CHARTA LEARNING · LESSON NOTES

Capital Planning at Large Banks

FRM Part II

1 A story: the plan that passed the numbers

- Stressed ratio stays above the minimum
- Promised: rising dividend, big buyback
- The Fed objects: losses ignore the scenario
- Models unchecked; board asked no questions
- A plan is judged on numbers and on process

IN THE LESSON

- Imagine Thornbury Bancorp sends in its capital plan.
- Its spreadsheets show that, even in a severe recession, its capital ratio stays above the minimum.
- The managers expect approval, and they have already promised shareholders a rising dividend and a large share buyback.
- Then the Federal Reserve objects.
- Why?
- When supervisors looked behind the numbers, the loss estimates did not move with the recession scenario.
- Several models had never been checked by anyone independent, and the board had approved the plan without asking a single hard question.
- The ratios looked fine, but nobody could trust how they were produced.
- That is the heart of this lesson.
- A capital plan is judged on its numbers and on the process that makes them.

2 Capital, and why planning it matters

- Capital: owners' cushion that absorbs losses
- Ratio = capital ÷ risk-weighted assets (RWA)
- Sources: profits and new shares
- Uses: losses, dividends and buybacks
- Plan: enough capital in bad times; payouts

IN THE LESSON

- First, some words.
- Capital is the cushion of the owners' money that absorbs losses, so that depositors and other creditors are protected.
- A capital ratio divides that capital by risk weighted assets, or R W A, which are the firm's assets weighted by how risky they are.
- A safe government bond carries a low weight, and a risky corporate loan a high one.
- Capital comes in from profits and from issuing new shares.
- It goes out through losses, and through distributions to shareholders, which means dividends and share buybacks.
- Capital planning is the forward looking process of matching those sources and uses, so that the firm keeps enough capital even in bad times.
- Its hardest question is how much the firm can safely pay out.

3 The Capital Plan Rule

- Covered large US BHCs: a plan every year
- Horizon: 9+ quarters, from quarter before submission
- Fed may object: quantitative or qualitative
- An objection restricts dividends and buybacks
- Rule as set out in the reading (later amended)

IN THE LESSON

- Now the regulation.
- The Federal Reserve's Capital Plan Rule requires each covered large United States bank holding company to submit a capital plan every year.
- The plan looks ahead over a planning horizon of at least nine quarters, and the horizon starts with the quarter before the one in which the plan is submitted.
- The Federal Reserve reviews the plan, and it may object to it.
- An objection can rest on quantitative grounds, meaning the numbers, or on qualitative grounds, meaning the process behind them.
- If it objects, the firm's planned distributions, such as dividends and share buybacks, are restricted.
- So the rule ties the firm's freedom to pay its shareholders to the quality of its planning.
- Note that this is the rule as set out in the reading.
- It has since been amended, but the reading's version is the one to learn.

4 Example 1: counting the nine quarters

Thornbury submits its plan in quarter 2 of Year 1. Find the horizon

Submission quarter	given	**Y1 Q2**
Horizon starts	the quarter before	**Y1 Q1**
Year 1, Q1 to Q4	4 quarters	**4**
Year 2, Q1 to Q4	4 + 4	**8**
Year 3, Q1	the ninth quarter	**Y3 Q1**

Trap: counting from Y1 Q2 would end the horizon at Y3 Q2

IN THE LESSON

- Let us count the horizon for Thornbury.
- It submits its plan in quarter two of year one.
- That is the submission quarter.
- The horizon starts with the quarter before submission, which is quarter one of year one.
- Year one, quarters one to four, gives four quarters.
- Year two adds four more, so eight.
- The ninth quarter is quarter one of year three.
- So the shortest horizon allowed runs from quarter one of year one to quarter one of year three.
- The trap is to start counting from the submission quarter itself, which would end the horizon one quarter late, in quarter two of year three.
- A firm may choose to look further ahead, but never less than nine quarters.

5 What the plan must show: the numbers

Projected over the whole horizon

Item	What it shows
Sources and uses of capital	Capital in and out
Revenues and expenses	Earnings before losses
Losses and reserves	Loans and other exposures
Pro forma capital	Ratios after all flows

IN THE LESSON

- What must the plan contain, projected over the whole horizon?
- Start with the numbers.
- It must show the expected sources and uses of capital: what will come in, and what will go out.
- It must project revenues and expenses, which together give earnings before any losses.
- It must project losses, on loans and on other exposures, and the reserves set aside to cover them.
- And it must show pro forma capital, meaning the capital and capital ratios the firm would have after all of these flows.
- Pro forma simply means projected as if the assumptions came true.
- Every one of these projections is made under more than one scenario, and the scenarios are our next point.

6 Scenarios, process and policy

Three parts: projections, process and policy

Item	What it covers
Expected scenario	The baseline view
Stress scenarios	Fed-supplied and BHC-designed
Capital adequacy process	How adequacy is assessed
Capital policy	Targets and payout rules

IN THE LESSON

- The projections are run under an expected scenario, which is the firm's baseline view of the economy, and under stress scenarios.
- Some stress scenarios are supplied by the Federal Reserve, so every firm faces the same test, and others are designed by the B H C itself.
- Beyond the numbers, the plan must describe the firm's process for assessing its capital adequacy, meaning how it decides whether it has enough capital for its risks.
- And it must set out the capital policy, the written rules for capital targets and for paying out dividends and buybacks.
- So a plan has three parts: projections, the process that produced them, and the policy that turns them into decisions.

7 Projecting capital through a scenario

Capital_{end} = Capital_{start} + Net revenue − Losses − Payouts
Capital ratio = Capital_{end} ÷ RWA_{end}

Net revenue	Revenues less expenses
Losses	Loan losses and reserve build
Payouts	Dividends and buybacks
Risk-weighted assets	Move with the scenario

IN THE LESSON

- Here is the arithmetic behind pro forma capital, in simplified form, treating all amounts as after tax.
- Capital at the end of the horizon equals capital at the start, plus net revenue, minus losses, minus payouts.
- The capital ratio is the ending capital divided by the ending risk weighted assets.
- Now the terms.
- Net revenue is revenues less expenses, earned before any credit losses.
- Losses include loan losses and any build up of reserves for future losses.
- Payouts are the planned dividends and buybacks.
- And risk weighted assets are not fixed.
- They move with the scenario and with the firm's strategy, and we will see later why that matters.
- A stress squeezes the ratio from both ends: less capital on top, and possibly more R W A below.

8 Example 2: Thornbury's stress projection

Start: capital $40bn, RWA $400bn. Stress: net revenue 12, losses 22, payouts 6 ($bn)

Starting ratio	40 ÷ 400	**10.0%**
Ending capital	40 + 12 − 22 − 6	**$24bn**
Ending RWA	rises under stress	**$420bn**
Ending ratio	24 ÷ 420	**5.7%**
Assumed minimum	for this example	**5.0%**

IN THE LESSON

- Now Thornbury's numbers, all made up.
- It starts with capital of forty billion dollars against risk weighted assets of four hundred billion, a ratio of ten per cent.
- Over nine quarters of the stress scenario, it projects net revenue of twelve billion, losses including reserve build of twenty two billion, and planned payouts of six billion.
- Ending capital is forty plus twelve, minus twenty two, minus six, which is twenty four billion.
- Risk weighted assets rise to four hundred and twenty billion, as stressed borrowers draw on their credit lines.
- The ending ratio is twenty four over four hundred and twenty, about five point seven per cent.
- Suppose the minimum that applies is five per cent.
- Thornbury stays above it, so on the numbers alone the plan passes.

9 When the Fed objects

- Quantitative: ratios below minimums
- Qualitative: weak process or governance
- Then: dividends and buybacks restricted
- Can fail on process, ratios above minimums
- Would it know its needs in another crisis?

IN THE LESSON

- The Federal Reserve can object for two kinds of reason.
- A quantitative objection is about the numbers: under stress, the firm's projected ratios would fall below the minimums.
- A qualitative objection is about the process: the way risks were found, losses estimated, models controlled or the plan governed is not good enough to trust.
- Either way the consequence is the same.
- The firm's planned distributions, its dividends and buybacks, are restricted.
- This is the key exam point for the rule.
- A plan can fail on process even when every projected ratio is above the minimum.
- Supervisors are not just checking arithmetic.
- They are asking whether the firm would really know how much capital it needs if the next crisis looked different from the scenario.

10 Example 3: Thornbury's verdict

Stressed ratio 5.7% vs an assumed 5% minimum. Does the plan pass?

Quantitative test	5.7% > 5.0%	**Pass**
Losses linked to scenario?	flat, whatever happens	**No**
Models validated?	several never checked	**No**
Board challenge?	approved, no questions	**No**
Fed decision	qualitative grounds	**Objection**

Payouts of $6bn restricted: capital $30bn, ratio 30 ÷ 420 = 7.1%

IN THE LESSON

- Back to Thornbury.
- On the quantitative test, its stressed ratio of five point seven per cent clears the assumed minimum of five per cent, so it passes.
- But supervisors then look at the process.
- Are the loss estimates linked to the scenario?
- No: the loss rates stay flat, whatever the economy does.
- Are the models validated?
- No: several were never checked by anyone independent.
- Did the board challenge the plan?
- No: it approved it without asking questions.
- The Federal Reserve objects on qualitative grounds, and the rising dividend Thornbury promised is off.
- Its planned payouts of six billion dollars are restricted.
- If they are held back, ending capital would be thirty billion, and the stressed ratio thirty over four hundred and twenty, about seven point one per cent.

11 Seven principles: producing the numbers

The first four of the seven principles

Principle	What it asks
Sound risk management foundation	All risks found?
Effective loss estimation	Losses fit the scenario?
Solid resource (revenue) estimation	Revenues fit the scenario?
Capital adequacy impact	Capital, RWA, balance sheet

IN THE LESSON

- Behind the rule sits a supervisory paper that describes the range of current practice and sets out seven principles of an effective capital adequacy process.
- Here are the first four of the seven principles.
- The first is a sound risk management foundation: has the firm found and measured all its material risks?
- The second is effective loss estimation: are the loss estimates credible, and do they move with the scenario?
- The third is solid resource estimation, meaning revenues and other sources of capital: are they projected credibly under the same scenario?
- The fourth is the capital adequacy impact assessment, which covers the effect on capital and also on risk weighted assets and the balance sheet.
- These four principles are about producing the numbers, and producing them well.

12 Seven principles: policy, controls and oversight

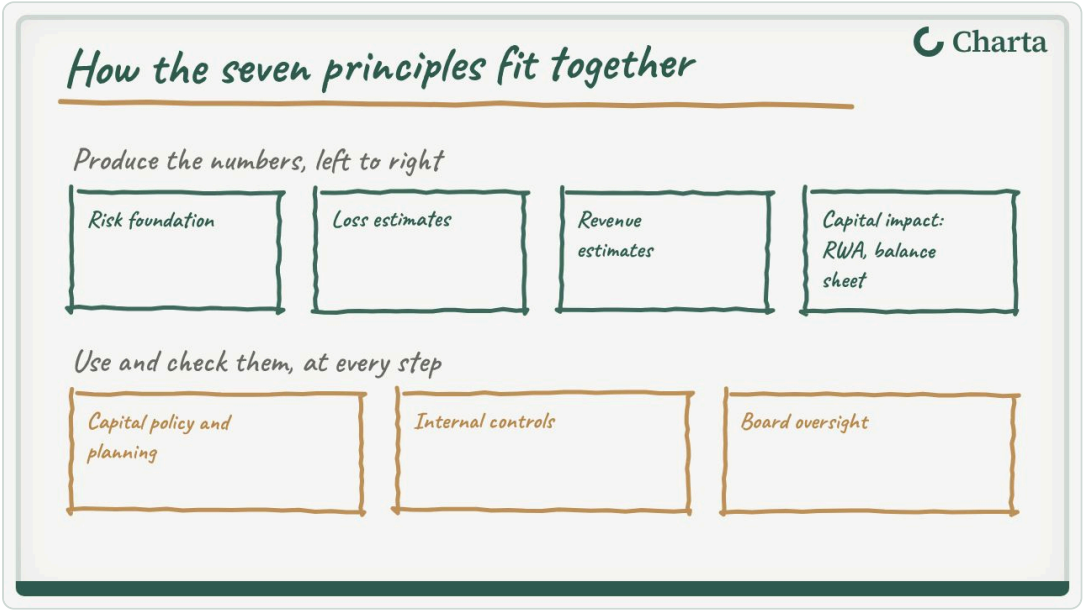
The last three: using and checking the numbers

Principle	What it asks
Capital policy and planning	Goals and contingency plans?
Robust internal controls	Models, data, validation?
Board and management oversight	Board challenges, approves?

IN THE LESSON

- The last three principles are about using and checking the numbers.
- The fifth is a comprehensive capital policy and capital planning: a written policy with capital goals, and contingency plans saying what the firm will do if capital falls short.
- The sixth is robust internal controls: are the models, data and calculations checked, including independent review and validation of the models?
- The seventh is effective oversight by the board of directors and senior management: does the board really own the plan, reviewing it, challenging it and approving it, knowing its key assumptions?
- Notice that stress testing is not a principle of its own.
- It runs through the loss, resource and capital impact principles.
- And several of the seven are about process, not numbers.
- That is why a plan can fail on process.
- Supervisors look at all seven, and a weak link anywhere can bring an objection.

13 How the seven principles fit together



IN THE LESSON

- Here is one way to see how the seven fit together.
- The top row produces the numbers, and you read it from left to right.
- The risk management foundation identifies what could hurt the firm, and those risks shape the scenarios.
- Under each scenario the firm estimates its losses, and then its revenues.
- Together they give the capital impact, including risk weighted assets and the balance sheet.
- The bottom row uses and checks those numbers, and it is not a sequence: each of its boxes applies at every step above.
- The capital policy and planning turns the results into decisions on targets and payouts, with contingency plans.
- Internal controls check the models and data behind every figure.
- And board oversight reviews, challenges and approves the whole.
- A break anywhere undermines the final ratio, however reasonable it looks on the page.

14 Mistakes to avoid on the rule

- Ratios above minimums: no guaranteed pass
- At least 9 quarters, from quarter before
- Scenarios: Fed-supplied and the BHC's own
- Plan = projections, process and capital policy
- Objection hits dividends and buybacks

IN THE LESSON

- Before moving on, here are the traps on the rule itself.
- First, ratios above the minimums do not guarantee approval, because the Federal Reserve can object on qualitative grounds.
- Second, the horizon is at least nine quarters, and it starts with the quarter before submission, not with the submission quarter.
- Third, the plan uses both scenarios supplied by the Federal Reserve and scenarios the B H C designs itself, so relying only on the supervisor's scenario is not enough.
- Fourth, a plan is not just a set of projections.
- It must also describe the capital adequacy process and set out the capital policy.
- Fifth, the sanction for an objection falls on distributions: the planned dividends and buybacks are restricted.

15 Strong practice, area by area

- Judged area by area, from weak to strong
- Risk identification; controls, validation
- Governance; capital policy, contingency
- Stress testing; loss and revenue estimation
- RWA and balance sheet projections

IN THE LESSON

- Knowing the principles is one thing.
- Knowing what good looks like is another.
- Supervisors compare firms and see a range of practice, from weak to strong, and they judge it area by area.
- We will walk through the areas in turn, with Thornbury as the example of what to fix.
- First, risk identification, and then internal controls, including the review and validation of models.
- Next, governance, and the capital policy with its contingency planning.
- Then stress testing, and the estimation of losses and revenues.
- Last, the projection of risk weighted assets and the balance sheet.
- For each, ask the same question: does this piece really respond to the firm's own risks and to the scenario, or is it just a number on a page?

16 Risk identification

- Comprehensive: all material risks
- Combines bottom-up and top-down views
- Covers risks that models miss
- Drives the design of the firm's own scenarios
- Weak: only risks the models capture

IN THE LESSON

- Strong practice starts with risk identification, because a risk that is never found is never stressed.
- It is comprehensive, covering every material risk, not just the ones that are easy to measure.
- It combines a bottom up view, where each business line lists its own exposures, with a top down view, where senior managers look across the whole firm for concentrations and links.
- It covers risks that models miss, such as a large legal case, a concentration in one region, or a risk to the firm's reputation.
- And the risks it finds drive the design of the firm's own stress scenarios.
- Weak practice looks only at the risks the existing models already capture, so the scenario tests what is easy rather than what is dangerous.

17 Example 4: Thornbury's risk inventory

Risks found, and what strong practice does with each

Risk found	Treatment
Card and mortgage loans	Loss models by portfolio
Property loans in one region	Built into own scenario
Large pending lawsuit	Add-on: models miss it
Heavy short-term funding	Stressed in own scenario

IN THE LESSON

- Here is Thornbury's risk inventory after a better exercise.
- Its card and mortgage loans are covered by loss models, built portfolio by portfolio.
- A top down review finds that a large share of its commercial property loans sit in one region, so that concentration is built into the firm's own stress scenario, with a sharp regional fall in property prices.
- A large pending lawsuit is something no loss model captures, so it gets a separate add on estimate.
- And the review finds that Thornbury relies heavily on short term funding, which is stressed in its own scenario too.
- Notice how the inventory feeds the scenario.
- Thornbury's old plan had only the first row: the risks its models already measured.

18 Internal controls and model validation

- Independent validation of every model
- A complete model inventory
- Ongoing monitoring of model performance
- Findings tracked until fixed
- Weak: unvalidated models, findings left open

IN THE LESSON

- Capital numbers come out of models, so the next area is internal controls.
- In strong practice, every model that feeds the capital estimates is independently validated, meaning reviewed by people who did not build it and do not use it, to check that its theory, data and results make sense.
- The firm keeps a model inventory, a complete list of its models, what each is used for, and its validation status.
- Models are monitored on an ongoing basis, for example by comparing their predictions with actual results.
- And findings from validation and audit are tracked until they are fixed.
- Weak practice relies on models that were never validated, or on findings that stay open for years while the model keeps feeding the plan.

19 Example 5: Thornbury's model inventory

150 models feed Thornbury's capital estimates. How strong are controls?

Models feeding capital	in the inventory	**150**
Independently validated		**120**
Share validated	120 ÷ 150, so 30 unchecked	**80%**
Open validation findings		**40**
Of which overdue	10 ÷ 40	**25%**

IN THE LESSON

- Let us grade Thornbury's controls.
- Its inventory lists one hundred and fifty models that feed capital estimates.
- Only one hundred and twenty have been independently validated.
- That is one hundred and twenty over one hundred and fifty, or eighty per cent, so thirty models feed the plan with no independent check.
- Strong practice is every model.
- Validation has also raised forty findings that are still open, and ten of them are past their deadline, which is twenty five per cent of the open findings.
- Each of these is a qualitative weakness that supervisors can cite, even if the models turn out to be right.
- The fix is to validate the remaining thirty, starting with those that move capital most, and to close the overdue findings.

20 Governance

- Board reviews, challenges and approves
- Approves key assumptions, not just totals
- Gets enough information to challenge
- Senior management owns the process
- Weak: a rubber stamp, no real challenge

IN THE LESSON

- The next area is governance.
- In strong practice, the board of directors reviews the capital plan, challenges it and approves it, together with its key assumptions, not just the final totals.
- To challenge, the board needs enough information: the main assumptions, the weaknesses in the estimates, and how sensitive the results are to them.
- Senior management owns the process day to day and answers the board's questions.
- Weak practice is a rubber stamp: a board that receives a thick document the night before, asks nothing, and approves it.
- That was Thornbury's story.
- Supervisors look for evidence of real challenge, such as minutes showing the questions asked and the assumptions changed as a result.

21 Capital policy and contingency planning

- Capital goals set above regulatory minimums
- Triggers that set off action early
- Actions quantified, feasible under stress
- Not: raising equity at pre-stress prices
- Payout decisions tied to the goals

IN THE LESSON

- The next area is the capital policy.
- In strong practice, it sets capital goals above the regulatory minimums, so there is a buffer before the firm gets into trouble.
- It sets triggers, meaning ratio levels or other signals that set off action early, long before a minimum is reached.
- It lists contingency actions, the steps the firm would take if capital fell short, and each one is quantified, saying how much capital it would save, and feasible under stress.
- That rules out assuming that new shares can be sold at the prices they fetched before the stress.
- And the policy ties decisions on dividends and buybacks to those goals.
- Let us see both points with Thornbury.

22 Example 6: a trigger and its contingency actions

Goal 8%, trigger 7%, assumed minimum 5%. Stressed RWA $420bn

Stressed ratio with payouts	24 ÷ 420	**5.7%**
Below the 7% trigger?	5.7% < 7%	**Yes: act**
Cut dividend, suspend buybacks	2.5 + 3.5 saved	**$6bn**
Capital after both	24 + 6	**$30bn**
Ratio after both actions	30 ÷ 420	**7.1%**

IN THE LESSON

- Thornbury's new capital policy sets a goal of eight per cent and a trigger of seven per cent, both above the assumed minimum of five.
- Under the stress scenario, with its payouts, the ratio falls to twenty four over four hundred and twenty, five point seven per cent.
- That is below the seven per cent trigger, so the policy says act.
- The contingency actions are quantified.
- Cutting the dividend saves two and a half billion dollars.
- Suspending buybacks saves three and a half billion.
- Together that is six billion, so capital ends at thirty billion, and the ratio is thirty over four hundred and twenty, about seven point one per cent, back above the trigger.
- That is still below the eight per cent goal, so the policy would also plan to rebuild capital over time.
- Both actions are within the firm's own control, which makes them feasible under stress.

23 Example 7: equity at pre-stress prices

Raise $3bn of new equity. Share price $60 before stress, $30 in it

Shares needed at $60	3,000m ÷ 60	**50m**
Shares needed at $30	3,000m ÷ 30	**100m**
Shares needed, $30 vs $60	100 ÷ 50	**2 times**
Buyers in a crisis?	not assured	**Doubtful**

Prefer actions the firm controls; price any raise at stressed levels

IN THE LESSON

- Now a weak contingency action.
- Suppose Thornbury's old plan said it would raise three billion dollars of new equity if needed, and priced the shares at sixty dollars, their price before the stress.
- That needs fifty million new shares.
- But in the stress scenario its share price has halved, to thirty dollars.
- To raise the same three billion it would need one hundred million shares, twice as many, so existing shareholders give up a much larger share of the firm.
- Worse, in a real crisis there may be no buyers at any sensible price.
- An action that works only in good times is not a contingency plan.
- Strong practice prefers actions under the firm's own control, such as cutting payouts, and prices any capital raising at stressed levels.

24 Stress testing tailored to the firm

- Supervisory scenarios: the same for every firm
- Plus its own scenario on its weak spots
- Thornbury: property crash, funding squeeze
- Severe enough to hurt, plausible to act on
- Weak: copied or mild scenario

IN THE LESSON

- The next area is stress testing.
- Supervisory scenarios are the same for every firm, so they cannot capture each firm's particular weak spots.
- Strong practice adds scenarios tailored to the firm's own vulnerabilities.
- For Thornbury, that means a crash in property prices in the region where its commercial lending is concentrated, together with a squeeze on its short term funding.
- The scenario should be severe enough to hurt, but plausible enough that management will act on the results.
- Weak practice simply copies the supervisor's scenario and calls it the firm's own, or designs a mild one that the firm is sure to pass.
- Notice the link with risk identification: the risks found there should be the ones the scenario hits hardest.

25 Estimating losses and revenues

- Built portfolio by portfolio
- Each estimate responds to scenario variables
- Example: card losses rise with unemployment
- Revenues respond too: margins, volumes, fees
- Failure: a number not linked to scenario

IN THE LESSON

- Now the estimation of losses and revenues.
- Strong estimates are built portfolio by portfolio, because a credit card book, a mortgage book and a commercial property book behave differently.
- Each estimate responds to the variables in the scenario, such as unemployment, house prices, property prices and interest rates.
- For example, card losses rise as unemployment rises.
- Revenues must respond too: interest margins move with rates, loan volumes change, and fee income falls in a downturn.
- The most common failure, and a favourite exam point, is a number that is not linked to the scenario at all, such as a loss rate copied from last year, or a revenue line that keeps growing straight through a recession.

26 Example 8: linking card losses to unemployment

Card book $20bn. Loss 3% at 4% unemployment; +0.8 per extra point

Weak: flat loss rate	same in every scenario	**3.0%**
Weak: loss	3% × 20bn	**$0.6bn**
Strong: loss rate	3% + 0.8 × (10 − 4)	**7.8%**
Strong: loss	7.8% × 20bn	**$1.56bn**
Loss the weak plan misses	1.56 − 0.6	**$0.96bn**

IN THE LESSON

- Thornbury's credit card book is twenty billion dollars.
- Its old plan used a flat loss rate of three per cent over the horizon, the same in every scenario, giving losses of point six billion.
- A better model links the loss rate to unemployment.
- With unemployment at four per cent, the loss rate is three per cent, and each extra point of unemployment adds point eight of a point.
- In the stress scenario unemployment reaches ten per cent, six points higher.
- The loss rate is three plus point eight times six, which is seven point eight per cent, and the loss is one point five six billion dollars.
- The weak plan misses nine hundred and sixty million dollars of losses, from one portfolio alone.
- These sensitivities are made up for the example.

27 RWA and balance sheet projections

- Consistent with scenario and strategy
- Stress: lines drawn, credit worsens: RWA up
- Consistent with plans to keep lending
- Weak: shrinking assets to rescue the ratio
- Smaller RWA needs a credible plan

IN THE LESSON

- The last area is the projection of risk weighted assets and the balance sheet.
- Both must move consistently with the scenario and with the firm's strategy.
- In a stress, borrowers draw on their credit lines and their credit quality worsens, so risk weighted assets tend to rise, not fall.
- Projections must also be consistent with what the firm says elsewhere, for example its plan to keep lending to customers through a downturn.
- Weak practice assumes the balance sheet shrinks, which pushes risk weighted assets down and rescues the ratio on paper.
- Selling assets in a crisis is hard and costly, and it contradicts the strategy.
- So any smaller denominator must come from a credible, consistent plan, not a convenient assumption.

28 Example 9: shrinking RWA to rescue the ratio

Thornbury's stressed capital is $30bn after cutting payouts

Consistent: RWA $420bn	30 ÷ 420	**7.1%**
Weak: RWA cut to $360bn	30 ÷ 360	**8.3%**
Ratio gained on paper	8.3 − 7.1	**1.2 points**
RWA to shed in a crisis	420 − 360	**$60bn**

IN THE LESSON

- Suppose Thornbury's capital at the end of the stress is thirty billion dollars, after the payout cuts.
- With risk weighted assets rising to four hundred and twenty billion, as the scenario implies, the ratio is about seven point one per cent.
- Now suppose a weak plan assumes the firm cuts its risk weighted assets to three hundred and sixty billion.
- The ratio becomes thirty over three hundred and sixty, about eight point three per cent.
- That is about one point two percentage points gained on paper.
- But to get there, Thornbury must shed sixty billion dollars of risk weighted assets in the middle of a crisis, while also claiming to support its customers.
- Supervisors would treat this as weak practice, and so should you in the exam.

29 Mistakes to avoid: the weak signs

- Risks found only where models already look
- Unvalidated models; rubber-stamp board
- Equity assumed sold at pre-stress prices
- Only Fed's scenario; numbers not linked
- Shrinking RWA to rescue the ratio

IN THE LESSON

- Let us gather the weak signs, because exam questions usually describe one and ask you to spot it.
- Risks are found only where the models already look.
- Models feeding capital have never been validated, and the board acts as a rubber stamp.
- The contingency plan assumes equity can be sold at pre-stress prices.
- The firm runs only the supervisor's scenario, and its loss or revenue numbers are not linked to the scenario at all, which is the most common failure.
- And the projection shrinks risk weighted assets to rescue the ratio.
- Each of these can bring a qualitative objection, even when the projected ratios clear every minimum.
- When you see one in a question, name the area and the strong practice it falls short of.

30 Try three quick questions

1. A BHC submits in Q3 of Year 1. When does the 9-quarter horizon start and end?
   Answer: Starts Y1 Q2, the quarter before; the ninth quarter is Y3 Q2.
2. Capital $50bn; net revenue 10, losses 25, payouts 5; end RWA $550bn. Ratio?
   Answer: 50 + 10 − 25 − 5 = 30. 30 ÷ 550 = 5.5%.
3. Ratios stay above minimums, but loss estimates ignore the scenario. Can the Fed object?
   Answer: Yes, on qualitative grounds: dividends and buybacks restricted.

IN THE LESSON

- Now try three quick questions.
- Pause the video, think, then listen to the answers.
- Question one.
- A bank holding company submits its capital plan in quarter three of year one.
- When do the minimum nine quarters start and end?
- They start with the quarter before submission, quarter two of year one, and the ninth quarter is quarter two of year three.
- Question two.
- A firm starts a stress with capital of fifty billion dollars.
- Over the horizon, net revenue is ten billion, losses are twenty five billion and payouts five billion, and risk weighted assets end at five hundred and fifty billion.
- What is the ending ratio?
- Capital is fifty plus ten, minus twenty five, minus five, which is thirty billion, and thirty over five hundred and fifty is about five point five per cent.
- Question three.
- A plan's stressed ratios stay above every minimum, but its loss estimates ignore the scenario.
- Can the Federal Reserve object?
- Yes, on qualitative grounds, and planned dividends and buybacks are restricted.