spain           | 55.2%        | -60 bps                          | 54.2%                      | -42 bps                               |
| FI        | Finland         | 51.6%        | +77 bps                          | 66.4%                      | +838 bps                              |
| FR        | France          | 67.8%        | +174 bps                         | 72.5%                      | -119 bps                              |
| HU        | Hungary         | 60.2%        | +1,141 bps                       | 69.0%                      | +224 bps                              |
| IE        | Ireland         | 65.4%        | +897 bps                         | 68.1%                      | +492 bps                              |
| IT        | Italy           | 52.6%        | -1,179 bps                       | 65.1%                      | +85 bps                               |
| NL        | Netherlands     | 59.1%        | -84 bps                          | 65.8%                      | -110 bps                              |
| NO        | Norway          | 41.9%        | +908 bps                         | 44.9%                      | +229 bps                              |
| PL        | Poland          | 53.2%        | -222 bps                         | 65.2%                      | +221 bps                              |
| SE        | Sweden          | 46.8%        | -160 bps                         | 45.8%                      | -506 bps                              |
| UK        | United Kingdom  | 68.6%        | -1,283 bps                       | 63.0%                      | -539 bps                              |
| <b>EU</b> | <b>Total EU</b> | <b>63.3%</b> | <b>-535 bps</b>                  | <b>65.6%</b>               | <b>-140 bps</b>                       |

- Cost to Income calculated as administrative expenses over operating income. 3Y average calculated as the simple mean of yearly C/I.



### 3. Bank Business Models

NPL ratio of 3.3% with coverage of 44% shows important improvement from ST16. Depletion is not necessarily driven by NPL ratio as it occurred in prior tests.

Scorecard

Profitability

Volume and Margin

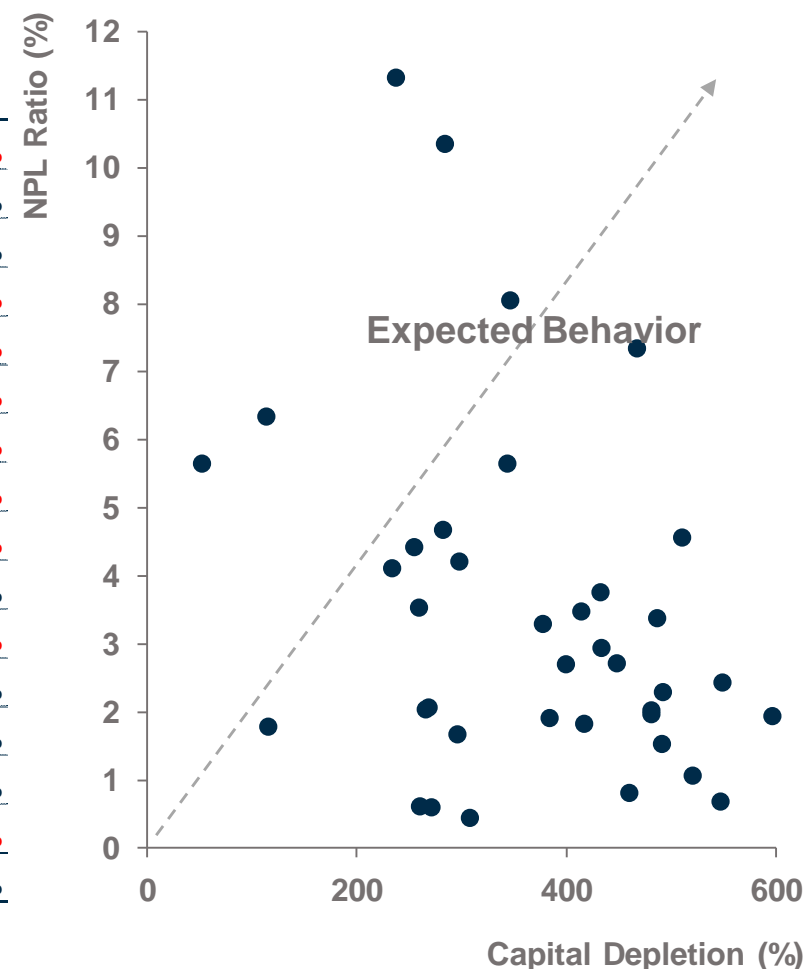
Efficiency

NPLs

#### NPL and Coverage Summary by Country

| Code            | Country        | NPLs    | NPLs Change vs '16 (%) | NPL Ratio | NPL Ratio Change vs '16 (PPS) | Coverage Ratio | Coverage Change vs '16 (PPS) |
|-----------------|----------------|---------|------------------------|-----------|-------------------------------|----------------|------------------------------|
| AT              | Austria        | 10,696  | -43%                   | 3.9%      | -4%                           | 56.5%          | -3%                          |
| BE              | Belgium        | 10,650  | -24%                   | 3.5%      | -2%                           | 46.8%          | +0 %                         |
| DE              | Germany        | 30,897  | -27%                   | 1.7%      | -1%                           | 38.9%          | +1 %                         |
| DK              | Denmark        | 12,363  | -25%                   | 2.3%      | -1%                           | 27.8%          | -3%                          |
| ES              | Spain          | 78,829  | -14%                   | 4.1%      | -1%                           | 42.4%          | -4%                          |
| FI              | Finland        | 1,487   | +21 %                  | 1.5%      | +0 %                          | 29.9%          | -7%                          |
| FR              | France         | 130,889 | -6%                    | 3.1%      | -1%                           | 51.7%          | -1%                          |
| HU              | Hungary        | 3,322   | -29%                   | 11.3%     | -6%                           | 62.8%          | -0%                          |
| IE              | Ireland        | 16,714  | -46%                   | 10.5%     | -7%                           | 28.2%          | -11%                         |
| IT              | Italy          | 140,267 | -21%                   | 10.4%     | -4%                           | 51.0%          | +5 %                         |
| NL              | Netherlands    | 37,272  | -14%                   | 2.4%      | -0%                           | 29.6%          | -8%                          |
| NO              | Norway         | 2,899   | +19 %                  | 1.8%      | +0 %                          | 34.8%          | +74 %                        |
| PL              | Poland         | 3,085   | -11%                   | 5.7%      | -1%                           | 55.3%          | +3 %                         |
| SE              | Sweden         | 10,445  | -1%                    | 1.1%      | -0%                           | 28.6%          | +14 %                        |
| UK              | United Kingdom | 48,544  | -41%                   | 1.6%      | -1%                           | 28.6%          | -1%                          |
| <b>Total EU</b> |                | 538,357 | -21%                   | 3.3%      | -1%                           | 44.0%          | +0 %                         |

#### NPL Ratio vs Capital Depletion










## Section 4 | Stress Test Process

## 4. Stress Test Process

Not only fitting of bank business models need to improve but also the stress test supervisory process.

- The process took a year long creating doubts about the relevance of the scenario and bank risk profile. ECB process, timing and tools can be improved
  - Timing of results publication generates obsolescence of scenarios (e.g. spreads on Italian sovereign bonds)
  - Several quality assurance processes took place after the first Full Data Collection on May 28<sup>th</sup> , and differed significantly by bank
  - Templates and methodology were updated throughout the whole process, especially in the areas of credit risk, market risk, NII and capital
- Stress tests included for the first time the credit provisioning under IFRS9. As expected, IFRS9 creates an acceleration of credit losses in year 1
  - Credit losses from year 1 represent 51% of the total losses (vs. 36% in ST16) due to anticipation of scenario worsening
  - Credit losses acceleration, together with other methodological requirements, triggers maximum capital depletion on year 1 in some banks
- Unlike the UK or the UK, European stress tests continue to lack the teeth as they do not represent a binding constraint for banks
  - Stress test result differences exist in terms of capital depletion (measured as stress test impact in CET1) and capital flexibility (measured as CET1 Adverse – Hurdle Rate)

| Latest ST Results   |  |  |  |
|---------------------|--|---|---|
| Capital Depletion   | +410bps  | +510bps   | +600bps   |
| Capital Flexibility | +482bps  | +160bps   | +180bps   |

US is the most binding stress test

## 4. Stress Test Process

Credit losses from year 1 represent 51% of the total losses (vs. 36% in ST16). This is specially relevant for Ireland and the UK, reaching over 60% of the total credit impairments on Y1

IFRS9

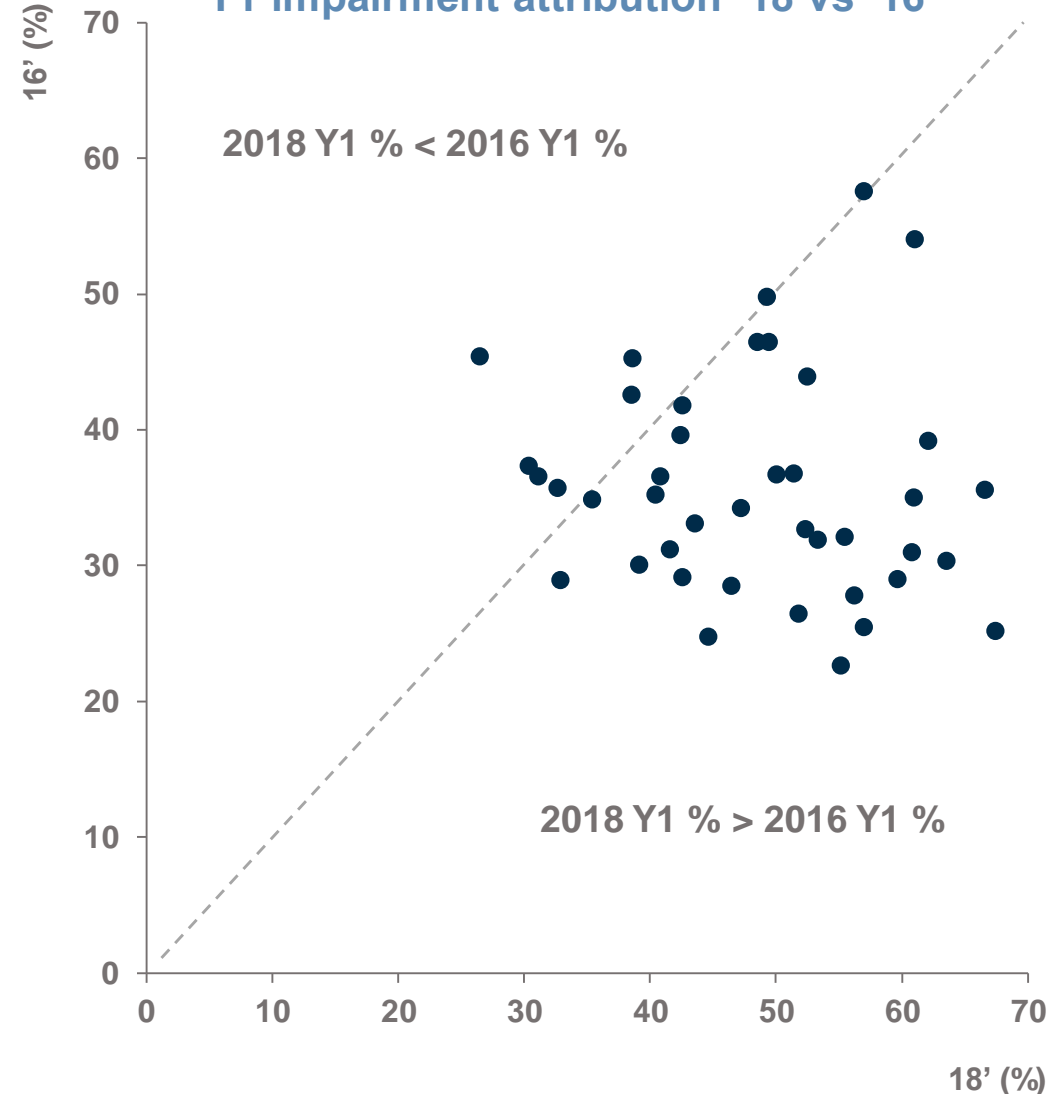
Comparison with US/UK

### Y1 attribution to total impairments

| Code      | Country         | Y1 Attribution of impairments '18 | Y1 Attribution of impairments '16 |
|-----------|-----------------|-----------------------------------|-----------------------------------|
| AT        | Austria         | 45.4%                             | 32.7%                             |
| BE        | Belgium         | 38.0%                             | 33.9%                             |
| DE        | Germany         | 57.6%                             | 38.9%                             |
| DK        | Denmark         | 47.1%                             | 48.5%                             |
| ES        | Spain           | 45.8%                             | 34.7%                             |
| FI        | Finland         | 56.9%                             | 25.5%                             |
| FR        | France          | 42.2%                             | 31.6%                             |
| HU        | Hungary         | 42.5%                             | 41.8%                             |
| IE        | Ireland         | 69.9%                             | 32.3%                             |
| IT        | Italy           | 47.0%                             | 42.4%                             |
| NL        | Netherlands     | 52.7%                             | 28.7%                             |
| NO        | Norway          | 63.5%                             | 30.4%                             |
| PL        | Poland          | 43.6%                             | 45.3%                             |
| SE        | Sweden          | 47.6%                             | 32.4%                             |
| UK        | United Kingdom  | 62.6%                             | 35.6%                             |
| <b>EU</b> | <b>Total EU</b> | <b>50.5%</b>                      | <b>35.6%</b>                      |

- Y1 attribution excluding stage 1 coverage restriction.

### Y1 impairment attribution '18 vs '16



# 4. Stress Test Process

Capital depletion is increasing more in the US (600bps) and UK (510bps) compared to EU (410bps).  
 Capital flexibility only increased in the ECB exercise (482 vs. 390bps of 2016)

IFRS9

Comparison with US/UK

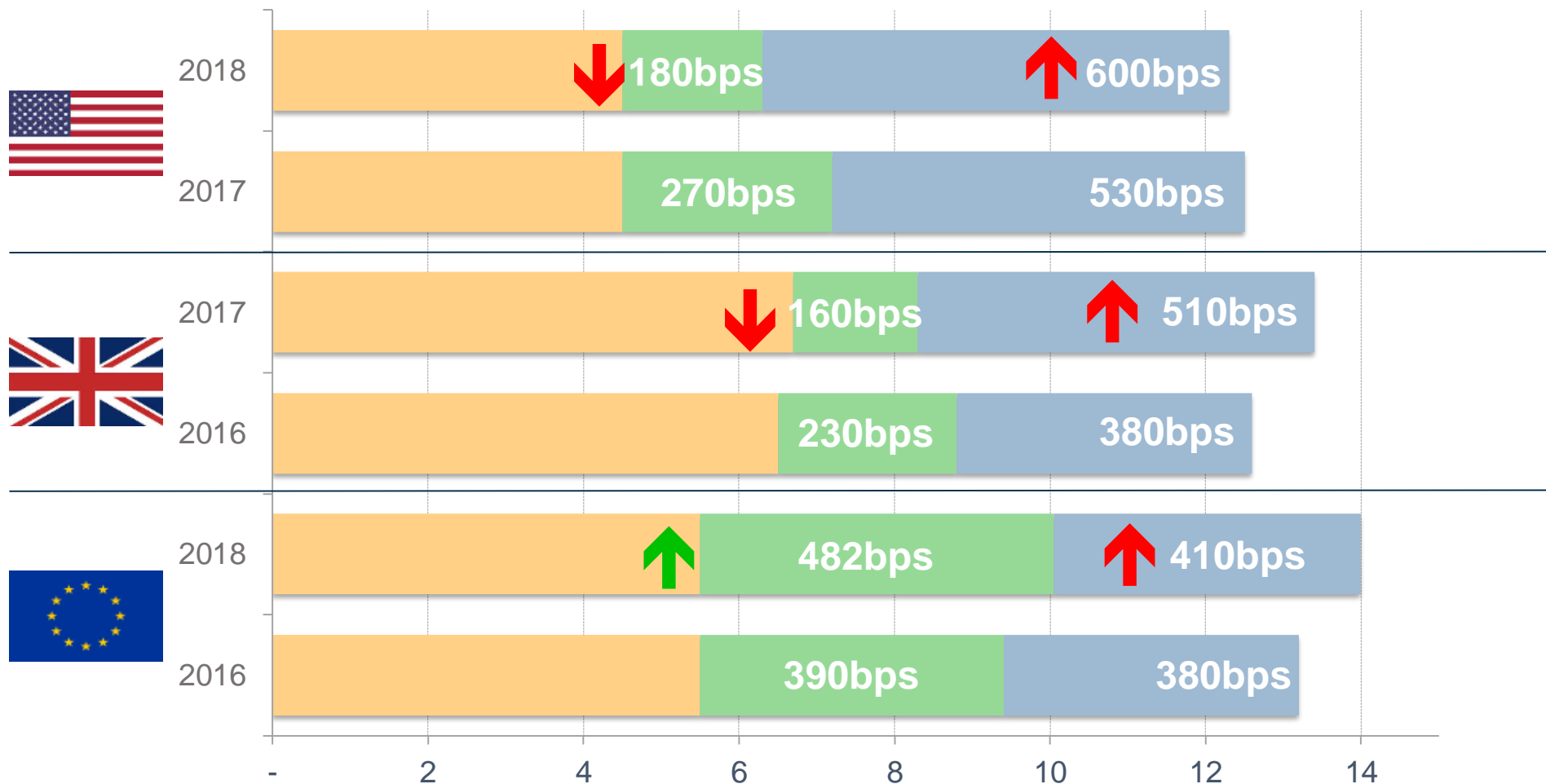
% T1C (US)

% CET1 (Europe)

Minimum

Capital Flexibility

Capital Depletion






# 4. Stress Test Process

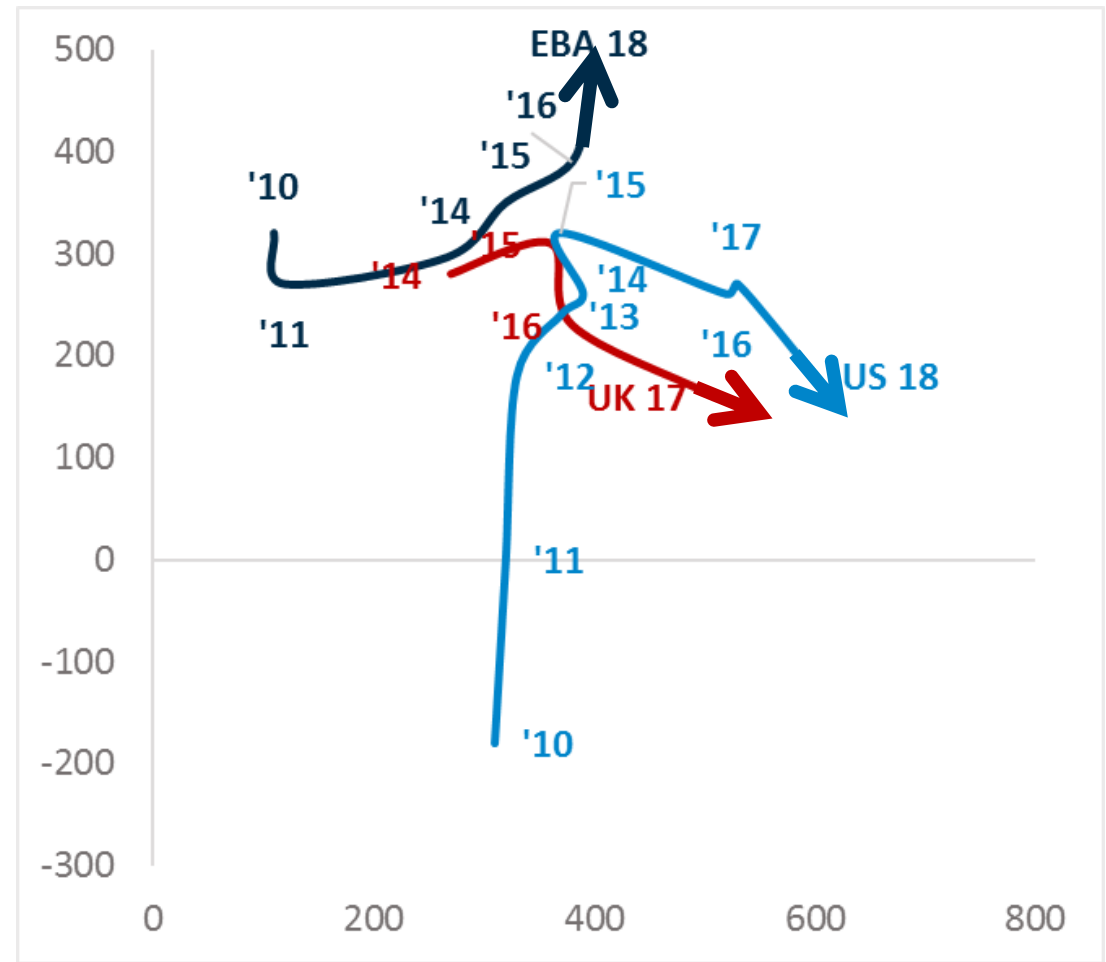
Material methodological differences can be seen in the stress test regimes. While all exercises have increased CET1 depletion over time, ECB is the only exercise currently increasing flexibility.

IFRS9

Comparison with US/UK

|                        |  |  |  |
|------------------------|---|---|---|
|                        | US CCAR   | UK Stress Test  | ECB Stress Test   |
| Scope                  | 30 Banks  | 7 Banks   | 48 Banks  |
| Frequency              | Annual  | Annual  | Biennially  |
| Capital Target         | 4.5% hurdle rate  | 4.5% hurdle rate + PRA buffer   | 5.5% soft hurdle + Pillar 2 guidance  |
| Models                 | Bank + regulatory models  | Bank + regulatory models  | Bank models+ supervisory benchmarks + ECB quality control                         |
| Key Assumption         | Dynamic balance sheet   | Dynamic balance with and w/o mgmt. actions  | Static balance sheet  |
| Modeling Scope         | Credit, Market & Operational and PPNR   | Credit, Market & Operational and PPNR   | Credit, Market & Operational and PPNR   |
| Qualitative Adjustment | Very Extensive  | Extensive   | Limited   |

**Capital Flexibility (bps)**  
(CET1 Adverse – Hurdle Rate)



Source: A&M Analysis, EBA, Federal Reserve and Bank of England

**CET1 Depletion (bps)**

**ALVAREZ & MARSAL**



Section **5** | Country Stress Test Scorecards

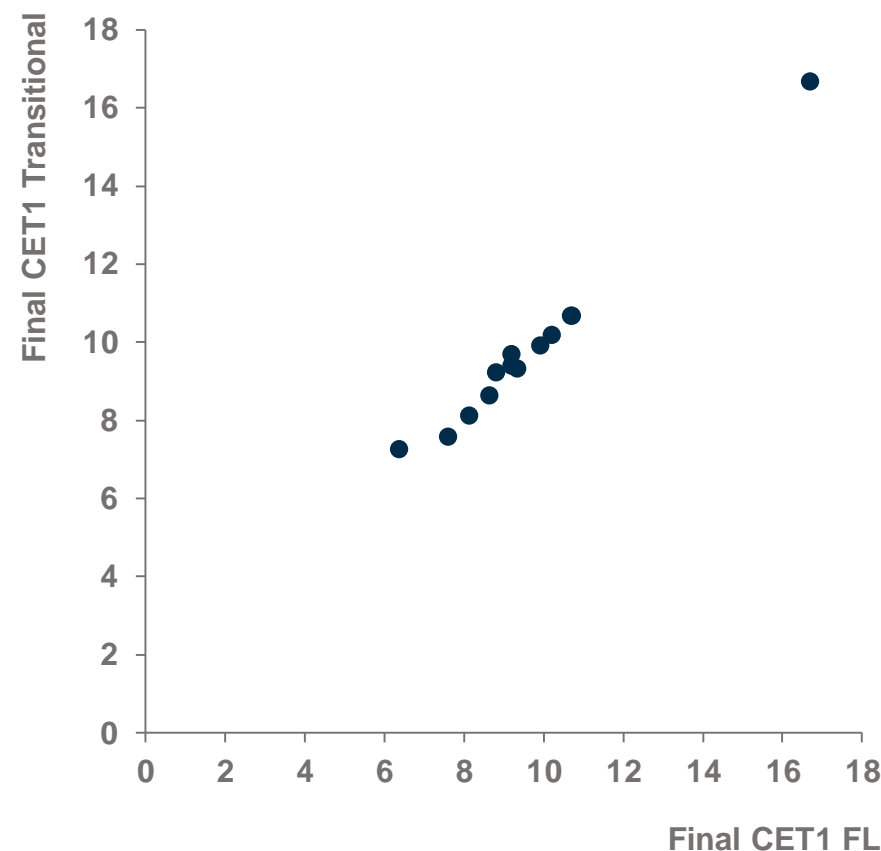
# Capital Depletion and CET1 Comparison – G-SIBs

Average CET1 transitional depletion of 410bps (390bps on fully loaded basis) with Barclays as the worst (657bps FL) and Santander as the best G-SIB bank (141bps). RBS, Santander and BBVA are the only G-SIBs showing lower depletion results vs. ST16 on a FL basis.

## CET1 Capital Depletion Adverse vs '16

| Code          | Bank Name                            | EBA 2018<br>Stressed CET1 Depletion 2017-2020 |               |                 |               | Depletion<br>Chg. '18 vs<br>'16 (FL) |
|---------------|--------------------------------------|---|---------------|-----------------|---------------|--------------------------------------|
|               |                                      | Transit.                                      | Impact<br>Bps | Fully<br>Loaded | Impact<br>Bps |                                      |
| DEBK          | Deutsche Bank AG                     |   | -651          |                 | -576          | 244                                  |
| BBVA          | Banco Bilbao Vizcaya Argentaria S.A. |   | -234          |                 | -193          | -15                                  |
| SAN           | Banco Santander S.A.                 |   | -259          |                 | -141          | -58                                  |
| BNPP          | BNP Paribas                          |   | -297          |                 | -288          | 52                                   |
| BPCE          | Groupe BPCE                          |   | -448          |                 | -445          | 113                                  |
| CA            | Groupe Crédit Agricole               |   | -433          |                 | -437          | 117                                  |
| SOCG          | Société Générale S.A.                |   | -378          |                 | -363          | 22                                   |
| UC            | UniCredit S.p.A.                     |   | -346          |                 | -334          | 5                                    |
| ING           | ING Groep N.V.                       |   | -383          |                 | -381          | 10                                   |
| NORD          | Nordea Bank - group                  |   | -265          |                 | -265          | 30                                   |
| BAR           | Barclays Plc                         |   | -604          |                 | -657          | 252                                  |
| HSBC          | HSBC Holdings Plc                    |   | -520          |                 | -533          | 221                                  |
| RBS           | The Royal Bank of Scotland Group Plc |   | -623          |                 | -625          | -120                                 |
| <b>G-SIBs</b> | <b>G-SIBs</b>                        |   | <b>-410</b>   |                 | <b>-390</b>   | <b>66</b>                            |

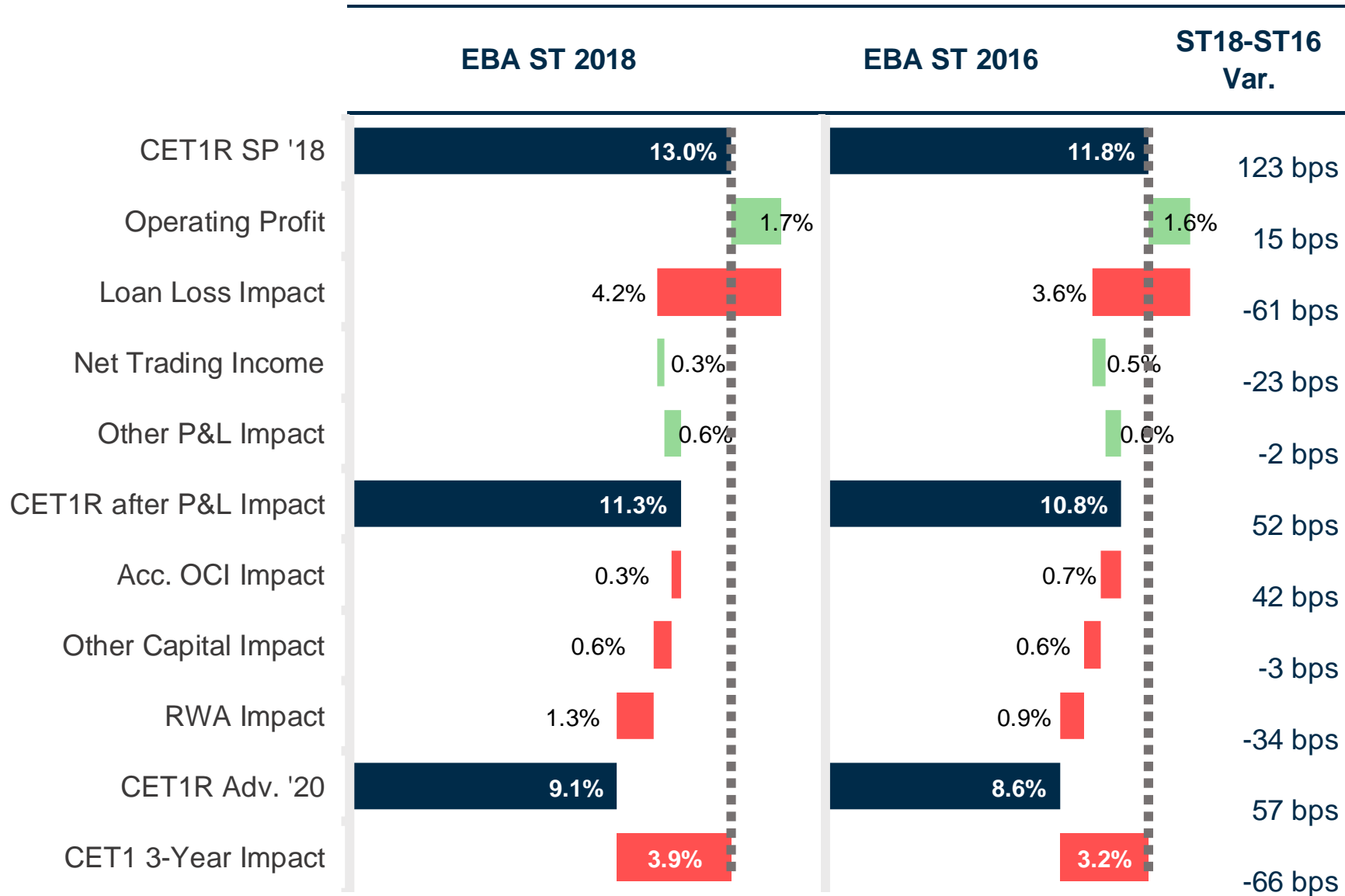
## Transitional vs Fully Loaded





# Stress Test Impact – Waterfall by Key Component – G-SIBs

CET1 adverse depletion of 390bps (FL) driven by loan losses (-420bps), NII (+170bps) and RWA impacts (-130bps). Credit loss and RWA increased impact is partially offset by lower OCI impacts.



• Positive impact is interpreted as beneficial, while a negative impact is considered detrimental to capital

# Capital Depletion and CET1 Comparison – Germany

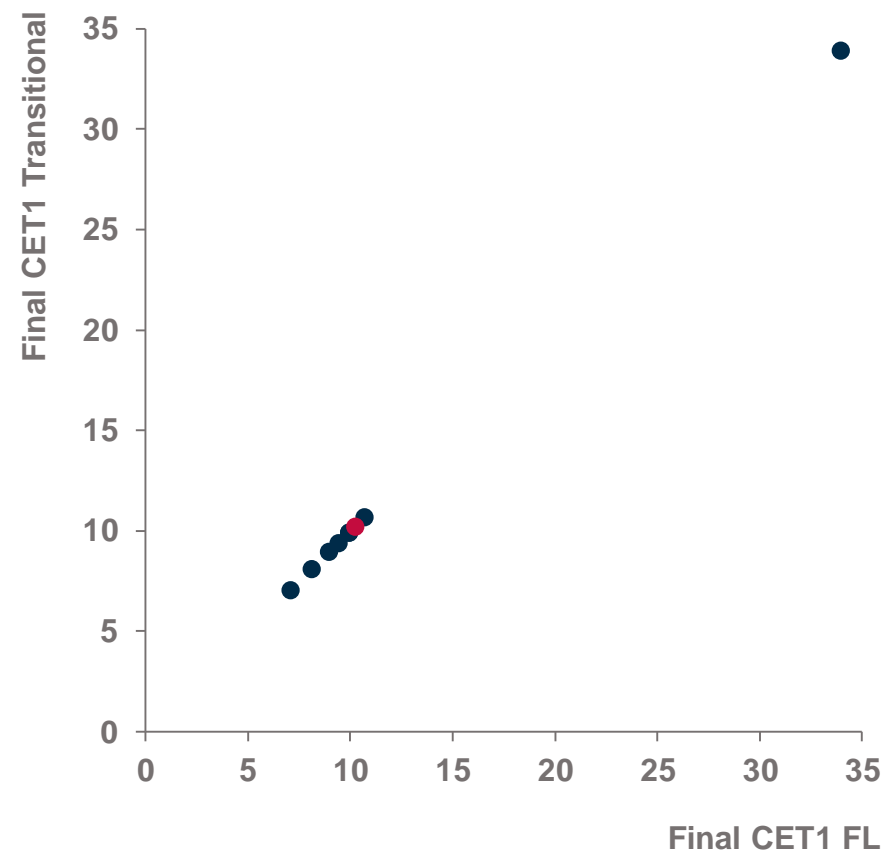


Average CET1 adverse depletion of 567bps (PH) and 519bps (FL), 133bps higher compared to ST16. NRW showed the highest impact (778bps) and Commerzbank the lowest (417bps).

## CET1 Capital Depletion Adverse vs '16

| Code      | Bank Name                                       | EBA 2018 Stressed CET1 Depletion 2017-2020 |             |              |             | Depletion Chg. '18 vs '16 (FL) |
|-----------|---|--|-------------|--------------|-------------|--------------------------------|
|           |   | Transit.                                   | Impact Bps  | Fully Loaded | Impact Bps  |                                |
| BLB       | Bayerische Landesbank                           |  | -596        |              | -592        | 227                            |
| COM       | Commerzbank AG                                  |  | -417        |              | -341        | -130                           |
| DEBK      | Deutsche Bank AG                                |  | -651        |              | -576        | 244                            |
| DZB       | DZ BANK AG Deutsche Zentral-Genossenschaftsbank |  | -481        |              | -467        | 467                            |
| LBW       | Landesbank Baden-Württemberg                    |  | -547        |              | -536        | -122                           |
| LHTG      | Landesbank Hessen-Thüringen Girozentrale AG     |  | -614        |              | -608        | 307                            |
| NLG       | NRW.BANK  |  | -778        |              | -769        | 55                             |
| NRW       | Norddeutsche Landesbank - Girozentrale -        |  | -608        |              | -582        | 235                            |
| <b>DE</b> | <b>Germany</b>                                  |  | <b>-567</b> |              | <b>-519</b> | <b>133</b>                     |

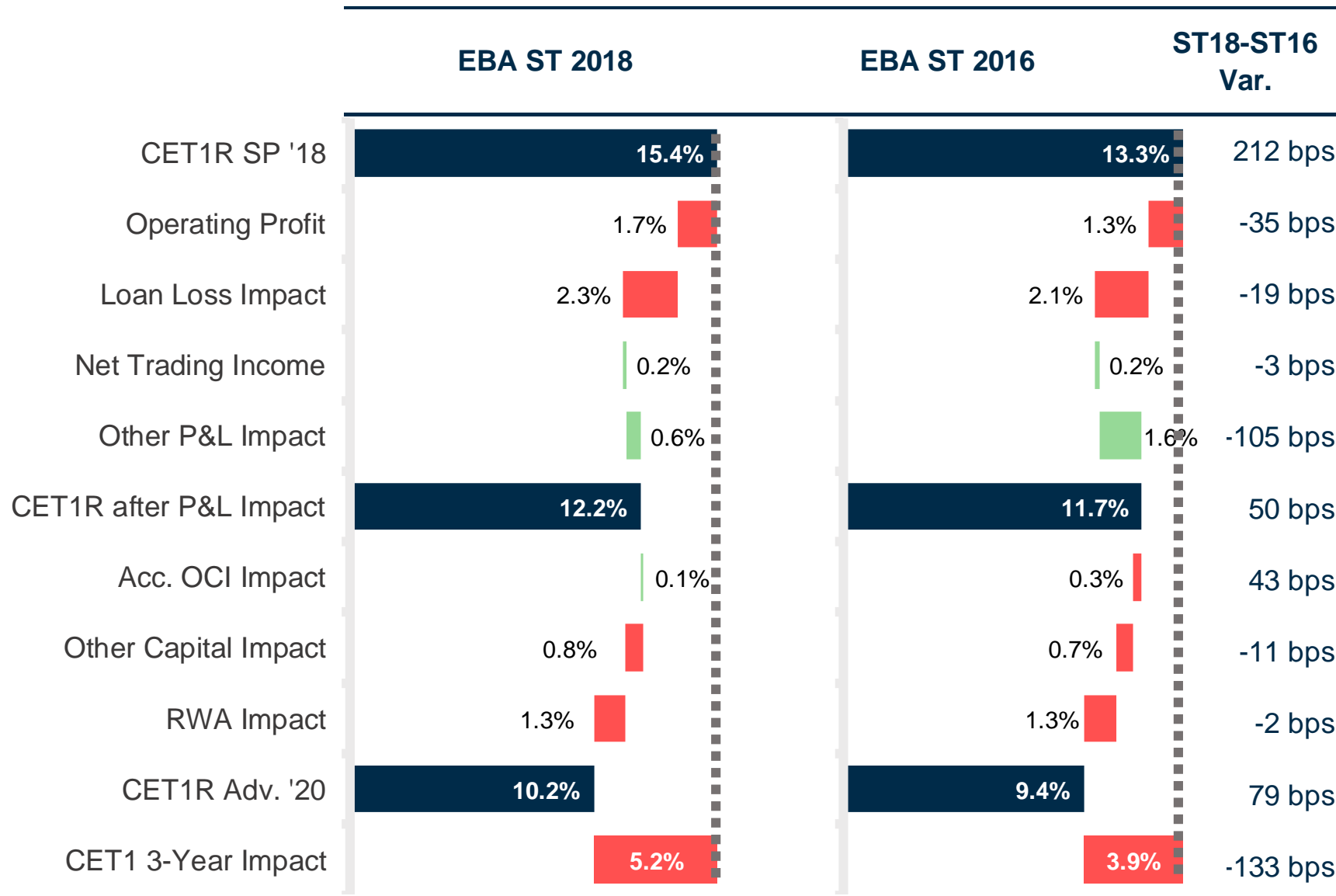
## Transitional vs Fully Loaded



# Stress Test Impact – Waterfall by Key Component – Germany



CET1 adverse depletion of 519bps (FL) mainly driven by negative operating profit (-170bps), loan losses (-230bps) and RWA impact (-130bps). Depletion 133bps higher compared to ST16.



• Positive impact is interpreted as beneficial, while a negative impact is considered detrimental to capital

# Capital Depletion and CET1 Comparison – Spain

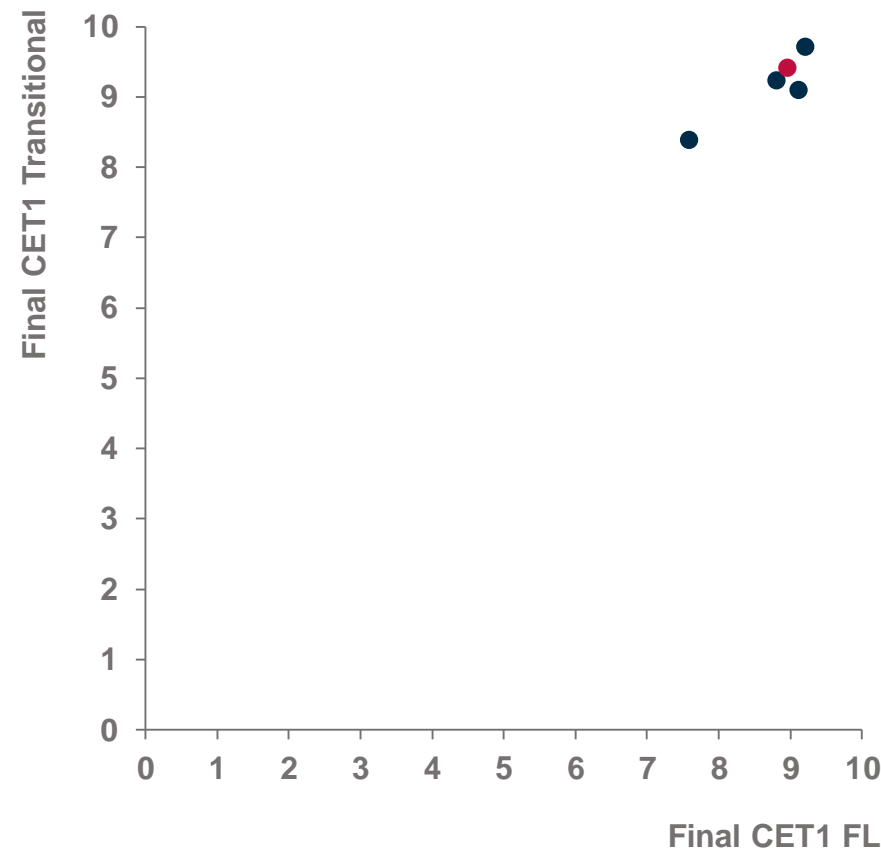


Average CET1 adverse depletion of 279bps (PH) and 189bps (FL). On transitional basis, BBVA showed the lowest impact (234pbs) and Sabadell the highest (511pbs). Average depletion 43bps lower than in ST16 (FL).

## CET1 Capital Depletion Adverse vs '16

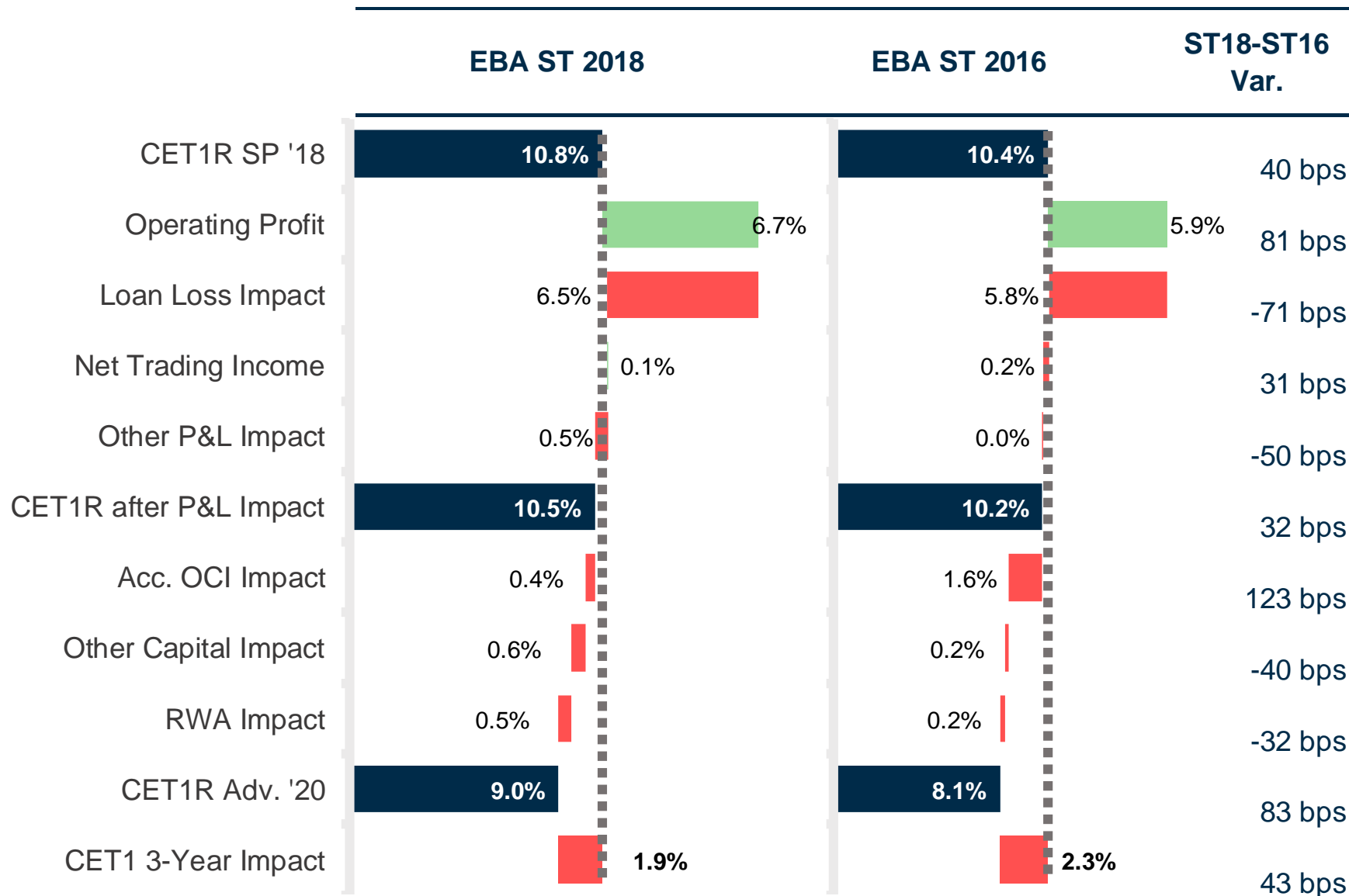
| Code      | Bank Name                            | EBA 2018 Stressed CET1 Depletion 2017-2020 |             |              | Depletion Chg. '18 vs '16 (FL) |
|-----------|--------------------------------------|--|-------------|--------------|--------------------------------|
|           |                                      | Transit.                                   | Impact Bps  | Fully Loaded |                                |
| BBVA      | Banco Bilbao Vizcaya Argentaria S.A. |  | -234        |              | -15                            |
| SAB       | Banco de Sabadell S.A.               |  | -511        |              | 77                             |
| SAN       | Banco Santander S.A.                 |  | -259        |              | -58                            |
| KXA       | CaixaBank, S.A.                      |  | -343        |              | 55                             |
| <b>ES</b> | <b>Spain</b>                         |  | <b>-279</b> |              | <b>-43</b>                     |

## Transitional vs Fully Loaded



# Stress Test Impact – Waterfall by Key Component – Spain

Average impact of 189bps (FL), 43bps lower than in 2016. High operating profit (+670bps) due to bank's portfolio footprint compensates high loan losses (-650bps). Lower OCI impact vs. ST16 (40 vs.160bps).



• Positive impact is interpreted as beneficial, while a negative impact is considered detrimental to capital

# Capital Depletion and CET1 Comparison – France

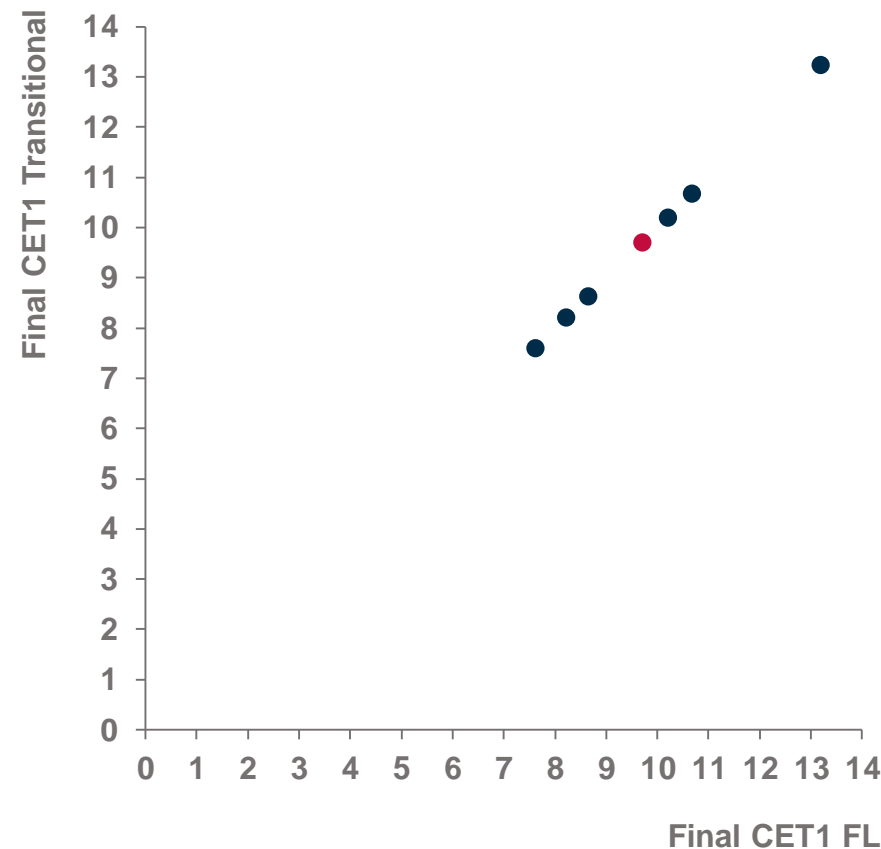


Average CET1 adverse depletion 90bps higher than in 2016: 385bps (PH) and 382bps (FL).  
BNP Paribas showed the best performance from a depletion standpoint (297bps PH).

## CET1 Capital Depletion Adverse vs '16

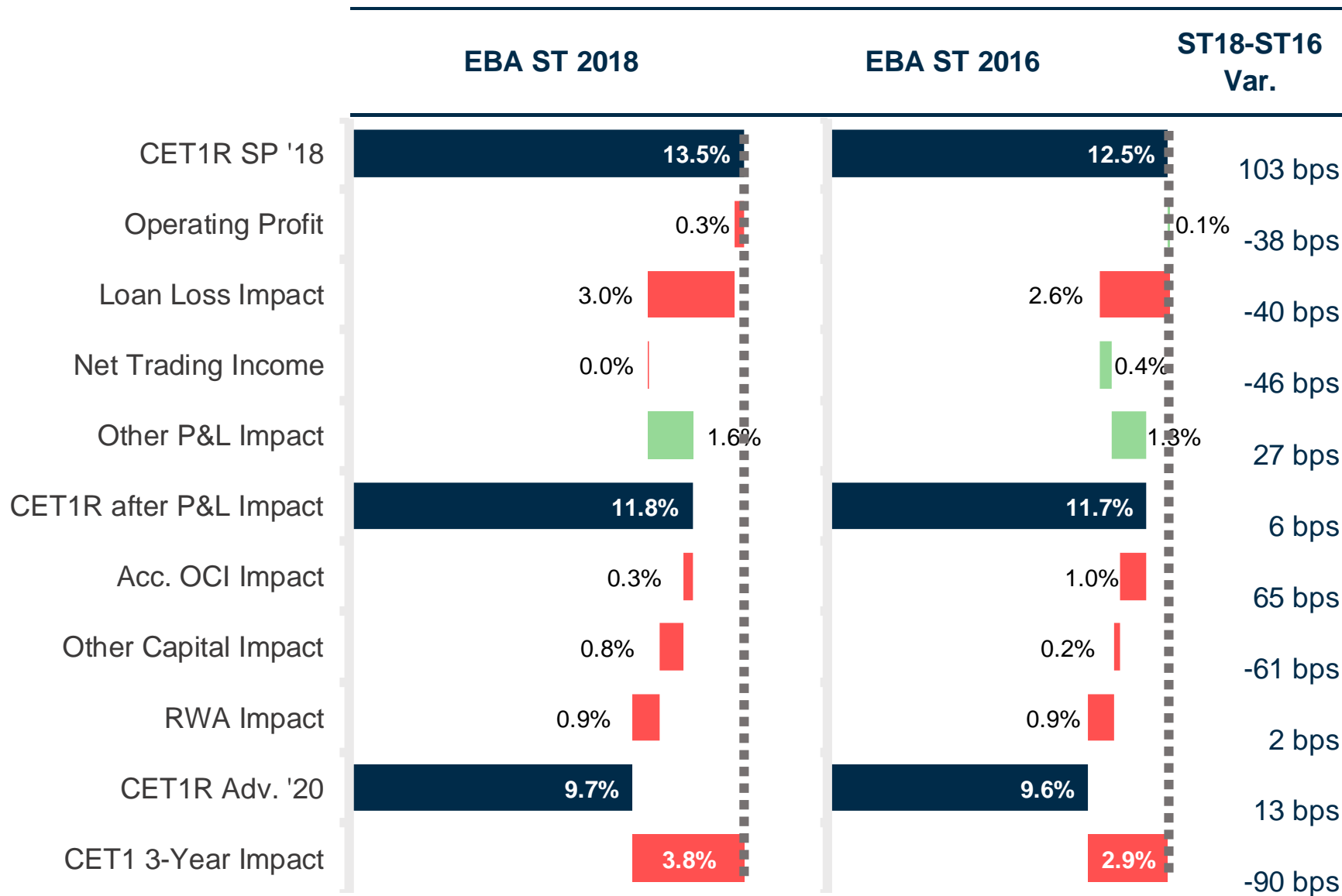
| Code      | Bank Name              | EBA 2018 Stressed CET1 Depletion 2017-2020 |             |              | Depletion Chg. '18 vs '16 (FL) |
|-----------|------------------------|--|-------------|--------------|--------------------------------|
|           |                        | Transit.                                   | Impact Bps  | Fully Loaded |                                |
| BNPP      | BNP Paribas            |  | -297        |              | 52                             |
| BPCE      | Groupe BPCE            |  | -448        |              | 113                            |
| CA        | Groupe Crédit Agricole |  | -433        |              | 117                            |
| CMUT      | Group Crédit Mutuel    |  | -399        |              | 189                            |
| LBP       | La Banque Postale      |  | -460        |              | 24                             |
| SOCG      | Société Générale S.A.  |  | -378        |              | 22                             |
| <b>FR</b> | <b>France</b>          |  | <b>-385</b> |              | <b>90</b>                      |

## Transitional vs Fully Loaded



# Stress Test Impact – Waterfall by Key Component – France

Average impact of 382bps (FL), 90bps higher than in 2016. Loan losses (-300bps) and RWA impact (-90bps) not fully offset by high other P&L impact (+160bps) and negative operating profit (-30bps).



• Positive impact is interpreted as beneficial, while a negative impact is considered detrimental to capital



# Capital Depletion and CET1 Comparison – Italy

Italian CET1 adverse depletion of 341bps (PH) and 304bps (FL), 76bps lower than in ST16.

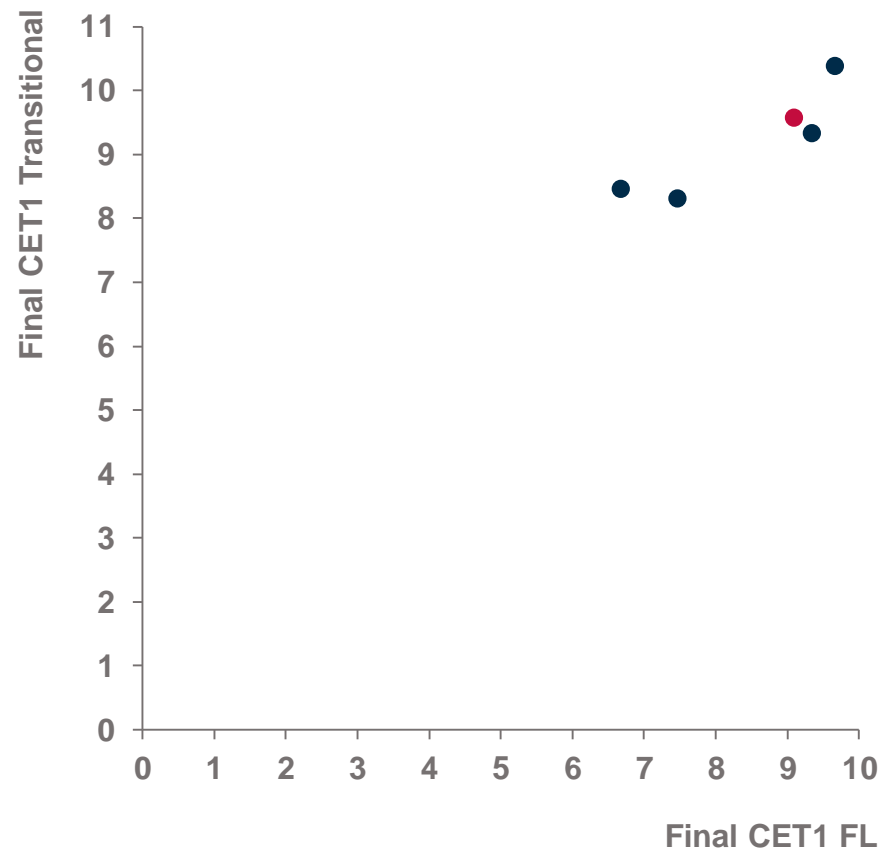
Intesa Sanpaolo showed the best depletion performance (284bps PH) and Banco BPM the worst (547bps PH).



## CET1 Capital Depletion Adverse vs '16

| Code  | Bank Name                                    | EBA 2018 Stressed CET1 Depletion 2017-2020 |            |              |            | Depletion Chg. '18 vs '16 (FL) |
|-------|--|--|------------|--------------|------------|--------------------------------|
|       |  | Transit.                                   | Impact Bps | Fully Loaded | Impact Bps |                                |
| COPOP | Banco BPM S.p.A.                             |  | -547       |              | -453       | 114                            |
| ISP   | Intesa Sanpaolo S.p.A.                       |  | -284       |              | -219       | -7                             |
| UC    | UniCredit S.p.A.                             |  | -346       |              | -334       | 5                              |
| UBI   | Unione Di Banche Italiane Società Per Azioni |  | -338       |              | -374       | 97                             |
| IT    | Italy  |  | -341       |              | -304       | -76                            |

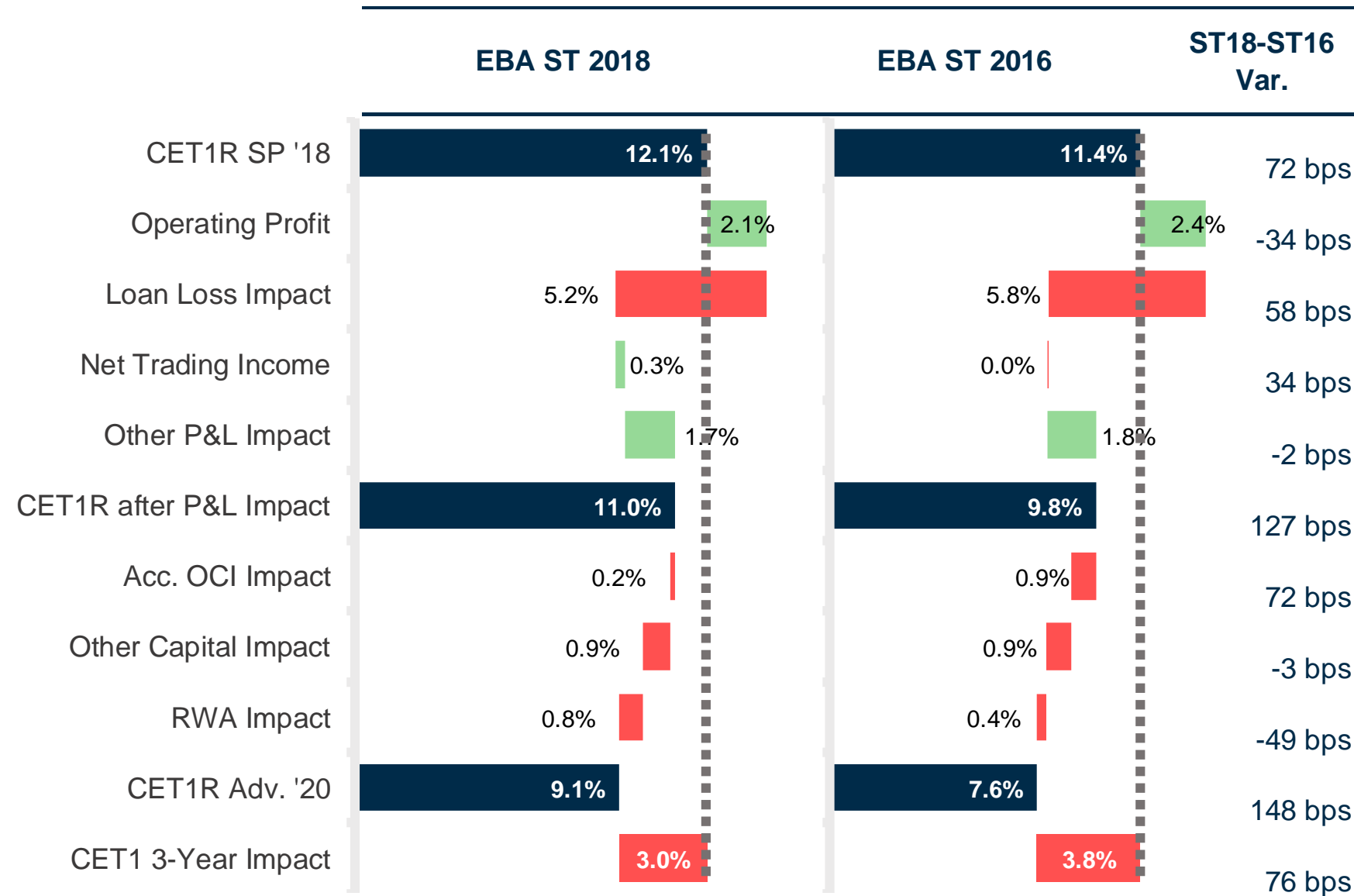
## Transitional vs Fully Loaded



# Stress Test Impact – Waterfall by Key Component – Italy



CET1 adverse depletion of 304bps (FL), 76bps lower vs. ST16 due to lower loan loss (520 vs. 580bps), lower OCI impact (0.2% vs. 0.9%) and higher net trading income (0.3% vs. 0%).



• Positive impact is interpreted as beneficial, while a negative impact is considered detrimental to capital

# Capital Depletion and CET1 Comparison – UK

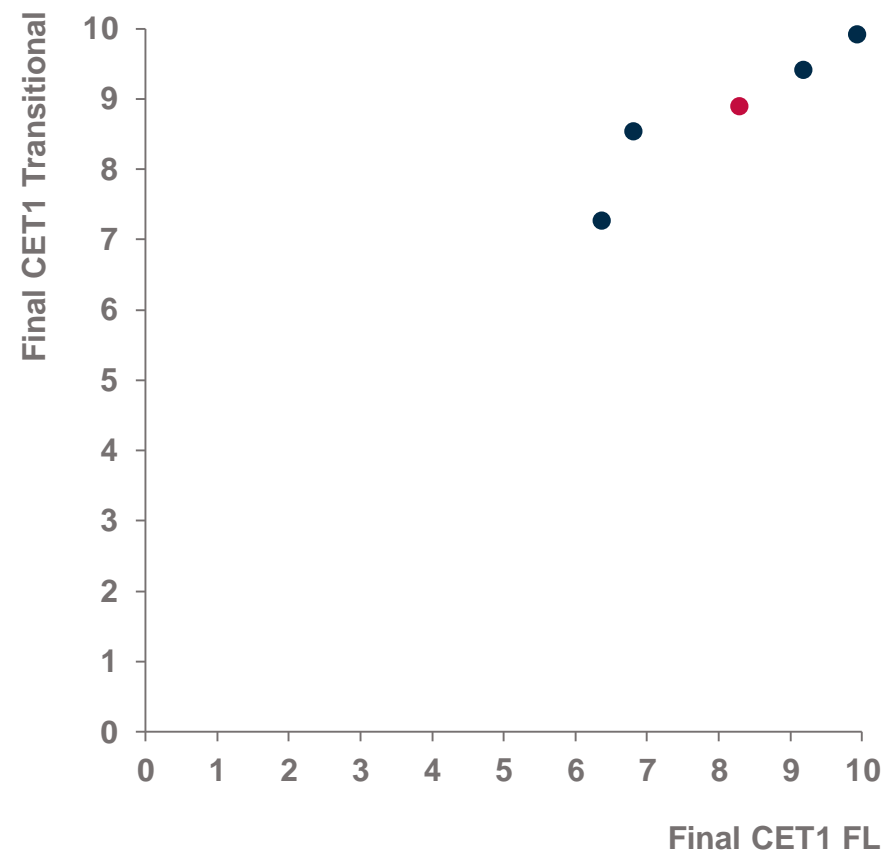


Average CET1 adverse depletion of 556bps (PH) and 599bps (FL), much higher compared to ST16 (201bps) explained by hard brexit scenario. Lloyds presented the highest depletion change vs. 2016 (403bps).

## CET1 Capital Depletion Adverse vs '16

| Code      | Bank Name                            | EBA 2018 Stressed CET1 Depletion 2017-2020 |             |              |             | Depletion Chg. '18 vs '16 (FL) |
|-----------|--------------------------------------|--|-------------|--------------|-------------|--------------------------------|
|           |                                      | Transit.                                   | Impact Bps  | Fully Loaded | Impact Bps  |                                |
| BAR       | Barclays Plc                         |  | -604        |              | -657        | 252                            |
| HSBC      | HSBC Holdings Plc                    |  | -520        |              | -533        | 221                            |
| LLOYD     | Lloyds Banking Group Plc             |  | -548        |              | -694        | 403                            |
| RBS       | The Royal Bank of Scotland Group Plc |  | -623        |              | -625        | -120                           |
| <b>UK</b> | <b>United Kingdom</b>                |  | <b>-556</b> |              | <b>-599</b> | <b>201</b>                     |

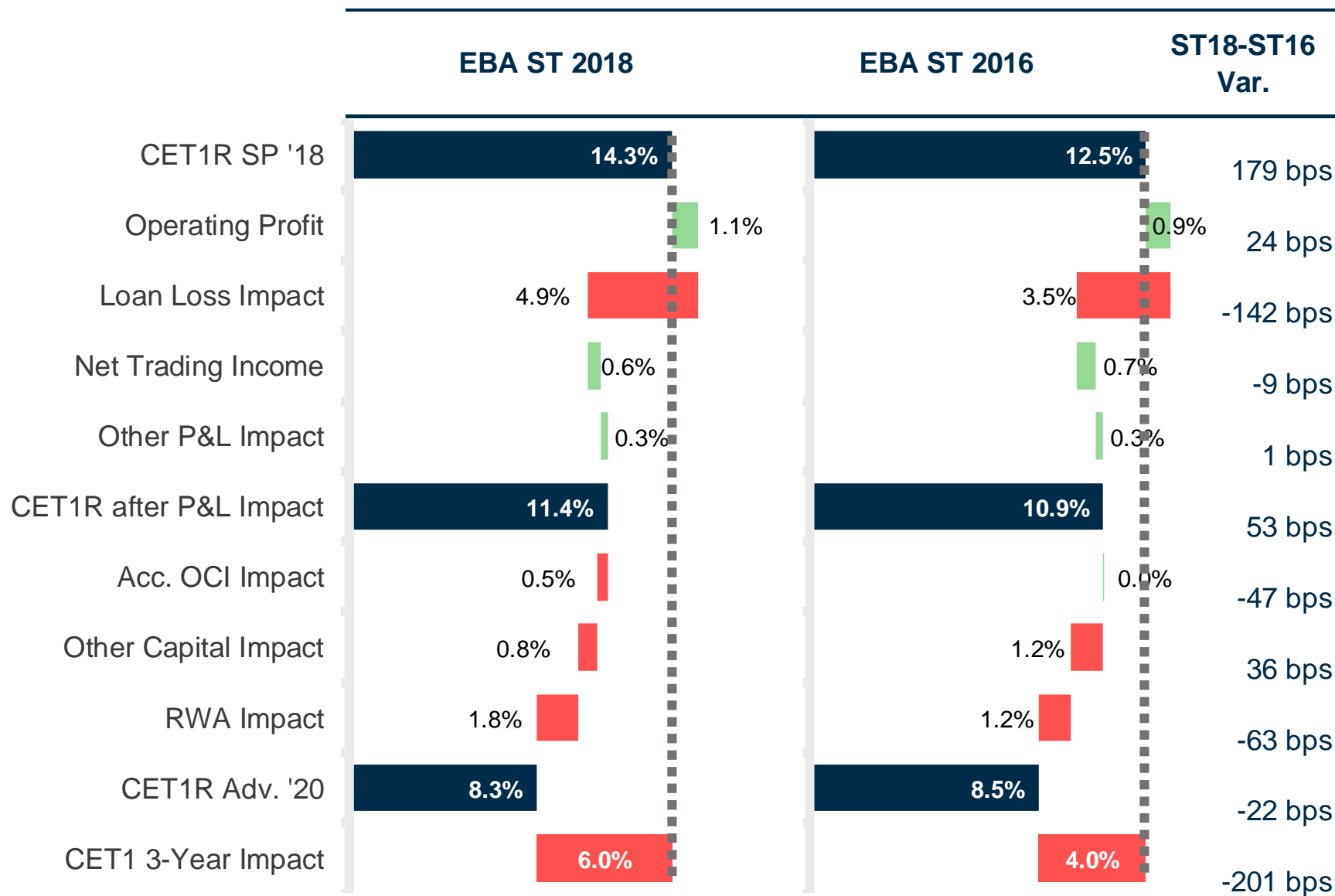
## Transitional vs Fully Loaded



# Stress Test Impact – Waterfall by Key Component – UK



CET1 adverse depletion of 599bps (FL) mainly driven by loan losses (-490bps) and RWA impact (180bps), not compensated by positive operating profit (+110bps).



• Positive impact is interpreted as beneficial, while a negative impact is considered detrimental to capital

# Capital Depletion and CET1 Comparison – Netherlands

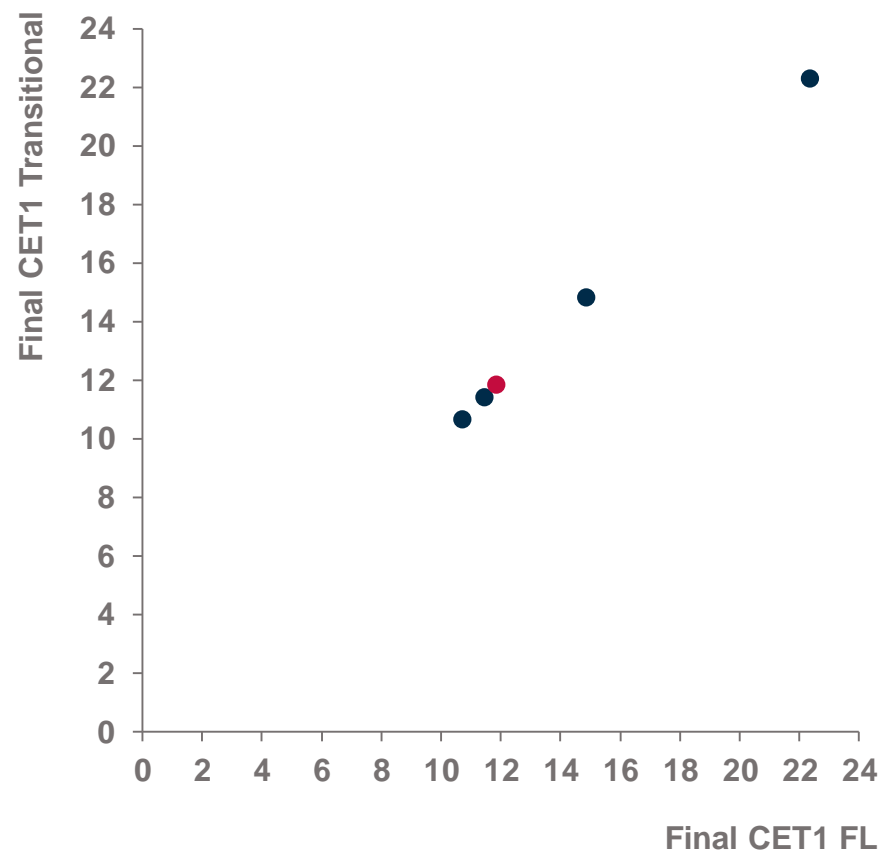


Dutch average CET1 adverse depletion of 380bps (PH) and 372bps (FL), 50bps lower vs. ST16. Results significantly vary by bank, with ABM AMRO showing lowest PH depletion (269bps) and N.V. Bank Nederlandse Gemeenten the highest (712bps).

## CET1 Capital Depletion Adverse vs '16

| Code  | Bank Name                       | EBA 2018 Stressed CET1 Depletion 2017-2020 |            |              |            | Depletion Chg. '18 vs '16 (FL) |
|-------|---------------------------------|--|------------|--------------|------------|--------------------------------|
|       |                                 | Transit.                                   | Impact Bps | Fully Loaded | Impact Bps |                                |
| ABN   | ABN AMRO Group N.V.             |  | -269       |              | -267       | -324                           |
| COOPR | Coöperatieve Rabobank U.A.      |  | -414       |              | -390       | 3                              |
| ING   | ING Groep N.V.                  |  | -383       |              | -381       | 10                             |
| GEM   | N.V. Bank Nederlandse Gemeenten |  | -712       |              | -742       | -113                           |
| NL    | Netherlands                     |  | -380       |              | -372       | -50                            |

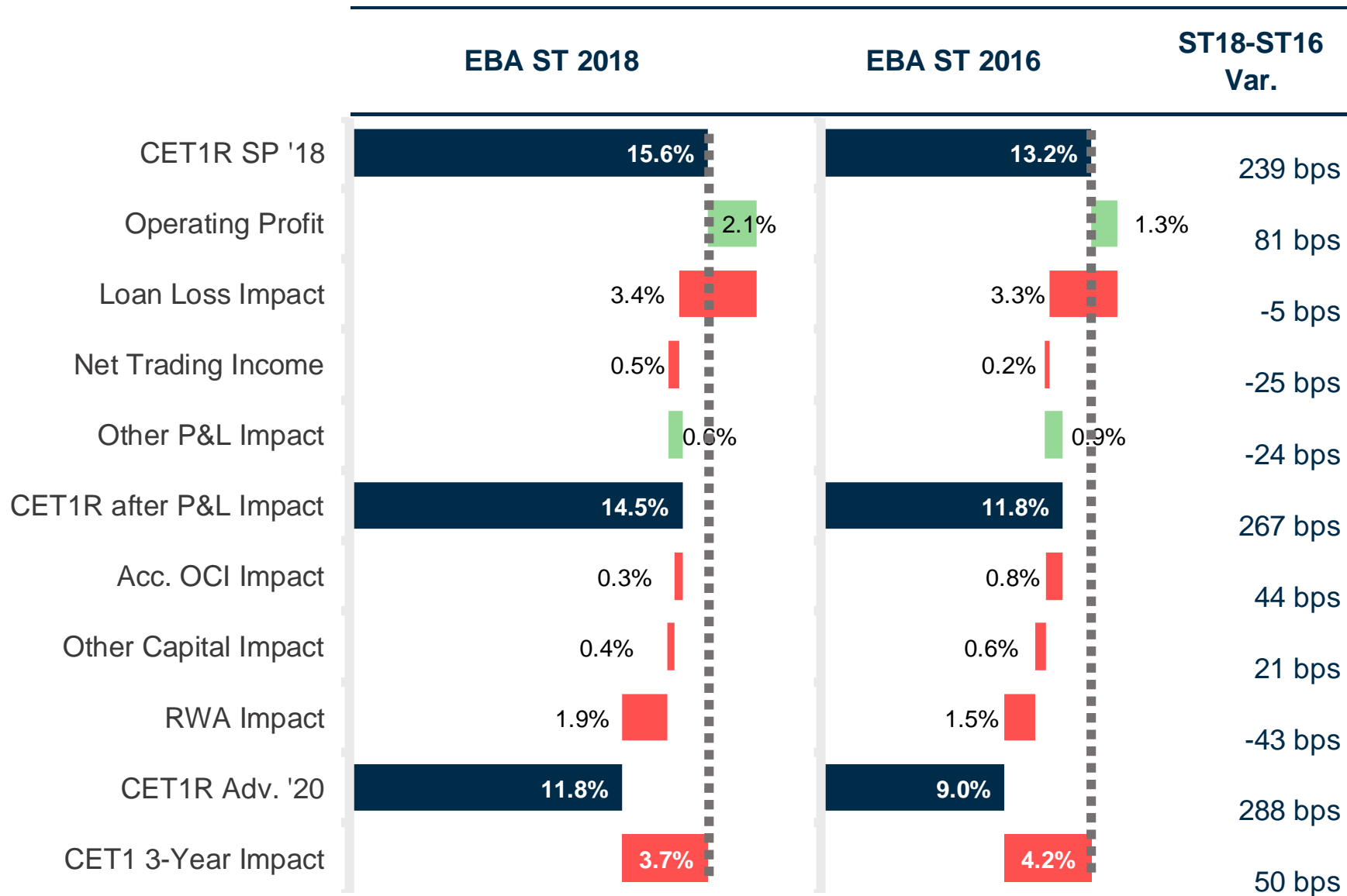
## Transitional vs Fully Loaded



# Stress Test Impact – Waterfall by Key Component – Netherlands



Average impact of 372bps (FL), mostly driven by much higher operating profit (210 vs. 130bps) and lower OCI impact, that offset negative net trading income and higher RWA.



• Positive impact is interpreted as beneficial, while a negative impact is considered detrimental to capital

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# Appendix 1 - Scenarios Used



# SUMMARY EBA ST 2018 VS 2016 – EU COUNTRIES



ST'18 displays more severe scenarios than in ST'16UK, Germany, Spain and Italy are the countries most impacted by the increased severity of ST'18 (measured by net shock bps)

|                       | GDP (Net shock) <sup>1</sup> |         |                  | Unemployment (Net shock) <sup>1</sup> |         |                  | House Price Index (Net shock) <sup>1</sup> |         |                  |
|-----------------------|------------------------------|---------|------------------|---------------------------------------|---------|------------------|--|---------|------------------|
|                       | ST 2018                      | ST 2016 | Difference (bps) | ST 2018                               | ST 2016 | Difference (bps) | ST 2018                                    | ST 2016 | Difference (bps) |
| <b>France</b>         | -150                         | -110    | +40              | 90                                    | 78      | +12              | -1687                                      | -1394   | +293             |
| <b>Germany</b>        | -331                         | -142    | 189              | 250                                   | 234     | +16              | -1730                                      | -456    | +1274            |
| <b>Greece</b>         | -318                         | -687    | -369             | -120                                  | 50      | -170             | -1662                                      | -2124   | -461             |
| <b>Ireland</b>        | -11                          | 38      | +49              | 250                                   | 144     | +106             | -502                                       | -395    | +107             |
| <b>Italy</b>          | -268                         | -150    | +118             | 210                                   | 170     | +40              | -1193                                      | -1017   | +176             |
| <b>Netherlands</b>    | -210                         | -297    | -87              | 350                                   | 341     | +9               | -1239                                      | -657    | +582             |
| <b>Portugal</b>       | -426                         | -522    | -96              | 170                                   | 80      | +90              | -1140                                      | -1153   | -13              |
| <b>Spain</b>          | -72                          | -1      | +71              | -100                                  | -271    | +171             | -1439                                      | -560    | +879             |
| <b>United Kingdom</b> | -323                         | -133    | 190              | 440                                   | 240     | +200             | -2937                                      | -1114   | +1823            |
| <b>European Union</b> | -270                         | -180    | +90              | 240                                   | 220     | +20              | -1911                                      | -1091   | +820             |

Note: (1) Net shocks reflect the total adverse effect to the macroeconomic indicator from current levels, measured as bps

# SUMMARY EBA ST 2018 VS 2016 – NON-EU COUNTRIES

ST'18 for non-EU economies display less severe shocks than in ST'16, with the exception of the US.  
Unemployment and HPI variables added to the scenario data set in ST'18

|               | GDP (Net shock) <sup>1</sup> |         |                  | Unemployment (Net shock) <sup>1</sup> |             | House Price Index (Net shock) <sup>1</sup> |             |
|---------------|------------------------------|---------|------------------|---------------------------------------|-------------|--|-------------|
|               | ST 2018                      | ST 2016 | Difference (bps) | ST 2018                               | Shock (bps) | ST 2018                                    | Shock (bps) |
| <b>Turkey</b> | 462                          | -26     | -488             | 160                                   |             | 1476                                       |             |
| <b>USA</b>    | 217                          | 424     | +207             | 240                                   |             | -1928                                      |             |
| <b>LATAM</b>  | 348                          | -20     | -368             | n.a.                                  |             | n.a.                                       |             |
| <b>Brazil</b> | 204                          | -365    | -570             | 120                                   |             | -2421                                      |             |
| <b>Mexico</b> | 462                          | 321     | -141             | 110                                   |             | -691                                       |             |
| <b>Chile</b>  | 348                          | 262     | -86              | 270                                   |             | -1201                                      |             |

Note: (1) Net shocks reflect the total adverse effect to the macroeconomic indicator from current levels, measured as bps

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## Appendix 2 – List of Banks in EBA 2018 ST

# List of Banks in EBA 2018 ST

Name of Banks and their respective bank code

| Country | Bank Name                            | Bank Code |
|---------|--------------------------------------|-----------|
| AT      | Erste Group Bank AG                  | ERST      |
| AT      | Raiffeisen Bank International AG     | RAZE      |
| BE      | Belfius Banque SA                    | BELF      |
| BE      | KBC Group NV                         | KBC       |
| DE      | Bayerische Landesbank                | BLB       |
| DE      | Commerzbank AG                       | COM       |
| DE      | Deutsche Bank AG                     | DEBK      |
| DE      | DZ BANK AG Deutsche Zentral          | DZB       |
| DE      | Landesbank Baden-Württemberg         | LBW       |
| DE      | Landesbank Hessen-Thüringen          | LHTG      |
| DE      | Norddeutsche Landesbank              | NLG       |
| DE      | NRW.Bank                             | NRW       |
| DK      | Danske Bank                          | DBK       |
| DK      | Jyske Bank                           | JBK       |
| DK      | Nykredit Realkredit                  | NKR       |
| ES      | Banco Bilbao Vizcaya Argentaria S.A. | BBVA      |
| ES      | Banco de Sabadell S.A.               | SAB       |
| ES      | Banco Santander S.A.                 | SAN       |
| ES      | CaixaBank, S.A.                      | KXA       |
| FI      | OP Financial Group                   | OPG       |
| FR      | BNP Paribas                          | BNPP      |
| FR      | Groupe BPCE                          | BPCE      |
| FR      | Groupe Crédit Agricole               | CA        |
| FR      | Group Crédit Mutuel                  | CMUT      |

| Country | Bank Name                             | Bank Code |
|---------|---------------------------------------|-----------|
| FR      | La Banque Postale                     | LBP       |
| FR      | Société Générale S.A.                 | SOCG      |
| HU      | OTP Bank Nyrt.                        | OTP       |
| IE      | Allied Irish Banks Group plc          | AIB       |
| IE      | Bank of Ireland Group plc             | BIRE      |
| IT      | Banco BPM S.p.A.                      | COPOP     |
| IT      | Intesa Sanpaolo S.p.A.                | ISP       |
| IT      | UniCredit S.p.A.                      | UC        |
| IT      | Unione di Banche Italiane Società     | UBI       |
| NL      | ABN AMRO Group N.V.                   | ABN       |
| NL      | Coöperatieve Rabobank U.A.            | COOPR     |
| NL      | ING Groep N.V.                        | ING       |
| NL      | N.V. Bank Nederlandse Gemeenten       | GEM       |
| NO      | DNB Bank Group                        | DNB       |
| PL      | Polska Kasa Opieki SA                 | PLK       |
| PL      | Powszechna Kasa Oszczednosci Bank     | PBP       |
| SE      | Nordea Bank - group                   | NORD      |
| SE      | Skandinaviska Enskilda Banken - group | SEB       |
| SE      | Svenska Handelsbanken - group         | SHAN      |
| SE      | Swedbank - group                      | SWED      |
| UK      | Barclays plc                          | BAR       |
| UK      | HSBC Holdings plc                     | HSBC      |
| UK      | Lloyds Banking Group plc              | LLOYD     |
| UK      | The Royal Bank of Scotland Group Plc  | RBS       |

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## Appendix 3 – A&M Authors

# A&M Authors



**Fernando de la Mora**

*Head of Financial Services*

European Stress Test / Prudential / Risk Management Lead

Responsible for A&M Spain and Portugal and leader of the risk and regulatory practice in Europe

More than 25 years of experience in bank consulting, in the US and Europe

Expert in risk management, stress testing, capital and governance

Clients include global financial services firms, investment bank, regional banks, insurance companies, asset managers and hedge funds



**Rocio Falcones**

*Senior Director*

Over 13 years of experience in financial consulting and banking in the US, Spain and the UK

Led several risk and capital management projects for major European banks

Expert in stress testing, credit risk modeling, capital management and regulation

Experienced in credit Due Diligence for European financial institutions

Former Banco Santander and Bankinter



**Jose Flores**

*Associate*

4 years of experience in risk, capital and regulatory projects for the banking sector with special focus in stress testing

Collaborated in projects related to risk and capital management, EBA stress testing, IFRS9 methodology implementation in stress testing and non-performing assets strategic guidance

Collaborated on the creation of several risk, capital and finance benchmarks across the European banking system



**Jose Vasquez**

*Analyst*

3 years of experience in banking analysis

Participated in several projects regarding IFRS9 methodological implementation, stress test, governance, and capital management

Worked at the World Bank Group providing research assistance on topics regarding financial markets infrastructure

Expert in data analysis and VBA programming

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