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IACPM, Chicago 8th November 2023

BAD FOOD, BIG PORTIONS:
DINING OUT AT THE BASEL IV DINER

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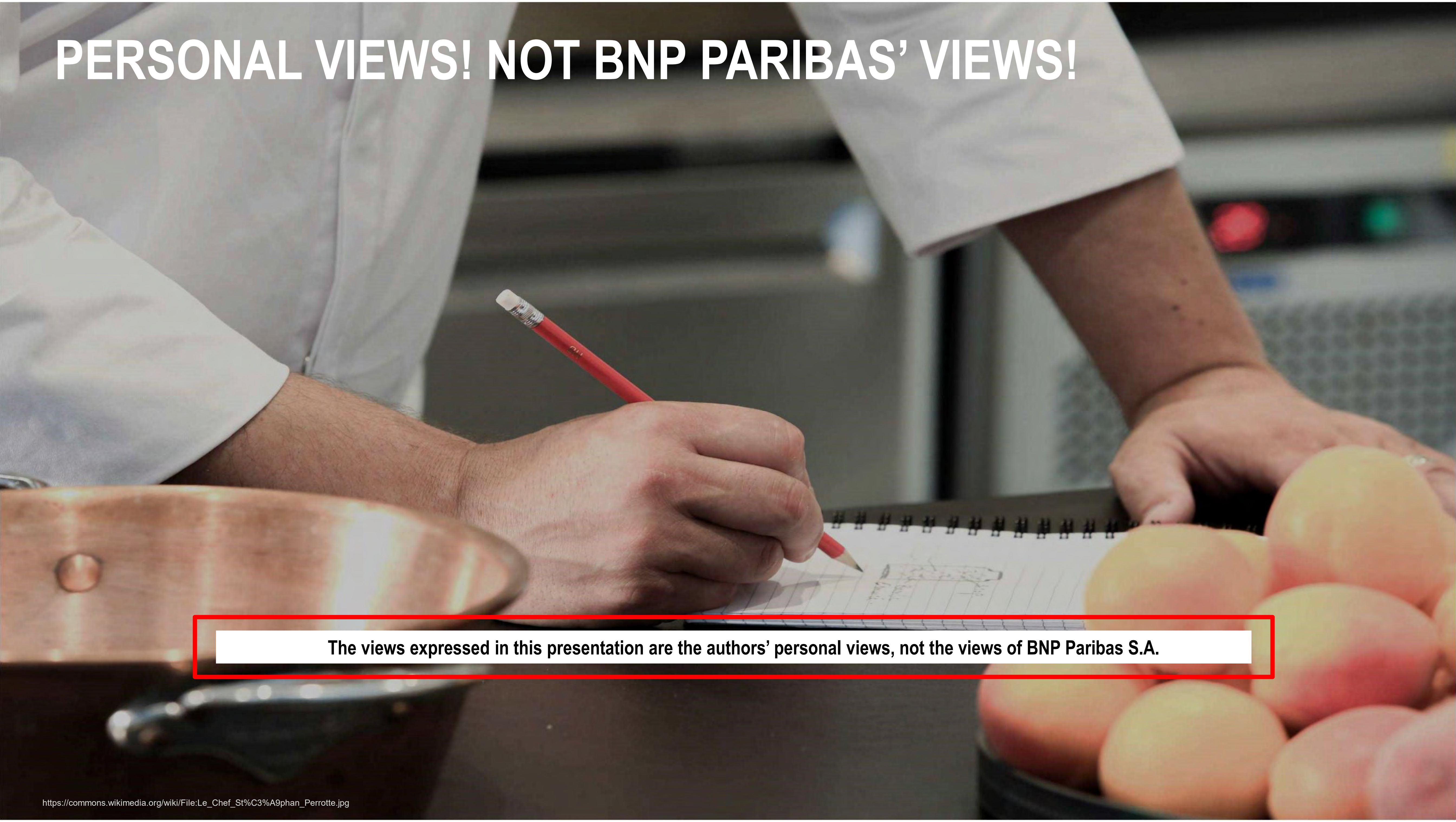
PERSONAL VIEWS! NOT BNP PARIBAS' VIEWS!



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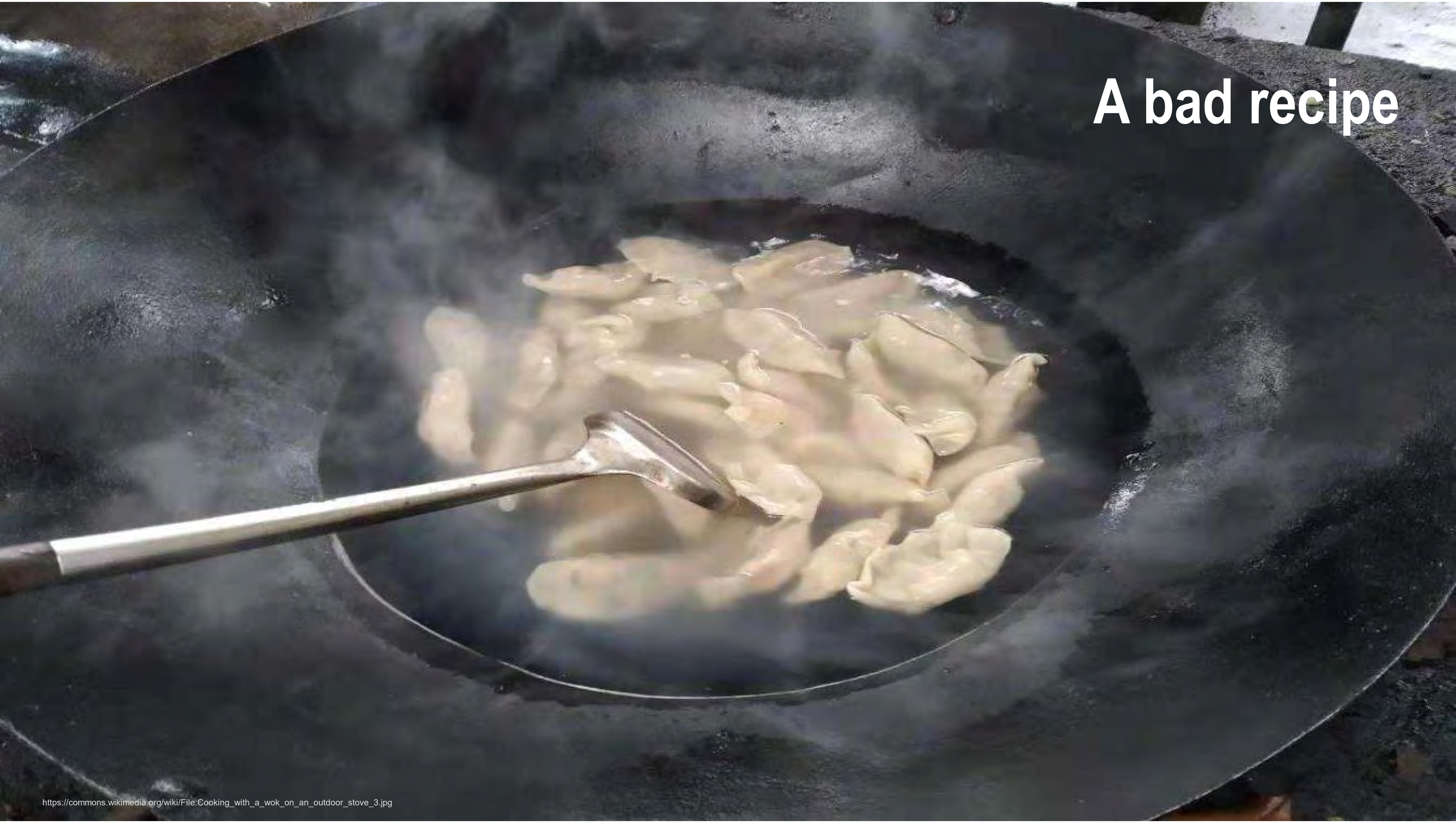
1. A bad recipe
2. The different ingredients of international cuisine
3. Add your own sauce to hide the taste
4. Doggy bag please!

A bad recipe



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Basel II was a modernisation of capital regulation

From Basel I (1988) to Basel II (2004)

- **20 years ago, the Basel framework was updated to fix weaknesses**
- **Basel II was set up to be risk sensitive and to fit with reality**
- **The "use test" demanded that regulatory capital models fitted with "real" risk management, to avoid arbitrage**
- **Heterogeneity of risk assessment modelling was desirable and encouraged**
- **As well as minimum capital requirements (Pillar 1), Basel II used supervisory review (Pillar 2) and market discipline (Pillar 3) to make the new framework work**
- **Basel II became effective in 2008, after the onset of the financial crisis**

*"It became increasingly evident through the 1990s that there were growing **weaknesses in Basel I**. In particular, the relatively simple framework has become increasingly incompatible with the increased scope and complexity of the banking activities of our largest banking institutions. The crude risk-weighting mechanisms of Basel I bear little resemblance to the complex risk profiles and risk management strategies that larger banks are capable of pursuing. **The misspecification of risk under Basel I creates inappropriate incentives and arbitrage opportunities that can undermine supervisory objectives**. And dealing with outdated and mismatched regulatory requirements is costly to banks. In response to these issues, the Basel Committee commenced an effort to move toward a more risk-sensitive capital regime, culminating in the publication of the Basel II Framework"*

Testimony of John C. Dugan, Comptroller Of The Currency, before the Committee On Banking, Housing And Urban Affairs of the United States Senate, 26 September, 2006

The risk-sensitivity of Basel II caused consternation

Problems with Basel II

- **In the aftermath of the financial crisis, Basel II was criticised**
  - **Perceived complexity and opacity of models**
  - **Varied implementation across jurisdictions/supervisors**
  - **Highly varied RWA outcomes across banks**
- **Multiple empirical studies came to different conclusions on whether the high RWA variability was warranted**
- **Criticisms of the IRB approach continued. It became clear there was insufficient buy-in to the spirit of Basel II**
- **Supervisory actions (eg. the ECB's TRIM exercise) attempted to improve risk model integrity**

*"Relying on banks' own internally developed methodologies to calculate their regulatory requirements was like **letting the fox guard the chicken coop**"*

*"The Tier 1 capital ratios appeared **uninformative** about banks' true default probabilities and, therefore, the actual risks on their balance sheets"*

"Basel III implementation: the last mile is always the hardest", Speech by Andrea Enria, Chair of the Supervisory Board of the ECB, 3 May 2021

*"**The IRB approach is problematic**. The combined complexity and opacity of risk weights generated by each banking organization for purposes of its regulatory capital requirement create manifold risks of gaming, mistake, and monitoring difficulty. The IRB approach contributes little to market understanding of large banks' balance sheets, and thus fails to strengthen market discipline"*

Rethinking the aims of prudential regulation", Speech by Daniel Tarullo, Member of the Board of Governors of the Federal Reserve System, 8 May 2014

Solution: Make modelled RWAs floored (or is it "flawed"?)

Capital floors: the design of a framework based on standardised approaches, Basel Committee, December 2014

- *RWA inconsistency and dispersion.* Excessive variation in RWAs for the same exposures raises level playing field concerns across internationally active banks and detracts from market confidence in the capital framework. Risk-weighted capital floors enforce greater consistency by narrowing the range of outcomes. In contrast, the leverage ratio does not directly address the inconsistent assignment of risk weights.
- *Low level of models-based RWAs.* Extremely low levels of internally modelled RWAs have been observed for some exposure categories. Even with a leverage ratio in place, there is still the risk that banks could face incentives to grow rapidly in businesses where the calibration of internally modelled capital requirements is low. After the models-based approaches of Basel II were introduced, significant reductions in bank-wide RWAs occurred in a number of jurisdictions. Risk-weighted capital floors are responsive to these issues.
- *Horizontal inequity in risk-weighted capital requirements.* Capital floors make for a more level playing field between standardised banks and banks using internal models for regulatory capital purposes.

Source: Capital floors: the design of a framework based on standardised approaches, Basel Committee, December 2014

Basel IV: A retrogressive regime

Global Financial Crisis

Pre-History	1988 Basel I	2004 Basel II	2009 Basel III	2017 Basel IV

Pre-History

- Bank regulation fragmented
- Mostly reserve-based
- Some use of equity:assets

1988 Basel I

- "Basel Accord"
- Global standard
- Cooke Ratio (8%)
- Basic RWAs
  - Corporates 100%
  - Mortgages 50%
  - Banks 20%
  - Governments 0%

Today's Framework

- Risk-centric
- Model-based "IRB"
- Onerous SA fallback
- New concepts (Supervisory Review P2, Market Discipline P3, Op Risk etc.)
- Some new deductions (eg. DTAs)
- CET1 fetish
- Higher ratio requirements: buffer framework
- Leverage ratio backstop
- LCR, NSFR

2017 Basel IV

- Officially, "finalisation of Basel III"
- Back to the Future: constraints on models
- "Level Playing Field" shibboleth trumps risk discipline
- Still WIP

Risk discipline

- International lending subject to arbitrage and a risk to financial stability
- Widespread arbitrage eg. SIVs Primitive
- Capital levels too low and "poor quality"
- Perception that banks models are self-serving, unreliable
- *"To willingly regress towards risk-insensitive capital requirements is nothing less than an act of madness" **

*Source: * "Basel IV floors are Flaws", BNP Paribas Bank Advisory Client Briefing Note, 18 May 2021*

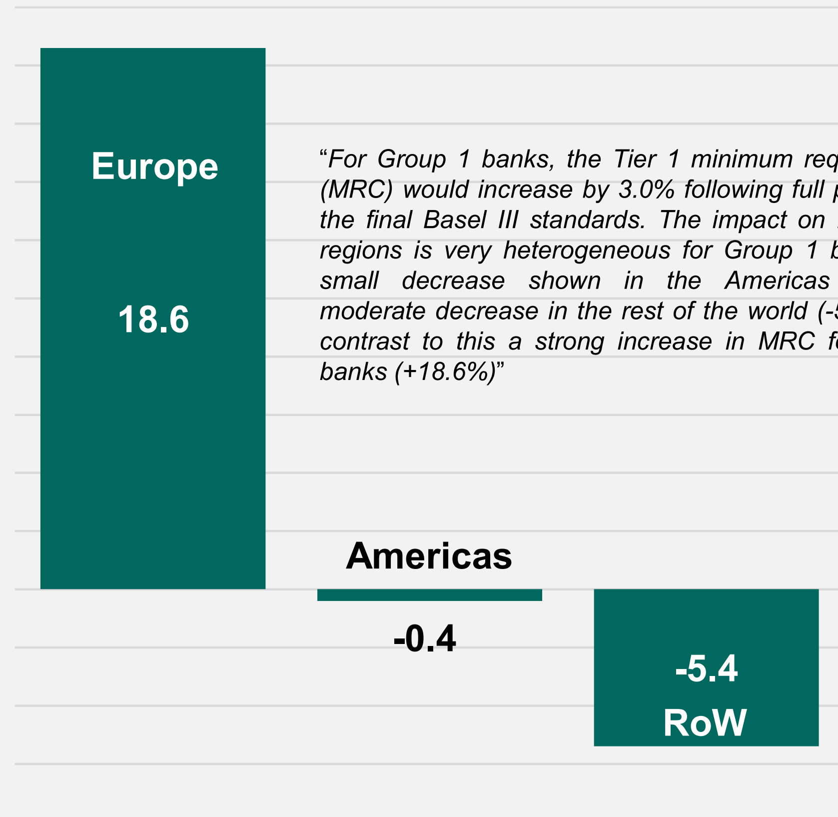
Basel IV: A distortive regime

Risk distortion is the problem

- Outlawing or constraining the use of risk models in setting capital requirements reduces risk sensitivity
- Basel IV causes a divergence between economic risk and regulatory capital requirements
- Floors lead to reg-cap for low risk business that is not commensurate with their economic risk
- Banks will struggle to sustain low risk businesses, customers and products
- Good risk management will not be reflected in reg-cap

"More Capital" has been a bone of contention

Basel IV Impact on Banks (% increase in RWAs): Initial view



"For Group 1 banks, the Tier 1 minimum required capital (MRC) would increase by 3.0% following full phasing-in of the final Basel III standards. The impact on MRC across regions is very heterogeneous for Group 1 banks with a small decrease shown in the Americas (-0.4%), a moderate decrease in the rest of the world (-5.4%) and in contrast to this a strong increase in MRC for European banks (+18.6%)"

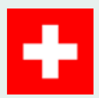
Source: Basel Committee, Oct 2019; EBA "Basel III Monitoring Exercise, October 2019 (results based on data as of 31 December 2018)

The different ingredients of international cuisine

https://commons.wikimedia.org/wiki/File:Cooking_without_fire.jpg

Basel IV is here

Basel IV: International Status Update

Jurisdiction	Official Basel IV Transposition Rules		Implementation
	Draft Date	Final Date	Day 1
	"*Basel III: Finalising post-crisis reforms*", Dec 2017		Jan 2023 ✓
	Dec 2020 ✓	Nov 2021 ✓	Jan 2023 ✓
	Mar 2021 ✓	Oct 2021 ✓	Feb 2023 ✓
	Oct 2021 ✓	H2 2023	"Jan 2025"
	Jul 2022 ✓	H2 2023	Jul 2024
	Nov 2022 ✓	H1 2024	Jul 2025
	Jul 2023 ✓	H2 2024	Jul 2025

Source: Regulatory authorities (BCBS, APRA, OSFI, European Commission, FINMA, Bank of England, Federal Reserve), BNP Paribas

Smaller jurisdictions are compliant; the superpowers are deviant

Overwhelmingly follow Basel IV framework




Significant deviations from Basel IV framework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The EU deviations are meant to reflect regional specificities

Key Deviations from Basel IV of EU Proposals

MAINTAIN

1. Corporate CVA exemption
2. SME support factor of 0.7619x
3. Infrastructure support factor of 0.75x
4. “Danish Compromise” for bancassurance
5. SA Permanent Partial Use for Sovereigns (and extend…)

CHOOSE

6. Setting operational risk ILM at 1 rather than variable
7. Reduction of buffer requirements to offset floor impact

TEMPORARY for SA Output Floor

8. 10% RW to low risk mortgages, 65% RW to unrated corporates
9. Lower SACCR α-Factor from 1.4 to 1

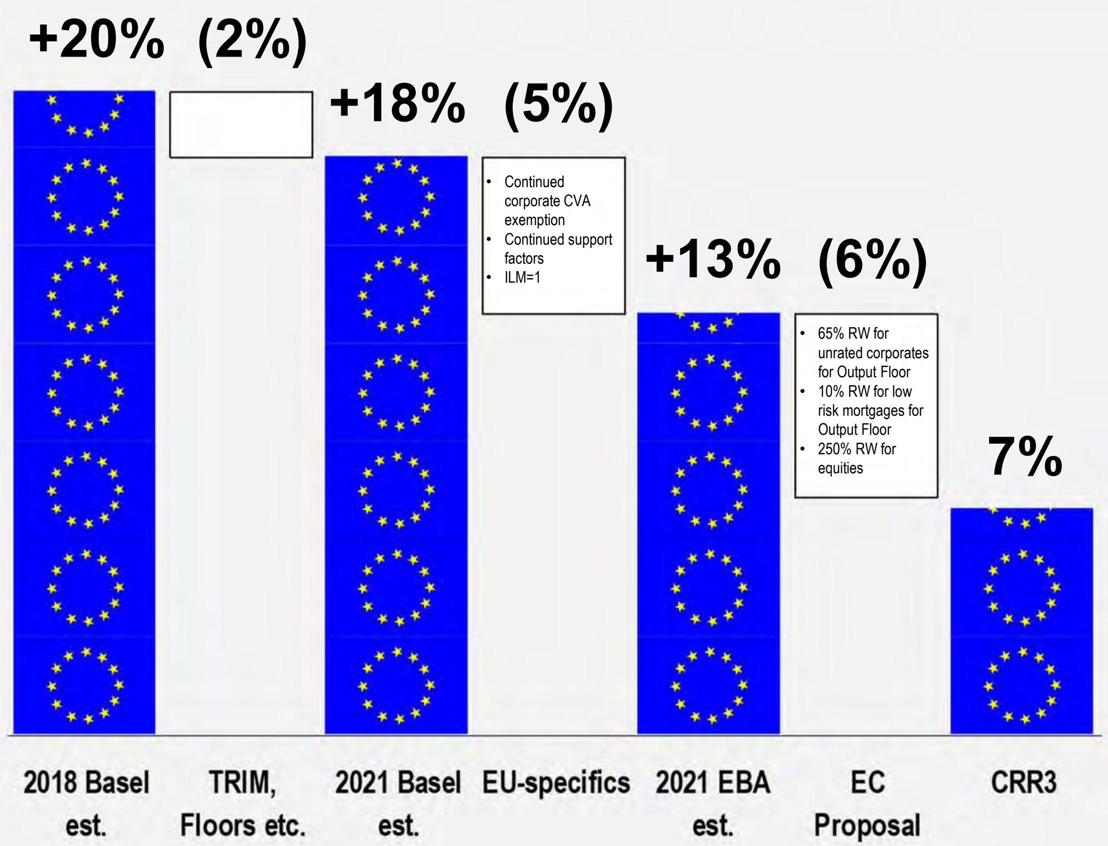
NOVEL

10. Lower RWs for legacy strategic and intra-group equity stakes
11. Preferential risk weights for “high quality” specialised lending
12. Mortgage LTVs not frozen at origination
13. Reduction of p-factor for securitisations from 1.0 to 0.5 (and from 0.5 to 0.25 for STS securitisations)

https://commons.wikimedia.org/wiki/File:Escargot_%C3%A0_la_Bourguignonne_-_eatingeast.jpg

Basel IV frontloading and tweaking in Europe

Basel IV Impact on EU Banks (Increase in RWAs)



Source: Basel Committee (Oct 2018 and Sept 2021), EBA (Sept 2021), EC (Oct 2021), BNP Paribas

- Impact of Basel IV on European banks has been front-loaded or reduced
  - By *increasing RWAs* via TRIM exercise
  - By *diluting Basel IV* via the CRR3 proposals
- Acceptable "no significant increase" = +10%
- Latest estimates of aggregate impact: +6% (Sept. 2023)
- At an institutional level, impact is skewed

The US deviates by imposing a extra high degree of standardisation

Key aspects of US "Basel III Endgame" Proposals

- No IRB models to calculate credit risk capital requirements
- Expanded Risk-Based Approach (ERBA) is effectively the Standardised Approach (SA), Basel 72.5% floor irrelevant, US standardised approach (Basel I) also obsolete
- Capital allocation will shift from advanced to SA
- No use of external credit ratings from CRAs
- Some SA RWs higher than Basel norms (eg. credit card transactors 55% not 45%; 70% LTV mortgage 50% not 30%)
- Catch up with Basel: extension of full set of regulations (capital deductions, stress tests, LCR, inclusion of AOCI, leverage ratio, TLAC, etc.) to all banks with assets over $100bn
- More stringent calculation of GSIB scores
- "Stress Capital Buffer" floored at 2.5% of the new ERBA increases capital requirements further. But at least it's not a "*move to an ultra vires, non-transparent, process-free, European "Pillar 2" system*" * !

Source: US regulatory agencies' NPR, 27 July 2023

(Of course, subject to comment until 16 Jan and may change!)

*Source: * BPI Policy Recommendations Related To The 2023 Banking Stress, BPI, 9 June 2023*

Basel IV will be gold-plated in the US

Capital allocation will shift from advanced to SA

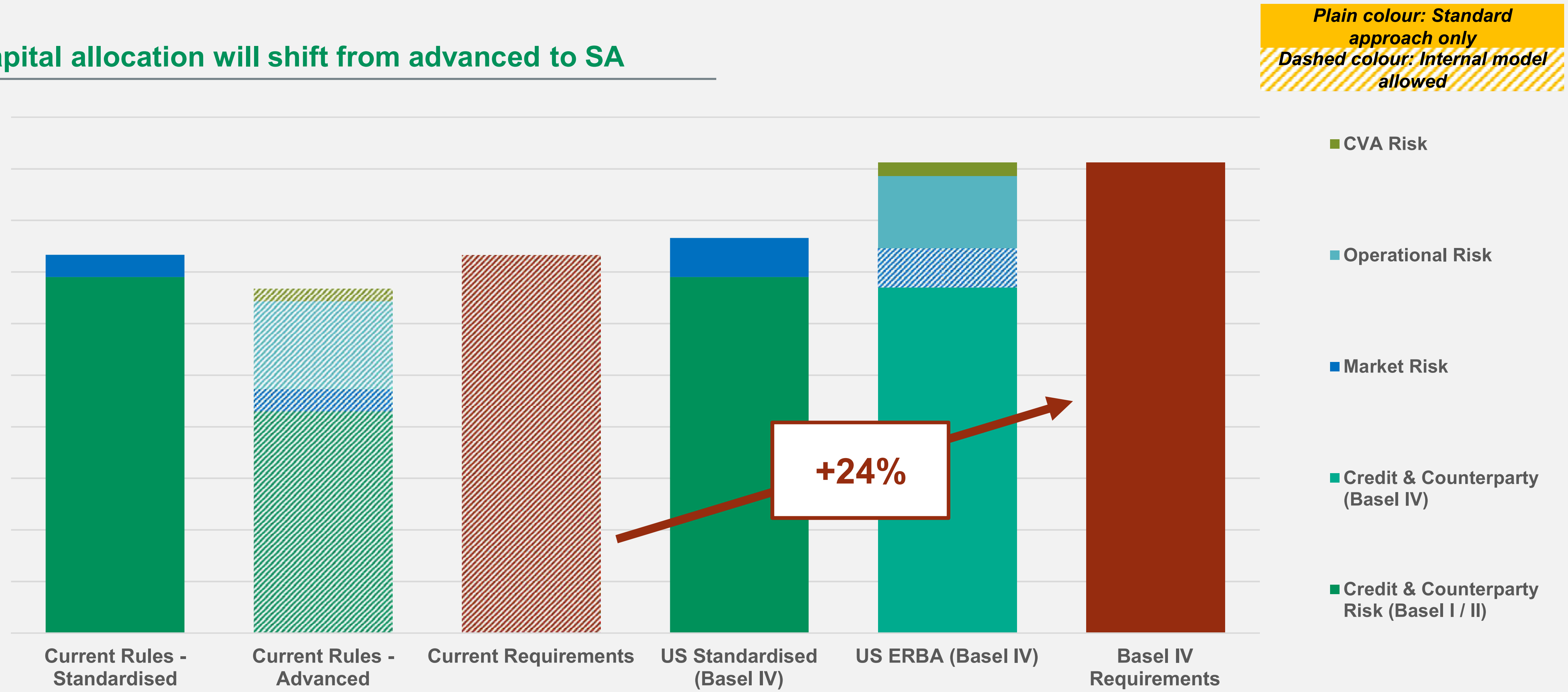
Risk Category	Aggregate RWA ($ Billion) for Cat I and II Holding Companies			Aggregate RWA ($ Billion) for Cat III and IV Holding Companies	
	Current U.S. Standardized	Current U.S. Advanced	Basel III Proposal (Estimated)	Current U.S. Standardized	Basel III Proposal (Estimated)
Credit Risk	6,900	4,300	6,700	4,000	3,800
Market Risk	430	430	760	130	220
Operational Risk	--	1,700	1,400	--	550
CVA Risk	--	240	260	--	28
Total	7,400	6,700	9,200	4,200	4,600

+24%

Source: US regulatory agencies' NPR, 27 July 2023

Basel IV will be gold-plated in the US

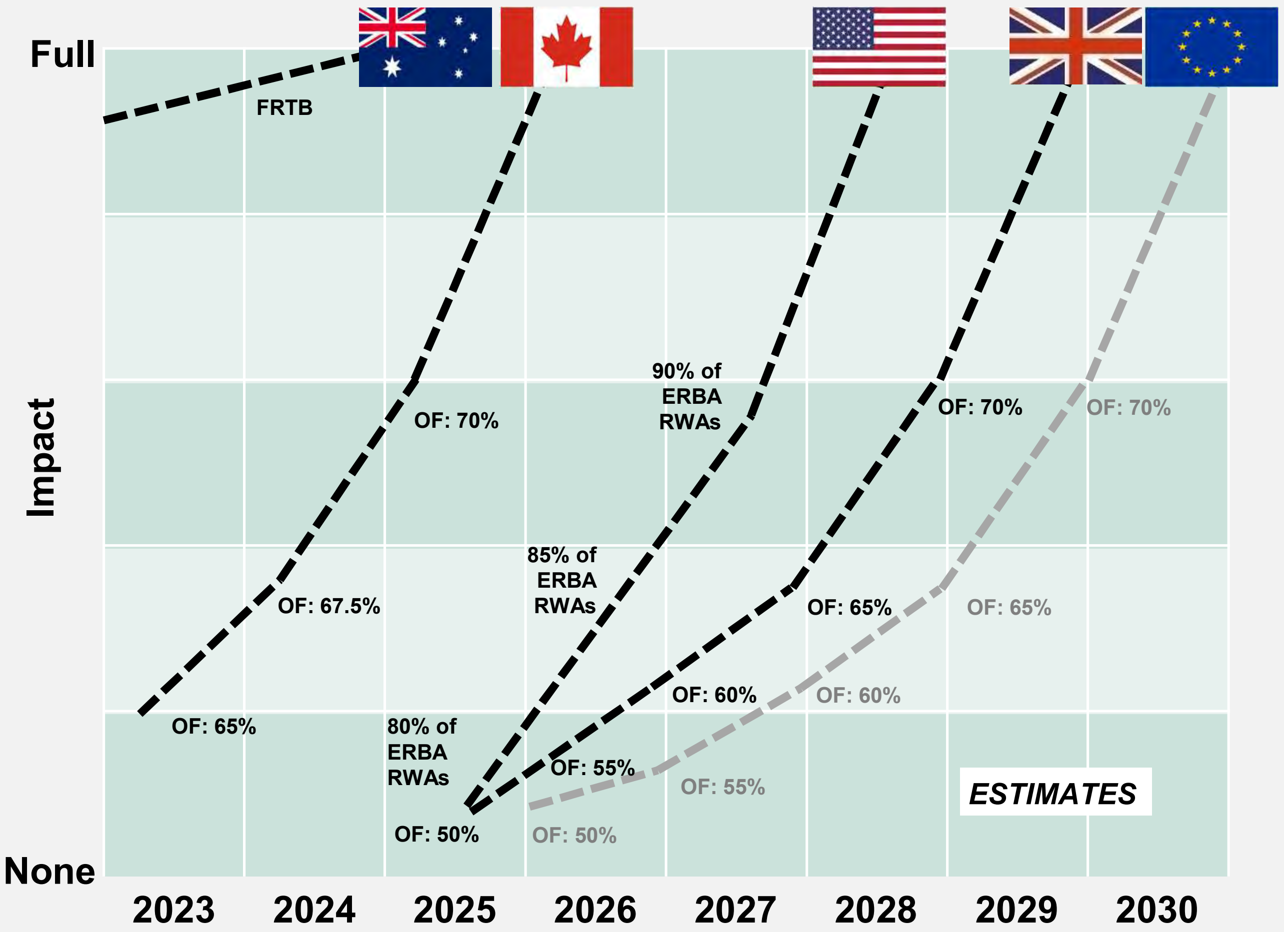
Capital allocation will shift from advanced to SA



Source: US regulatory agencies' NPR, 27 July 2023

Basel IV transition is long and varied

When will the impact of Basel IV be felt?



Source: Regulatory authorities (BCBS, APRA, OSFI, European Commission, FINMA, Bank of England, Federal Reserve), BNP Paribas
Note: EU lines assumes start of implementation on 1.1.26 rather than the current official aspiration of 1.1.25

- **Phased implementation for Basel IV gives banks time to adapt, avoids generating any market dislocations**
- **Is it true that Basel IV won't "really" apply until it is fully phased-in?**
- **Highly likely that market focus is on fully-loaded metrics**
- **"*Investors focus on fully loaded metrics as these are eventually the levels to which current ratios—on a phased-in basis—will naturally converge over time*" ***
- **Looking back to 2013, when Basel III was being transitioned, the pressure on banks was to manage their fully-loaded, rather than transitional, capital adequacy ratio:**

** Source: "Usability of Bank Capital Buffers: The Role of Market Expectations", José Abad and Antonio García Pascual, IMF, January 2022*


Add your own sauce to hide the taste

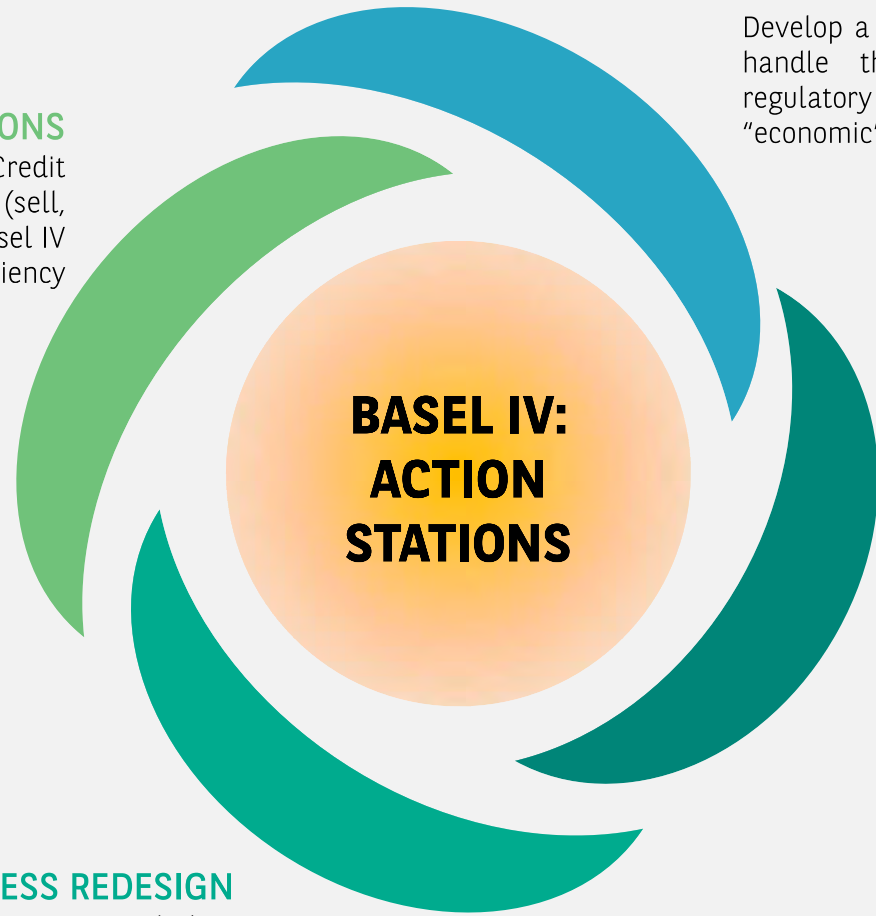
We call banks to Basel IV Action Stations

CPM ACTIONS

Take strategic and tactical Credit Portfolio Management actions (sell, hedge, bypass) to improve Basel IV balance sheet efficiency

CAPITAL KEY

Develop a capital allocation methodology that can handle the Basel IV misalignment between regulatory capital requirements and underlying "economic" risk



BUSINESS TRIAGE

Re-appraise business segments through the new Basel IV lens, identifying new "stars" and new "dogs"

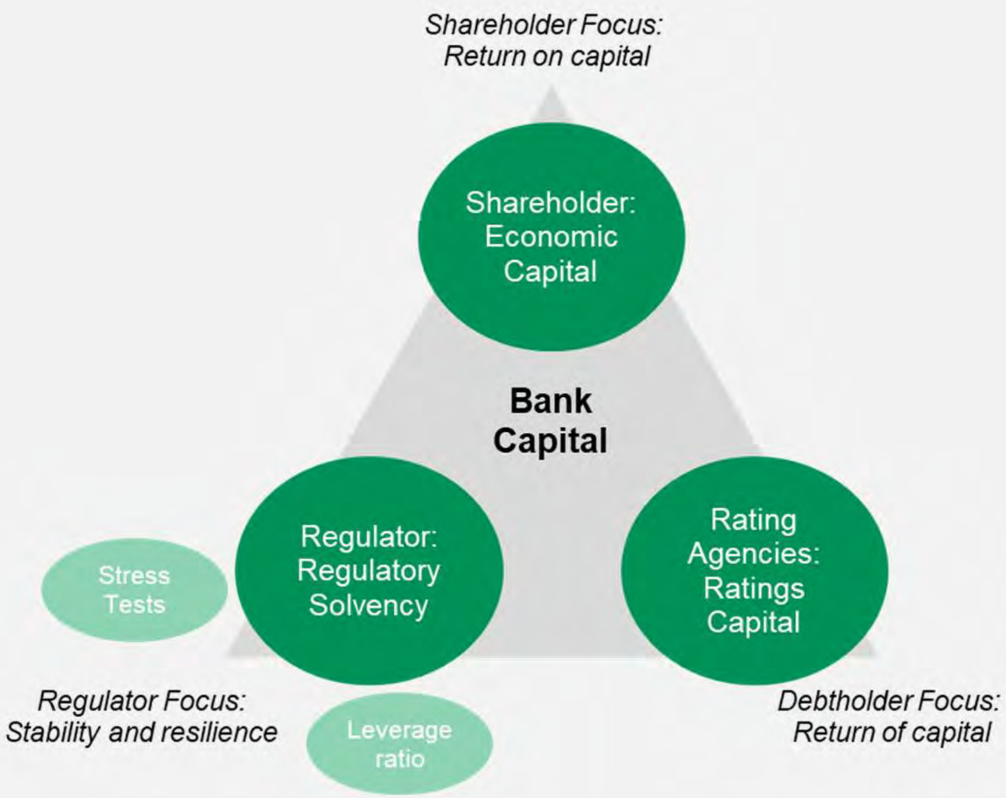
BUSINESS REDESIGN

Adapt business strategy, including modifying product features to fit with new Basel IV regulations

Source: BNP Paribas

Capital allocation strategy to deal with Basel IV misalignments

Bank stakeholders and capital

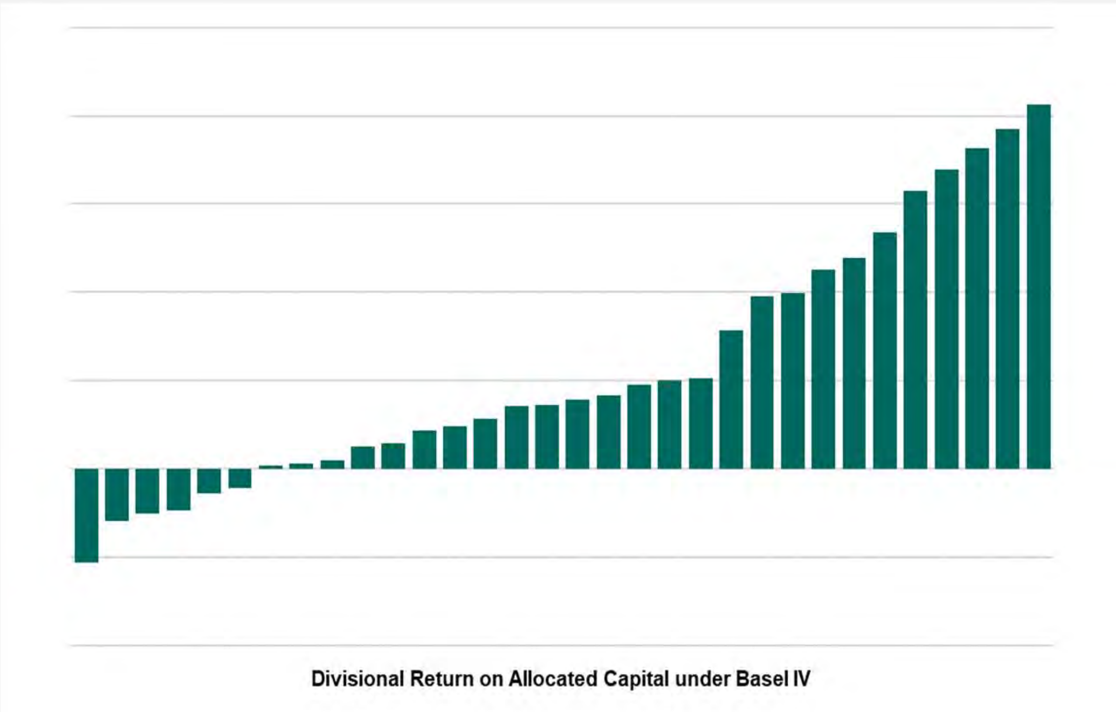


Capital allocation under multiple capital constraints

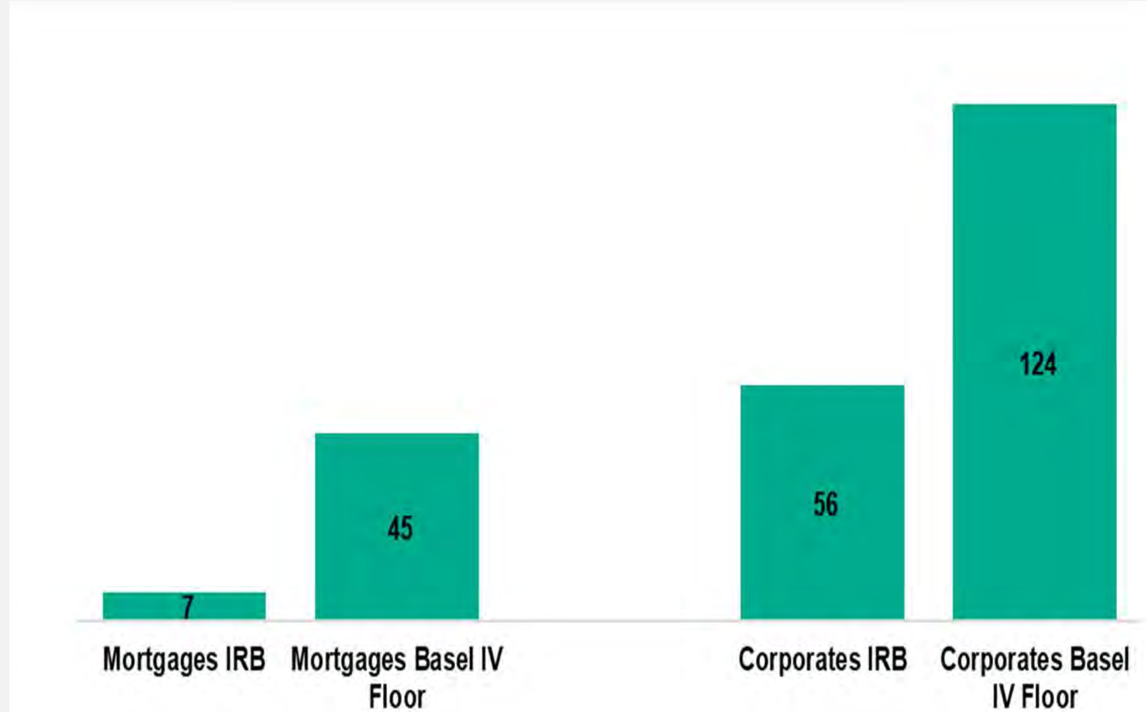
- Banks' capital can be allocated in ways that meet the objectives of regulators, debt holders and shareholders
- Risk appetite framework aligns perspectives (eg. through a target credit rating)
- Capital allocation challenge: address misalignment of regulatory capital vs. underlying "economic" risk caused by Basel IV distortions
- New information dashboards to show capital consumption under the new capital metrics
- Banks choose approach for capital allocation key (eg. using Economic Capital vs. standardised vs. greater of the two)
- Portfolio effects and dynamic perspective also relevant (eg. "muck spread" or "first come, first served" principle?)

Business Triage to re-appraise business segments through Basel IV lens

Illustration: Business profitability ranking



Basel IV Increases Cost-of-Capital for low risk assets (bp)



Source: BNP Paribas Bank Advisory Client Briefing Note: Basel IV Action Stations 23 August 2023

Business Redesign adapts strategy and products

(ILLUSTRATIONS)

Data Capture	**A "quick win" for banks, ensuring exposures get the right treatment under the SA** eg. Borrower turnover levels, external ratings for corporate borrowers, collateral values, transactor indicator for revolving retail
Collateral practices	**Standardised assumptions on LGD, eligible collateral and haircuts.** Re-consider lending practices to get "better" collateral; or cut collateral requirements (and increase pricing) if they no longer have a regulatory benefit
Off-BS exposures	**Standardised CCF assumptions can be bad or good** Pull or reprice well-modelled lines; but conservatively modelled CCFs may see lower regulatory capital requirements, improving attractiveness
External ratings	**Corporate credit ratings matter under SA outside US** Help larger unrated corporates obtain external ratings. For mid-market commercial lending, we expect new ECAIs with low cost service
Mortgage LTVs	**SA RWs are driven by LTV** Increase role of LTV is loan decisions. De-emphasise low-risk, high LTV mortgages; likewise, add higher risk, low LTV mortgages
Credit Cards	**Preferential SA RW for "transactors"** Changes to product design, eg. rewards to customers who clear their balances regularly However, the credit card business is not heavily reliant upon capital efficiency but rather marketing, margins and collections
Maturity	**Maturity is crudely assigned under SA/FIRB** In some cases, shorter-term lending will be less attractive, longer-term lending more capital efficient, with opportunity to capture increased margins through more term risk
Pricing	**Regulatory capital consumption changes!** Products, segments and businesses will see pricing shifts. Portfolio effects from floors will impact business strategy and business line plans

CPM Actions: Strategically improve Basel IV balance sheet efficiency


Doggy bag please!

Basel IV pushes low-risk exposures into the capital markets

Credit will migrate to shadow banking

- The cost of financing exposures on-BS has risen due to ever-increasing reg-cap requirements and high cost-of-equity
- *"Do [regulators] want banks ever to be investable again?" **
- At the same time, credit assets are attractive investments
- The Basel IV effect is skewed towards certain low-risk customers, products and businesses
- We believe the majority of banks will be impacted by Basel IV

*Source: * Jamie Dimon, JP Morgan, quoted in the FT, 11 September 2023*

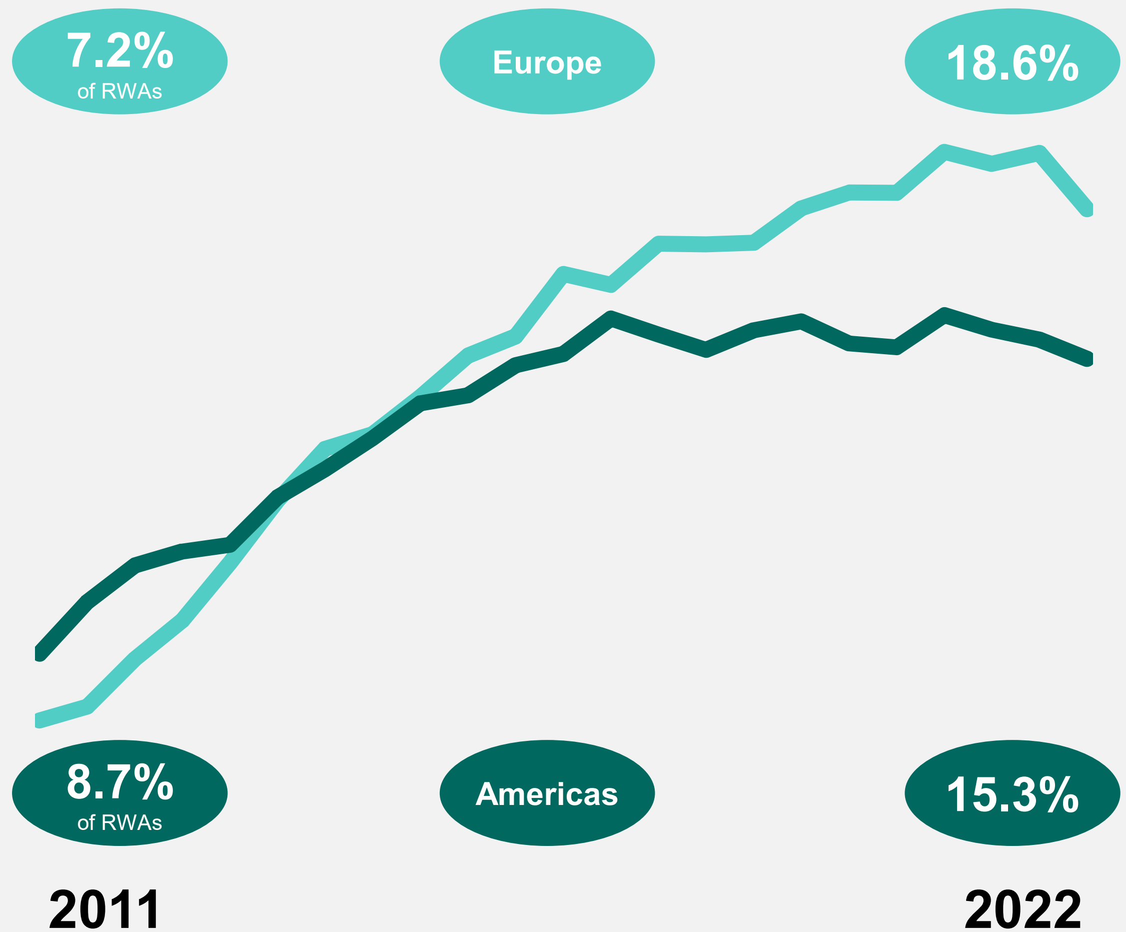
Credit migration could reach 8% or nearly €2tn

Loans driven off-BS	Corporate Loans		Mortgages	
Jurisdiction	*Proportion*	*Volume, €bn*	*Proportion*	*Volume, €bn*
🇺🇸	5%	500	7%	200
🇪🇺	6%	300	11%	400
🇨🇦	9%	150	11%	100
🇬🇧	6%	50	11%	200
🇦🇺	-	-	-	-
Total	6%	1,000	9%	900

Source: BNP Paribas estimates and assumptions

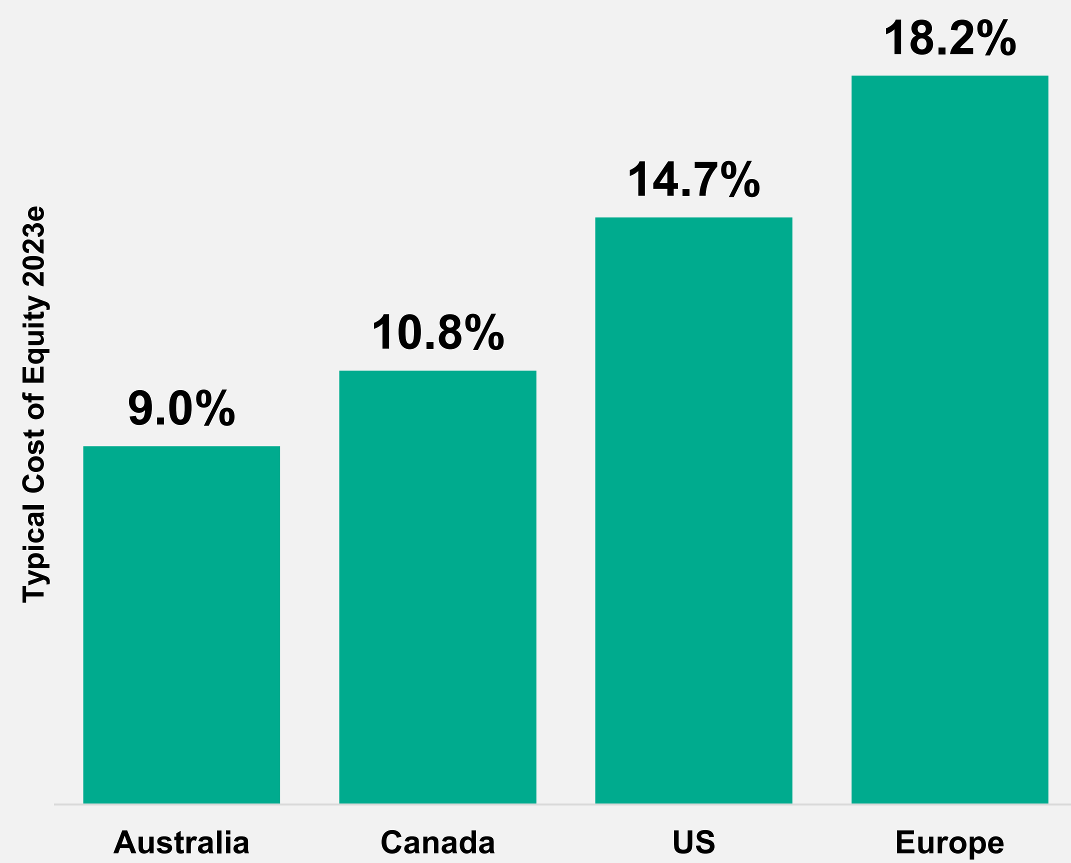
Bank equity is rising and the cost is high

Regulatory Capital Trends



Source: "Basel III Monitoring Report", Basel Committee, February 2023

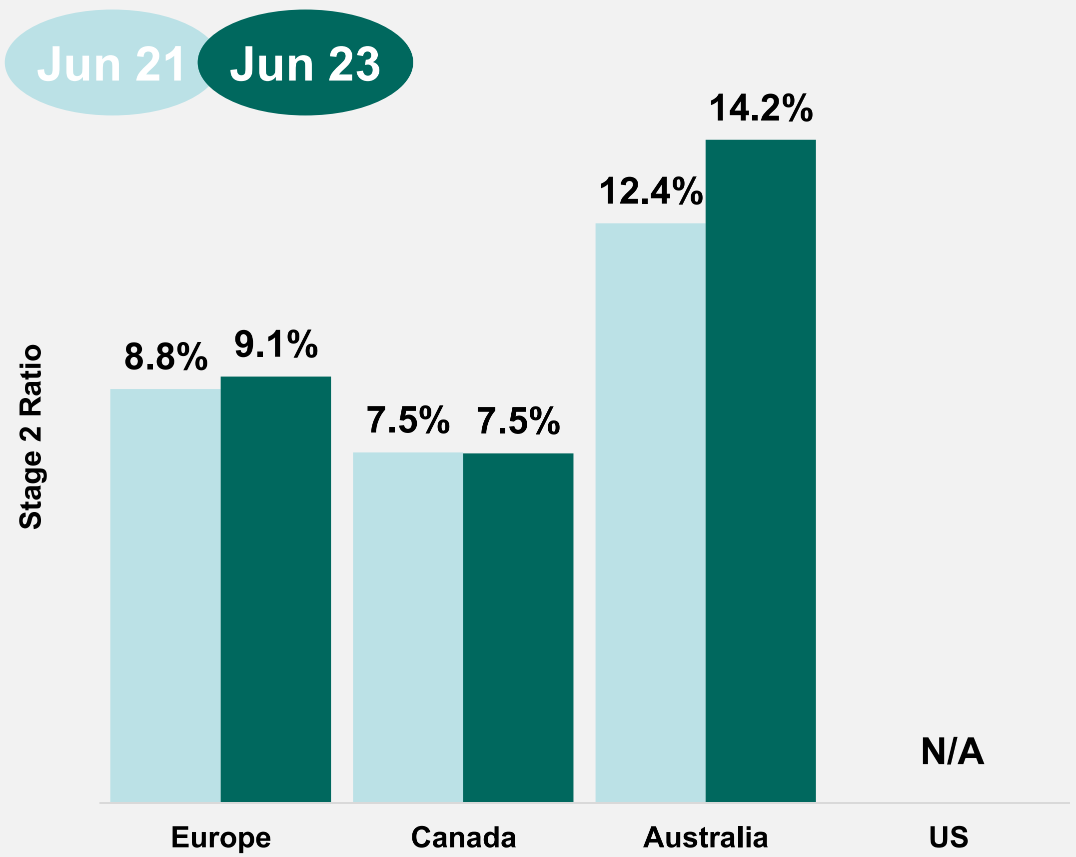
Bank equity is expensive



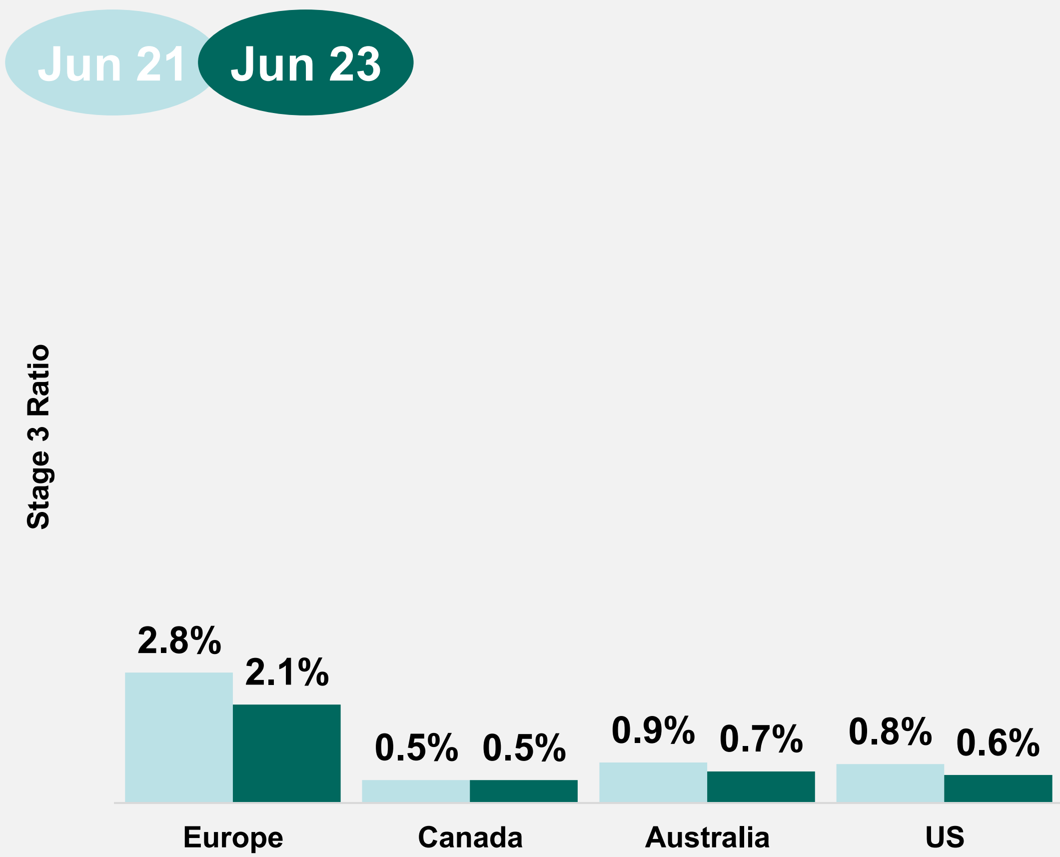
Source: Bank financial reporting; BNP Paribas estimates and assumptions; Data as of 25th October 2023
Sample contains are 1 large bank from each jurisdiction, except Europe where sector average is used

Credit quality remains strong

Stage 2 ratios are not high but are ticking up



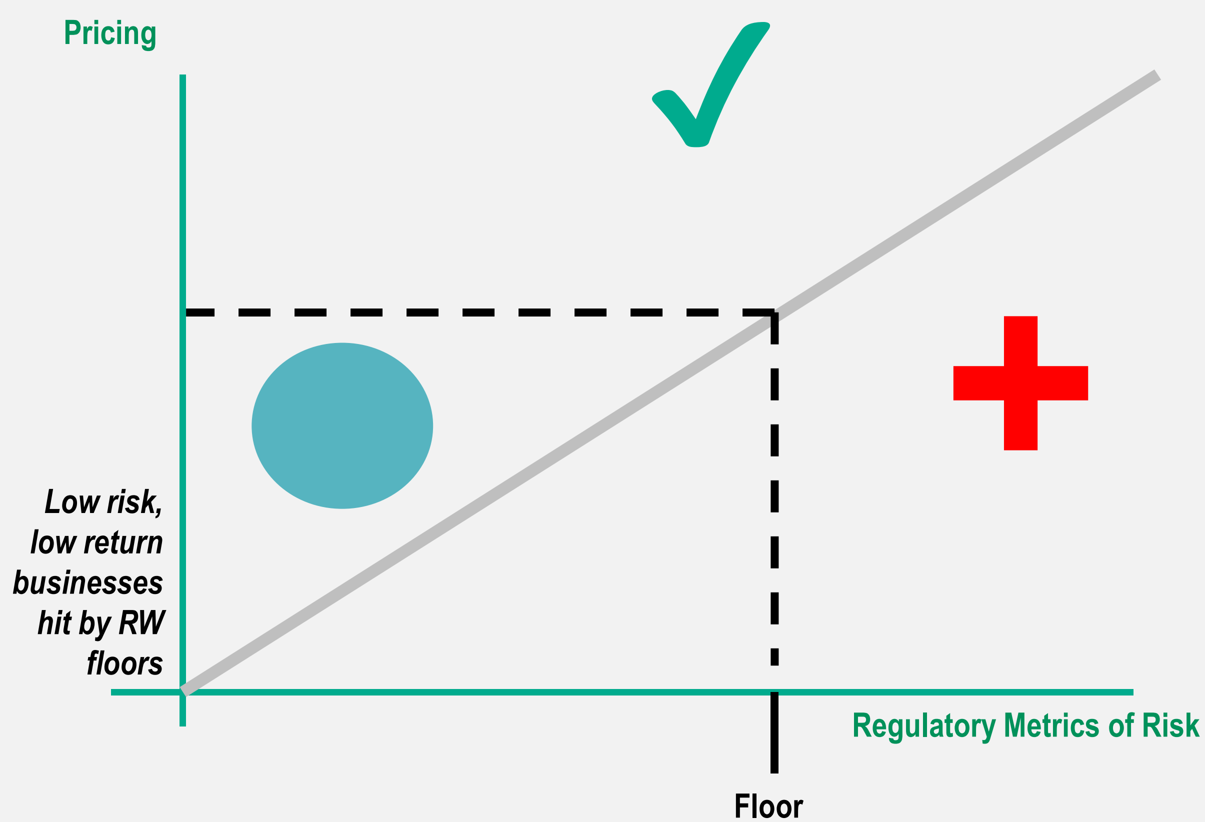
NPLs are low and still falling



Source: EBA risk dashboard; BNP Paribas estimates and assumptions. Europe average is 164 banks from EBA Risk Dashboard, Canada average is 7 large banks, US average 3 large banks , Australia average is 2 large banks

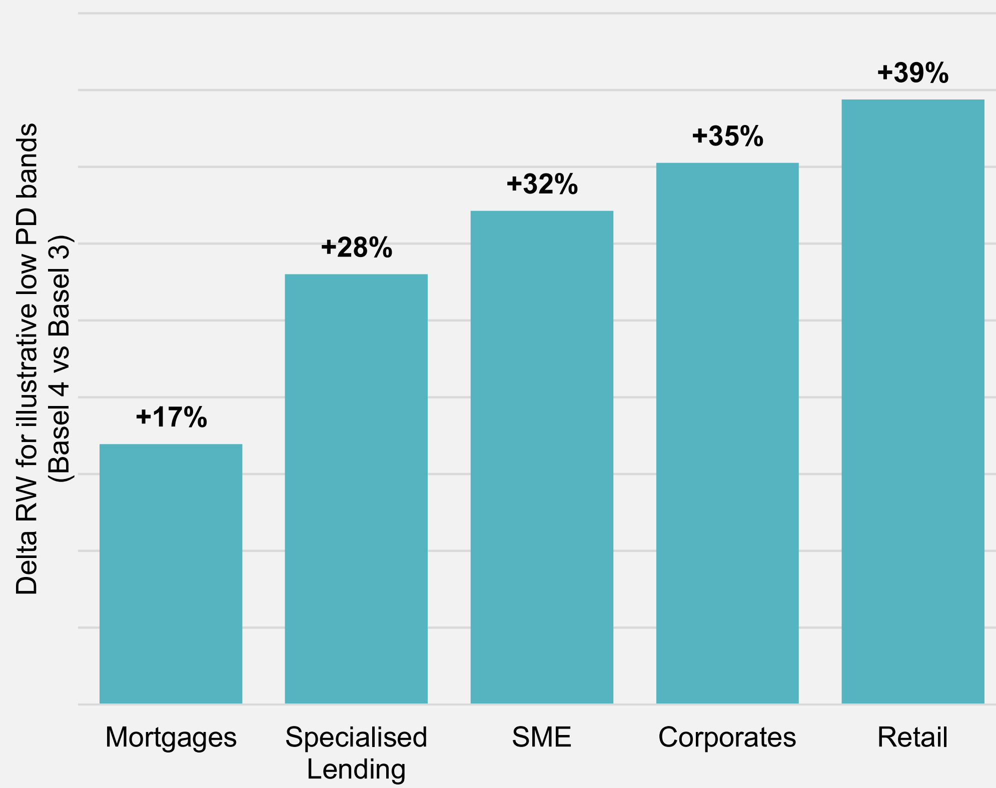
Basel IV distortions will make low risk businesses uneconomic

Distorting Impact of Basel IV



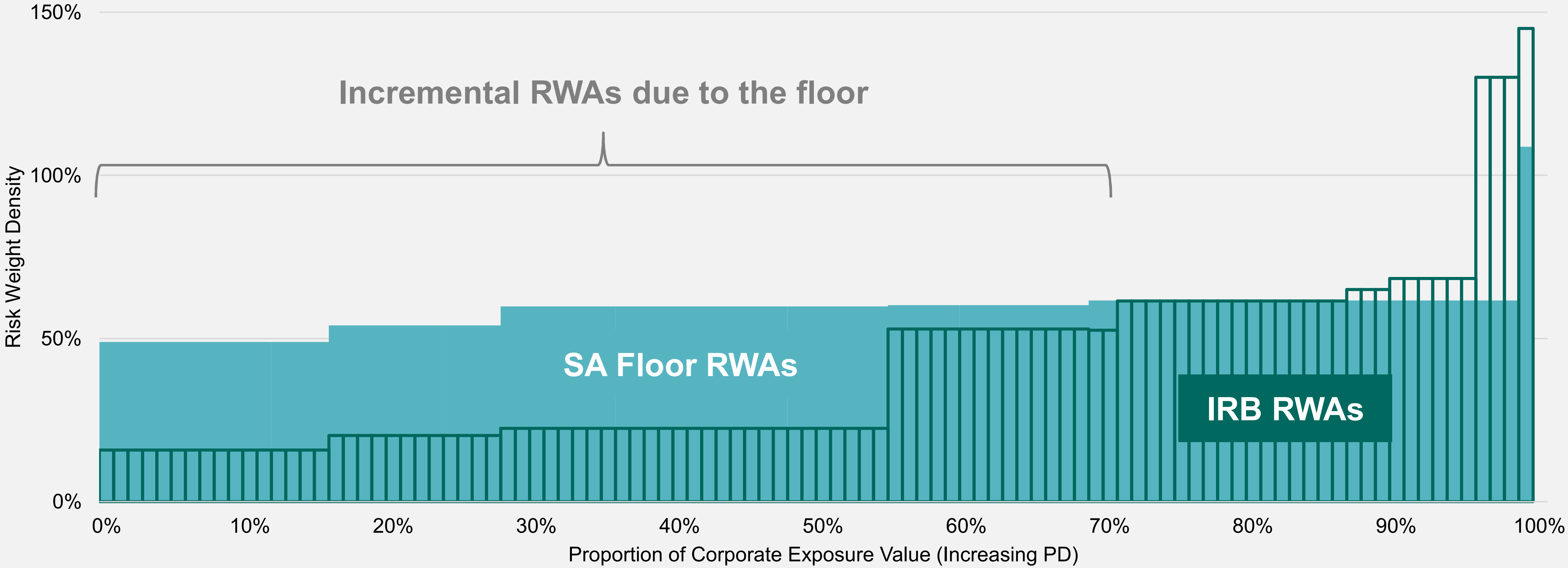
Source: BNP Paribas

Basel IV RW Impact (typical low risk exposure)



Capital requirements are skewing

Illustration: Standardised Basel IV floors are skewing capital requirements



Source: Bank financial reporting; BNP Paribas estimates and assumptions

Floors will increase capital requirements for low risk lending businesses

RETAIL	Retail lending faces substantial RW increases across most product types
CORPORATE	Unrated, low risk corporate lending faces large RW increases
CRE	CRE loans with higher LTVs and/or of highest quality face significant increases in RW
SPECIALISED FINANCE	High quality specialised finance loans face significant increases in RW
RESIDENTIAL MORTGAGES	Low risk and high LTV residential mortgage lending face RW increases

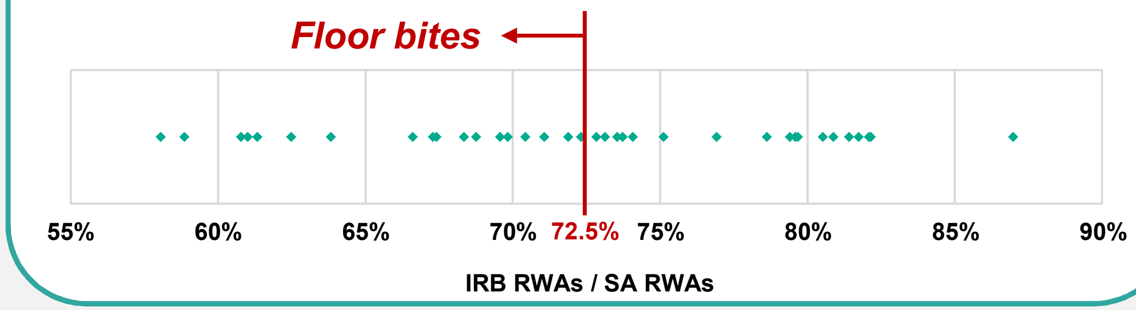
Standardised metrics will impact European, Canadian and US banks

The full 72.5% floor is live in Australia, and none of the large domestic banks are impacted

A transitional 65% floor is live in Canada, one of the large banks is already affected. More banks may be impacted as the floor rises to 72.5%

The 72.5% floor in the US is effectively irrelevant and ERBA is effectively a 100% SA floor for all

In Europe, half of large banks will be impacted by the 72.5% floor



Source: BNP Paribas

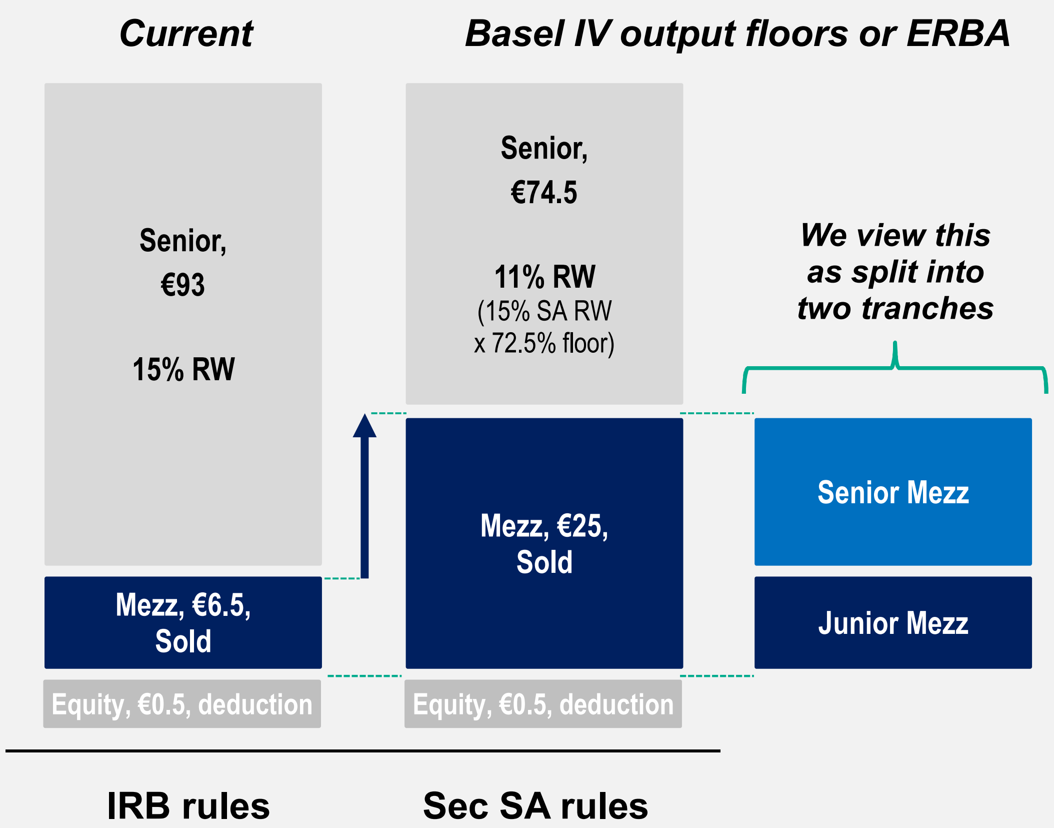
CPM Actions: Strategically improve Basel IV balance sheet efficiency

Hedge	**Risk Transfer** (“SRT”, “CRT”)	**Credit Insurance**	**CDS**
Sell	**Portfolio Sales**		
Partner	**Origination JVs** (Forward Flow Arrangements)		

SRT structures need a new "senior mezz" under Basel IV

Basel IV SRT requires far thicker tranches to be sold

ILLUSTRATION



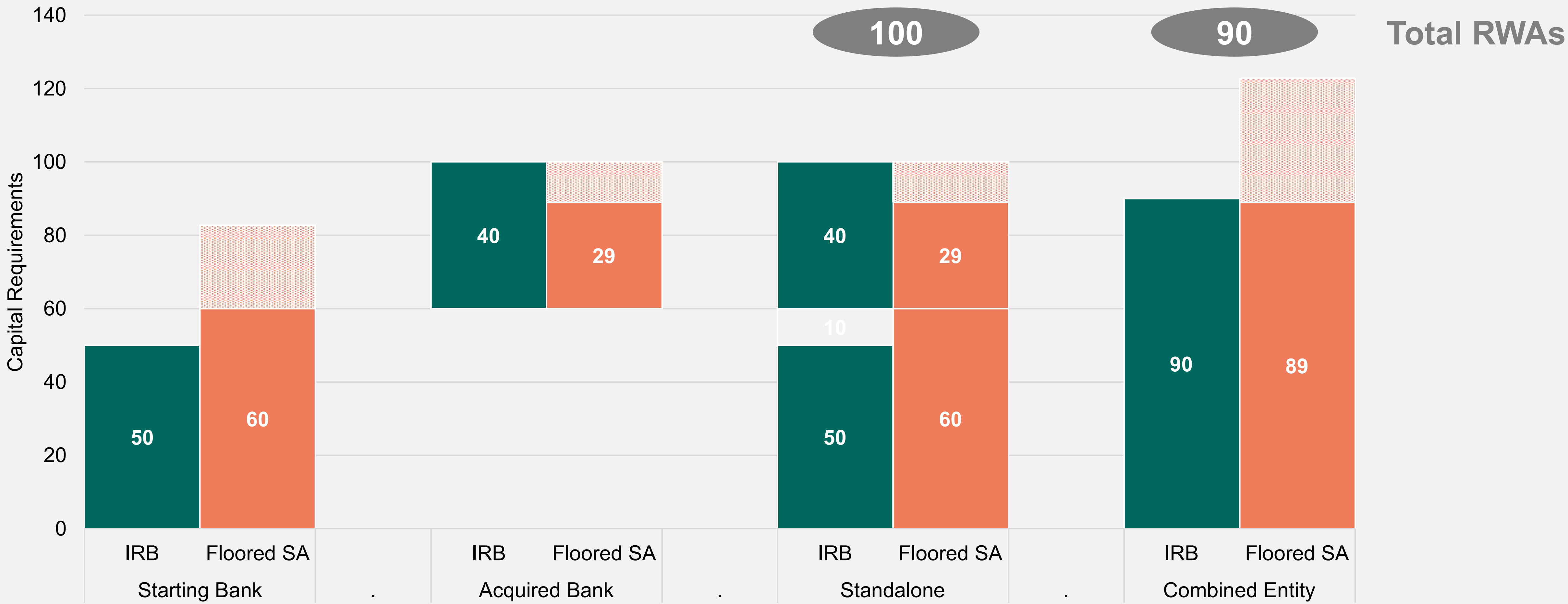
Source: BNP Paribas

How does Risk Transfer change under Basel IV?

- Basel IV RWA driven by SA/SEC SA floors (for some), ERBA
- IRB-based deals (eg. corp) may need to change: a thick mezz tranche needs to be sold to free up capital
- Thicker tranche = more cost, potentially mitigated via creation of "senior mezz" and/or use of external ratings
- Lower p-factors and synthetic STS reduce thickness of sold tranche
- Ratings-based (eg. consumer) mostly unchanged
- Future-proofing is a consideration
- Structuring of Basel IV compliant trades has already started (eg. Scotiabank deal)

Is Basel IV-driven M&A on the cards?

M&A can have capital synergies due to Basel IV output floors



Source: BNP Paribas

QUESTIONS OR COMMENTS?

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