Contingency Funding Planning

FRM Part II

1 A story: the plan in the drawer

- A rumour: depositors and wholesale lenders pull back
- The plan exists, but its stress test was too mild
- Collateral never delivered; the plan's owner has left
- Stress test and CFP: two halves of one process

IN THE LESSON

- Imagine Fernhill Bank on a Monday morning.
- A rumour spreads that it has made large losses.
- By lunchtime, large corporate depositors are moving money out, and lenders in the wholesale market, where banks borrow from other institutions, will not roll over their loans.
- The treasurer opens the contingency funding plan.
- It looks neat.
- But the stress test behind it assumed outflows only half as fast as the ones now arriving.
- The collateral it relies on was never delivered to the central bank, and the person named to run the plan left last year.
- The lesson of this story is that a stress test and a contingency funding plan are two halves of one process.
- The test says how big and how fast the drain could be.
- The plan says who does what, and when, to cover it.

2 What a liquidity stress test measures

- Run defined scenarios, such as a downgrade or a freeze
- How large: cash out, net of cash in
- How fast: when the cash leaves
- In which currencies the drain falls
- Usable buffer: what is left after stress haircuts

IN THE LESSON

- Start with the first half.
- A liquidity stress test asks what happens to a bank's cash under defined scenarios, meaning specific stories of trouble, such as a downgrade of the bank or a freeze in markets.
- It measures three things about the drain.
- How large: how much cash flows out, net of what flows in.
- How fast: when the cash leaves, day by day and week by week.
- And in which currencies, because a bank that is short of euros cannot always pay with dollars.
- Then it measures the other side, the liquidity buffer: the stock of cash and of assets that can quickly be sold or pledged.
- The question is how much of the buffer is still usable after haircuts.
- A haircut is the cut in value applied when an asset is sold or pledged for cash, and in stress haircuts get larger.

3 The plan is the response

- CFP: actions, owners and timing
- Its job: cover the shortfall the test reveals
- So the test sets the size and speed the plan must meet
- Survival horizon: how long the usable buffer lasts
- Below the board minimum? Faster actions or more buffer

IN THE LESSON

- Now the second half.
- The contingency funding plan is the response to what the stress test reveals.
- It lists the actions that would raise cash, the owner responsible for each action, and the timing of each one.
- Its job is to cover the shortfall, meaning the part of the drain that the usable buffer cannot meet.
- So the stress test sets the size and the speed that the plan must meet.
- A plan whose actions bring in plenty of cash, but only after the shortfall has arrived, does not work.
- One more term.
- The survival horizon is how long the bank can meet its stressed outflows from its usable buffer alone.
- If the survival horizon is shorter than the minimum the board has set, the plan needs faster actions or a bigger buffer.

4 Example 1: Fernhill's usable buffer

Fernhill's buffer at market value, with stress haircuts. Amounts in $m

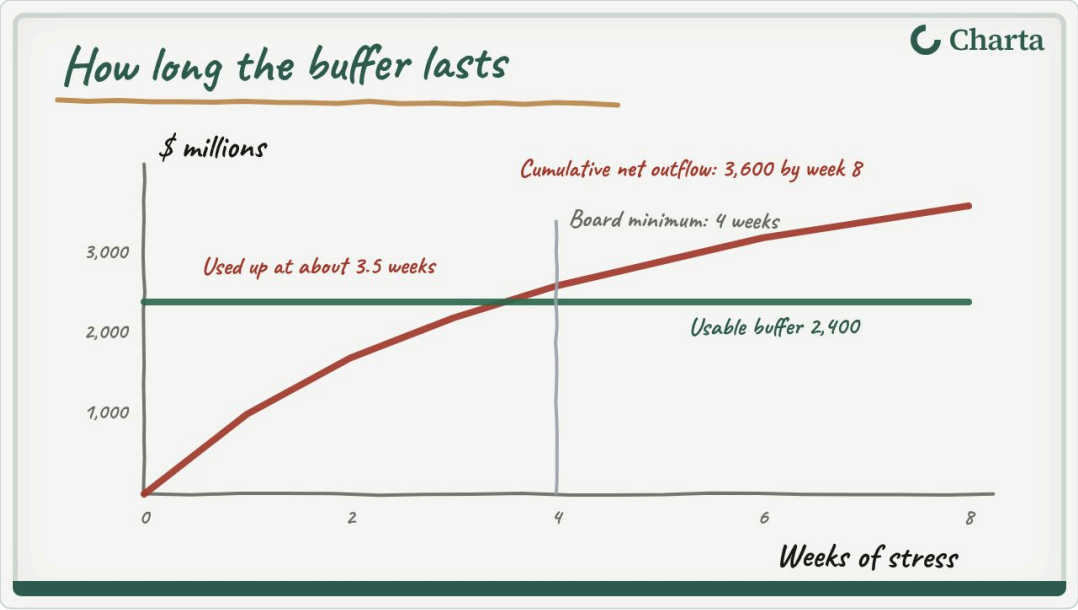
Cash at the central bank	500 × (1 − 0%)	**$500m**
Government bonds	1,250 × (1 − 4%)	**$1,200m**
Covered bonds	400 × (1 − 15%)	**$340m**
Corporate bonds	600 × (1 − 40%)	**$360m**
Usable buffer	500 + 1,200 + 340 + 360	**$2,400m**

Market value $2,750m; usable after stress haircuts $2,400m

IN THE LESSON

- Here is Fernhill's buffer at market value, with stress haircuts, in millions of dollars.
- Cash held at the central bank needs no haircut, so all five hundred million counts.
- Government bonds worth one thousand two hundred and fifty million take a stress haircut of four per cent, leaving one thousand two hundred million.
- Covered bonds, which are bank bonds backed by a pool of loans, are worth four hundred million and take fifteen per cent, leaving three hundred and forty.
- Corporate bonds worth six hundred million take forty per cent in stress, because buyers disappear, leaving three hundred and sixty.
- Adding up, the usable buffer is two thousand four hundred million dollars, against a market value of two thousand seven hundred and fifty.
- These haircuts are the ones expected in the stress scenario, not in calm markets.

5 How long the buffer lasts



IN THE LESSON

- Along the bottom are the eight weeks of Fernhill's combined stress scenario.
- Up the side is money, in millions of dollars.
- The red line is the cumulative net outflow, the running total of cash out minus cash in.
- It rises steeply at first, one thousand million in week one, then flattens, reaching three thousand six hundred by week eight.
- The green line is the usable buffer of two thousand four hundred.
- Where the red line crosses the green line, the buffer is used up.
- By the end of week three, two thousand two hundred has gone, and week four drains four hundred more.
- If week four drains evenly, the crossing comes half way through it, a survival horizon of about three and a half weeks.
- The grey line marks the board's minimum of four weeks.

6 Example 2: the horizon against the board minimum

Board minimum: survive 4 weeks on the buffer alone

Cumulative net outflow by week 4	1,000 + 700 + 500 + 400	**$2,600m**
Usable buffer, stress haircuts	from Example 1	**$2,400m**
Gap at the board minimum	2,400 − 2,600	**−$200m**
Buffer with calm haircuts	500 + 1,225 + 380 + 510	**$2,615m**
Calm haircuts suggest a pass	2,615 − 2,600	**+$15m**

Use stress-consistent haircuts: the $200m gap is real

IN THE LESSON

- Fernhill's board wants the bank to survive at least four weeks on its buffer alone.
- By the end of week four, cumulative net outflow is one thousand plus seven hundred plus five hundred plus four hundred, which is two thousand six hundred million.
- The usable buffer from Example one is two thousand four hundred.
- So at the board's minimum there is a gap of two hundred million dollars, which the plan must close.
- Now the trap.
- Suppose an analyst used calm market haircuts instead: two per cent on government bonds, five on covered bonds and fifteen on corporates.
- The buffer becomes five hundred, plus one thousand two hundred and twenty five, plus three hundred and eighty, plus five hundred and ten, which is two thousand six hundred and fifteen.
- That beats two thousand six hundred by fifteen million, so the bank seems to pass.
- It does not, because in stress haircuts widen.

7 Example 3: period by period, not in total

Actions: repo $300m from week 3, loan sale $800m from week 6, bond $300m in week 8

By week 8: 3,600 − 2,400	need 1,200; have 1,400	**+$200m**
By week 4: 2,600 − 2,400	need 200; have 300	**+$100m**
By week 5: 2,900 − 2,400	need 500; have 300	**−$200m**
By week 6: 3,200 − 2,400	need 800; have 1,100	**+$300m**

Covered in total, short in week 5: find $200m that arrives sooner

IN THE LESSON

- Fernhill's plan has three actions: a repo, which is a loan secured on securities, bringing three hundred million from week three, a loan sale bringing eight hundred million from week six, and a bond issue bringing three hundred million in week eight.
- By week eight, the need is three thousand six hundred minus the buffer of two thousand four hundred, one thousand two hundred, and the actions bring one thousand four hundred: covered, with two hundred to spare.
- Now go period by period.
- By week four, the need is two thousand six hundred minus two thousand four hundred, two hundred, and the repo has brought three hundred.
- By week five, it is two thousand nine hundred minus the buffer, five hundred, but only the repo has arrived, so the bank is two hundred million short.
- By week six, three thousand two hundred minus the buffer is eight hundred, and with the loan sale capacity is one thousand one hundred.
- Covered in total, short in week five: it needs two hundred million that arrives sooner.

8 Example 4: the link runs backwards

Loan book $1,000m. Plan assumed a 20% discount; stressed sales showed 30%

Planned sale proceeds	1,000 × (1 − 20%)	**$800m**
Proceeds at the observed discount	1,000 × (1 − 30%)	**$700m**
By week 6: have vs need	300 + 700 vs 800	**+$200m**
By week 8: have vs need	300 + 700 + 300 vs 1,200	**+$100m**
Extra loss vs the plan	800 − 700	**$100m**

IN THE LESSON

- The plan's loan sale assumed a one thousand million dollar loan book sold at a twenty per cent discount.
- When similar loans were sold in a stressed market, buyers demanded thirty per cent.
- That is the cost of a fire sale, a forced sale at a depressed price, and it must feed the next test.
- Proceeds fall from eight hundred to seven hundred million.
- By week six the bank has three hundred plus seven hundred, one thousand, against a need of eight hundred.
- By week eight it has three hundred plus seven hundred plus three hundred, one thousand three hundred, against one thousand two hundred, so the cushion halves from two hundred to one hundred.
- And the deeper discount costs one hundred million more than the plan assumed, a loss of three hundred million against book value.
- The stress test sizes the plan, and what the plan's actions really cost goes back into the stress test.

9 Mistakes to avoid: linking test and plan

- Comparing capacity with need only in total
- Valuing the buffer with calm-market haircuts
- A plan that ignores the test's speed or currency
- Never feeding action costs back into the test
- Exam point: period by period, stress haircuts

IN THE LESSON

- The first mistake is comparing the plan's capacity with the need only in total.
- Fernhill's plan was covered in total and still two hundred million short in week five.
- The second is valuing the buffer with calm market haircuts, which made Fernhill seem to pass its four week minimum when it did not.
- The third is a plan that ignores what the test says about speed or currency, for example relying on dollars to meet a drain in euros.
- The fourth is never feeding the cost of actions back into the test, as with the deeper fire sale discount.
- So the exam point is this: compare capacity with the shortfall period by period, not only in total, using stress consistent haircuts.

10 What a robust plan looks like

- Follows the Basel principles for sound liquidity risk
- Formal, documented, approved by the board or delegate
- Covers firm-specific, market-wide and combined stress
- Owners with deputies, ranked actions, communication plan
- Then: operational readiness and regular testing

IN THE LESSON

- Now to good practice.
- It follows the Basel Committee's principles for sound liquidity risk management.
- First, a contingency funding plan is a formal, documented plan, approved by the board or by a body the board delegates to.
- Second, it covers three kinds of stress: stress specific to the firm, stress across the whole market, and a combination of the two.
- Third, it names owners, each with a deputy, so that the plan still works when someone is away or has left, as at Fernhill in our story.
- Fourth, it sets out a ranked menu of actions, and fifth, it includes a communication plan.
- After these come the two things that separate a real plan from a paper one: operational readiness and regular testing.

11 Three kinds of stress

The plan must work in each of the three

Scenario	What it does to Fernhill
Firm-specific: Fernhill alone	Depositors and lenders pull back
Market-wide: every bank	Markets freeze; haircuts widen
Combined: both at once	Runs while assets are hard to sell

IN THE LESSON

- The plan must work in each of the three kinds of stress.
- In a firm specific stress, the trouble is Fernhill's alone, such as a rumour of losses or a rating downgrade.
- Depositors and wholesale lenders pull back from Fernhill, but markets work normally, so it can still sell assets at fair prices.
- In a market wide stress, the trouble hits every bank.
- Markets freeze, so assets become hard to sell, and haircuts widen even though nobody doubts Fernhill in particular.
- The combined stress is both at once: runs on the bank while its assets are hard to sell.
- It is usually the most severe, because the usual escape route, selling assets, is blocked just when cash is leaving fastest.

12 Owners, deputies and a ranked menu

- Each action: a named owner and a deputy
- Speed: how fast it turns into cash
- Amount: how much it raises in stress
- Cost: interest, discounts, lost business
- Signalling: what the market reads into it

IN THE LESSON

- Each action in the plan has a named owner, who carries it out, and a deputy, who can step in.
- Then the actions are ranked, using four tests.
- Speed: how quickly does the action turn into cash?
- A repo can raise cash in a day, while a bond issue takes weeks.
- Amount: how much can it raise in stress, after haircuts and discounts, not in calm markets?
- Cost: what does it cost, in interest, in fire sale discounts, or in business lost?
- And signalling effect: what will the market read into it?
- Some actions are cheap in money but costly in reputation, because they tell everyone the bank is in trouble, and that can speed up the very run the plan is fighting.

13 Fernhill's ranked menu

Ranked roughly by speed; the central bank last, as a backstop

Action	Speed	In stress	Cost and signal
Repo of retained notes	Days	$300m	Low cost, little signal
Draw committed lines	Days	$250m	Low cost, strong signal
Sell corporate loans	Weeks	$700m	Fire-sale discount
Issue covered bonds	Weeks to months	$300m	Needs open markets
Central bank facility	Days	$280m	Backstop only

IN THE LESSON

- Here is Fernhill's menu, ranked roughly by speed, with the central bank last, as a backstop.
- A repo of retained notes, which are securities from the bank's own securitisation that it kept rather than sold, raises cash in days, three hundred million in stress, at low cost and with little signal.
- Drawing committed bank lines also takes days and raises two hundred and fifty million.
- It costs little, but it sends a strong signal, because lenders notice when a bank draws on lines it normally leaves unused.
- Selling corporate loans takes weeks, raises seven hundred million, and its cost is the fire sale discount.
- Issuing covered bonds takes weeks to months, raises three hundred million, and needs markets to be open, which they may not be in a market wide stress.
- Last comes the central bank facility, worth two hundred and eighty million on the collateral ready today.
- It can provide cash in days, but good practice treats it as a backstop, not a primary source of funding.

14 The communication plan

- Regulators: early, frank and regular
- Counterparties: keep lines and trading open
- Depositors: one clear, consistent message
- Rating agencies: explain the buffer and the plan
- Staff: who may speak; nobody improvises

IN THE LESSON

- When a bank is under stress, what it says can matter as much as what it does.
- So the plan includes a communication plan, saying who speaks to whom, when, and with what message.
- Regulators should hear early, frankly and regularly, and not discover the problem from the press.
- Counterparties, the banks and investors Fernhill trades and borrows with, must be kept informed so that they keep lines and trading open.
- Depositors need one clear and consistent message.
- Rating agencies need to understand the buffer and the plan, because a downgrade can itself trigger outflows.
- And staff must know who is allowed to speak, so that nobody improvises a message to a client or a journalist.

15 Ready to use, not ready to read

- Collateral pre-positioned with the central bank
- Legal documents signed before the crisis
- Funding lines tested with small live transactions
- Central bank: a backstop, not a primary source

IN THE LESSON

- A plan is only as good as the actions it can actually carry out on the day.
- Good practice demands operational readiness.
- Collateral must be pre-positioned, meaning delivered to the central bank or to a lender and checked in advance, because assessing a pool of loans can take weeks.
- Legal documents, such as repo agreements, must be signed before the crisis, not negotiated during it.
- Funding lines must be tested with small live transactions from time to time, so that the bank knows the systems, the people and the counterparty really work.
- And central bank facilities are treated as a backstop, not a primary source.
- The plan should be able to cover the shortfall from its own actions, and use the central bank only if those fall short.

16 Example 5: pre-positioned collateral

Eligible mortgage loans $1,000m; central bank haircut 30%. Amounts in $m

Eligible mortgage loans	held on the books	**$1,000m**
Pre-positioned	legal and operational work done	**$400m**
Usable now	400 × (1 − 30%)	**$280m**
If all were pre-positioned	1,000 × (1 − 30%)	**$700m**
Not usable quickly	700 − 280	**$420m**

A backstop, not a primary source: not counted in the plan

IN THE LESSON

- Fernhill holds one thousand million dollars of mortgage loans that its central bank would accept as collateral, at a haircut of thirty per cent.
- This shows why pre-positioning matters.
- Only four hundred million has been pre-positioned, meaning the legal and operational work is done.
- So the cash Fernhill can raise now is four hundred times seventy per cent, two hundred and eighty million.
- If all the loans had been pre-positioned, it could raise one thousand times seventy per cent, seven hundred million.
- The difference, four hundred and twenty million, cannot be used quickly, because preparing those loans takes time the bank will not have.
- Remember too that, even when ready, this source is a backstop.
- Fernhill's plan should not count on it.

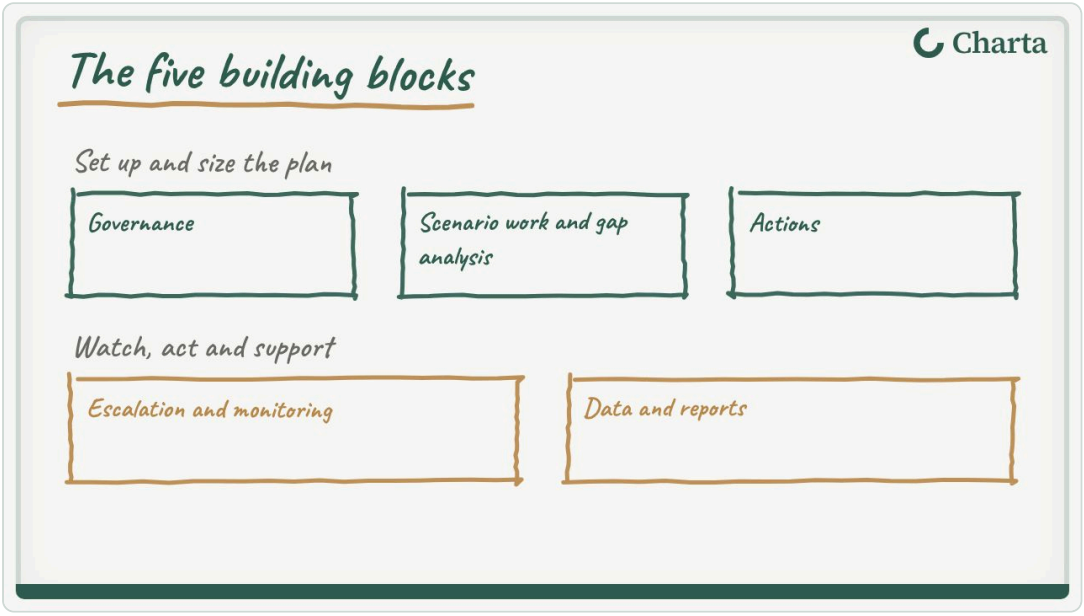
17 Testing, updating, and the paper plan

- Test through exercises, such as a simulated run
- Update regularly and after material changes
- Material change: new business, entity or currency
- Fernhill: mild test, no collateral, owner gone
- Usual failure: a plan that exists only on paper

IN THE LESSON

- Finally, a plan must be tested and kept up to date.
- It is tested through exercises, such as a simulated run on the bank, where the crisis team meets, reads the reports, and decides which actions to take.
- The plan is updated regularly, and also after material changes, such as a new business line, a new legal entity or a new funding currency.
- Now think back to Fernhill's Monday morning.
- Its stress test was too mild, its collateral was never delivered, and its owner had left.
- Each of those is a sign of the usual failure: a plan that exists only on paper.
- Good practice is what turns that paper into actions that work.

18 The five building blocks



IN THE LESSON

- Now we can appraise the plan block by block.
- A contingency funding plan has five building blocks.
- The first three set up the plan and size it.
- Governance decides who approves the plan and who activates it.
- Scenario work, including liquidity gap analysis, measures the shortfall and when it appears.
- Actions list what the bank can do about it.
- The other two watch and support.
- Escalation and monitoring watch for trouble and move it up the chain.
- Data and reports feed every other block with the numbers it needs.
- The exam point is that each block must connect to the others, and the thread that ties them together is timing.
- We now take each block in turn, using Fernhill's numbers.

19 Block 1: governance

- The board sets the liquidity risk appetite
- Fernhill: survive at least 4 weeks on the buffer
- Board or delegate approves the plan
- A senior crisis team activates it
- Clear decision rights: who may do what, and how much

IN THE LESSON

- The first block is governance.
- The board sets the liquidity risk appetite, which is how much liquidity risk the bank is willing to run.
- At Fernhill, part of that appetite is the minimum survival horizon of four weeks.
- The board, or its delegate, also approves the plan.
- But a board does not run a crisis hour by hour.
- That falls to a senior crisis team, typically the treasurer, the chief risk officer, the chief financial officer and the heads of the main businesses.
- The plan gives this team clear decision rights: who may activate the plan, who may sell assets or draw lines, and up to what amount.
- Otherwise the team spends its first day arguing about authority while the cash leaves.

20 Block 2: liquidity gap analysis

Net outflow = Stressed outflows − Stressed inflows
Shortfall = Cumulative net outflow − Usable buffer

Stressed outflows	Cash leaving in each bucket
Stressed inflows	Cash arriving in each bucket
Cumulative net outflow	Running total of net outflows
Usable buffer	Buffer after stress haircuts

IN THE LESSON

- The second block is scenario work, and at its heart is a liquidity gap analysis.
- It lays stressed cash inflows against stressed outflows, by time bucket.
- A time bucket is a period, such as the first week or weeks five to eight.
- For each bucket, the net outflow is the stressed outflows minus the stressed inflows.
- Adding the net outflows bucket by bucket gives the cumulative net outflow, the running total.
- Then compare that running total with the usable buffer, valued after stress haircuts.
- The shortfall is the cumulative net outflow minus the usable buffer.
- Where it first turns positive tells you when the shortfall appears, and how large it grows tells you how much the actions must raise.

21 Example 6: Fernhill's gap table

Stressed cash flows by time bucket, $m: outflows less inflows

Week 1	1,200 − 200	**$1,000m**
Week 2	900 − 200	**$700m**
Weeks 3 to 4	1,300 − 400	**$900m**
Weeks 5 to 8	1,600 − 600	**$1,000m**
Total net outflow	1,000 + 700 + 900 + 1,000	**$3,600m**

IN THE LESSON

- Here are Fernhill's stressed cash flows by time bucket, in millions of dollars, outflows less inflows.
- These are the numbers behind the red line we saw earlier.
- In week one, outflows are one thousand two hundred and inflows two hundred, a net outflow of one thousand.
- In week two, nine hundred out and two hundred in, a net outflow of seven hundred.
- Weeks three and four together have one thousand three hundred out and four hundred in, so nine hundred net, which is the five hundred and four hundred of those two weeks.
- Weeks five to eight have one thousand six hundred out and six hundred in, one thousand net.
- The total net outflow over the eight weeks is three thousand six hundred million dollars, which is exactly where the red line ended.

22 Example 7: when the shortfall appears

Buffer left = 2,400 − cumulative net outflow, $m; negative means a shortfall

End of week 1	2,400 − 1,000	**+1,400**
End of week 2	2,400 − 1,700	**+700**
End of week 4	2,400 − 2,600	**−200**
End of week 8	2,400 − 3,600	**−1,200**

Shortfall first appears in the weeks 3 to 4 bucket

IN THE LESSON

- Now compare the cumulative net outflow with the usable buffer of two thousand four hundred million.
- The buffer left is the usable buffer minus the cumulative net outflow, and a negative number means a shortfall.
- At the end of week one, one thousand has gone, so one thousand four hundred is left.
- At the end of week two, cumulative outflow is one thousand seven hundred, so seven hundred is left.
- At the end of week four, it is two thousand six hundred, so the bank is two hundred million short.
- At the end of week eight, it is three thousand six hundred, so the shortfall has grown to one thousand two hundred million.
- The shortfall first appears in the bucket for weeks three to four.
- That tells the plan two things: its actions must raise one thousand two hundred million in all, and the first cash must arrive within weeks three to four.

23 Example 8: block 3, the actions

Revised plan, ranked by time to cash, after haircuts and discounts. $m

Repo of retained notes	375 × (1 − 20%), week 3	**$300m**
Committed bank line	drawn in week 3	**$250m**
Sale of corporate loans	1,000 × (1 − 30%), week 6	**$700m**
Covered bond issue	cash in week 8	**$300m**
Total by week 8	300 + 250 + 700 + 300	**$1,550m**

By week 5: 550 against a need of 500. Central bank not counted

IN THE LESSON

- Here is Fernhill's revised plan, ranked by time to cash, after haircuts and discounts.
- This is the third block, the actions, each with an expected amount, a haircut and a time to cash.
- The repo uses three hundred and seventy five million of retained notes at a twenty per cent haircut, giving three hundred million in week three.
- To close the week five gap, Fernhill adds a committed bank line of two hundred and fifty million, drawn in week three, accepting its signalling cost.
- The loan sale now uses the observed thirty per cent discount, so one thousand million brings seven hundred million in week six.
- The covered bond brings three hundred million in week eight.
- The total is one thousand five hundred and fifty million.
- By week five, the plan has five hundred and fifty against a need of five hundred.
- The central bank stays a backstop.

24 Block 4: escalation and monitoring

- Early warning indicators watch for deterioration
- Examples: deposit outflows, wider funding spreads
- Also: rating pressure, collateral calls, lines cut
- Defined triggers move the matter up the chain
- Amber: alert the crisis team. Red: activate the CFP

IN THE LESSON

- The fourth block is escalation and monitoring.
- Early warning indicators are measures watched to catch deterioration before it becomes a crisis.
- Examples are deposit outflows that run faster than usual, and wider spreads on the bank's own funding.
- Others are pressure on the bank's credit rating, rising calls for collateral, and lenders cutting the lines they offer.
- Watching is not enough, though.
- The plan sets defined triggers, levels of an indicator at which the matter moves up the chain to the next level of authority.
- A common design has two levels.
- At amber, the treasury alerts the crisis team, which meets and prepares actions.
- At red, the crisis team activates the contingency funding plan.

25 Example 9: a trigger fires

Weekly retail outflow triggers: amber at 2%, red at 4%

Retail deposits at the start	Fernhill	**$20,000m**
Week 1 outflow	500 ÷ 20,000	**2.5%: amber**
Week 2 outflow	800 ÷ 19,500	**4.1%: red**
Amber action	treasury alerts the crisis team	**Alert**
Red action	crisis team activates the CFP	**Activate**

IN THE LESSON

- Fernhill's own triggers for retail deposit outflows in a week are two per cent for amber and four per cent for red.
- Retail deposits start at twenty thousand million dollars.
- In the first week of the rumour, five hundred million leaves, which is five hundred over twenty thousand, two point five per cent.
- That is above two per cent, so amber.
- In the second week, eight hundred million leaves out of the nineteen thousand five hundred that remain, about four point one per cent.
- That is above four per cent, so red.
- The amber action is that the treasury alerts the crisis team, which meets and readies the repo.
- The red action is that the crisis team activates the plan.
- Notice that the trigger fires while the buffer still has room, which is the whole point.

26 Block 5: data and reports

- Timely: daily in stress, intraday if needed
- Granular by legal entity
- Granular by currency
- Granular by collateral: what is free to use
- Feeds the gap table, the triggers and the actions

IN THE LESSON

- The fifth block is the data and reports that support everything else.
- They must be timely: in a crisis, reports that arrive a week late describe a bank that no longer exists, so they are produced daily, and during the day if needed.
- And they must be granular, in three ways.
- By legal entity, because cash in one subsidiary cannot always be moved to another, especially across borders.
- By currency, because a drain in one currency must be met in that currency.
- And by collateral, showing which assets are unencumbered, meaning free to sell or pledge, and which are already pledged.
- These data feed the gap table, the early warning indicators and the list of actions.

27 Example 10: a currency the totals hide

Week 1 stressed net outflows by currency, in $m equivalent

Week 1 net outflow, all currencies	from the gap table	**$1,000m**
Of which in euros	from the currency report	**$400m**
Euro buffer after haircuts	euro assets held	**$150m**
Euro shortfall in week 1	400 − 150	**$250m**
Group surplus in week 1	2,400 − 1,000	**$1,400m**

Closing it needs FX swap markets, which may be strained

IN THE LESSON

- Here are Fernhill's week one stressed net outflows by currency, in dollar equivalents.
- Across all currencies, the net outflow is one thousand million dollars.
- The currency report shows that four hundred million of it, in dollar terms, is in euros.
- Fernhill's euro buffer, after haircuts, is only one hundred and fifty million.
- So in euros the bank is two hundred and fifty million short in week one.
- Yet the group total looks comfortable: two thousand four hundred of buffer less one thousand of outflow leaves a surplus of one thousand four hundred.
- To close the euro gap, Fernhill would have to swap dollars into euros, through foreign exchange swap markets that may themselves be strained in stress.
- A report only in total would have hidden the problem.

28 Timing: the common thread

- Governance: who decides, and how fast
- Gap analysis: when the shortfall appears
- Actions: cash must arrive before then
- Triggers: early enough to leave time to act
- Data: fresh enough to see it coming

IN THE LESSON

- Now see how the blocks connect, with timing as the common thread.
- Governance must decide fast enough: Fernhill's crisis team has to be able to act within a day of a red trigger.
- Gap analysis tells us when the shortfall appears, which for Fernhill was weeks three to four.
- The actions must turn into cash before then, which is why the repo and the committed line come first and the bond comes last.
- The triggers must fire early enough to leave time to act, which is why Fernhill's red trigger fired in week two, while the buffer still had room.
- And the data must be fresh enough to see it coming.
- If any block runs on a slower clock than the others, the plan fails at that point.

29 Mistakes to avoid: the building blocks

- Blocks built separately, by teams that never meet
- Gap analysis in total, not by bucket and currency
- Actions at book value, ignoring haircuts
- Triggers with no owner and no action attached
- Central bank funding counted as a primary source

IN THE LESSON

- The first mistake when appraising a plan is blocks built separately, by different teams, that never meet, for example triggers that do not match the timing in the gap analysis.
- The second is a gap analysis done in total only, not by time bucket and by currency, which hides problems like Fernhill's euro gap.
- The third is counting actions at book value, ignoring haircuts and fire sale discounts, which overstates what the plan can raise.
- The fourth is a trigger with no owner and no action attached.
- And the fifth is counting central bank funding as a primary source, when it should be a backstop.
- Each mistake breaks a link between blocks, and timing is usually where it shows.

30 Recap: the main ideas

- Stress test sizes the plan; action costs feed back
- Compare period by period, with stress haircuts
- Robust: approved, three stresses, owners, menu, comms
- Ready and tested: collateral, documents, live tests
- Five blocks, tied together by timing

IN THE LESSON

- Let us pull it together.
- A liquidity stress test and a contingency funding plan are two halves of one process.
- The test measures how large, how fast and in which currencies the drain could be, and how much of the buffer is usable after stress haircuts.
- The plan covers the shortfall, period by period, with actions that arrive in time, and the cost of those actions feeds back into later tests.
- A robust plan is formal and board approved, covers firm specific, market wide and combined stress, names owners and deputies, ranks its actions, plans its communication, is operationally ready, and is tested and updated.
- Its five building blocks are governance, scenario work, actions, escalation and monitoring, and data and reports, tied together by timing.

31 Try three quick questions

1. Bonds $800m at 5% haircut and $400m at 25%. 30-day net outflow $1,150m. Shortfall?
   Answer: 760 + 300 = 1,060. Short by $90m.
2. Need $300m by week 3, $700m by week 6. Actions: $200m from week 1, $600m from week 4. Adequate?
   Answer: Total 800 vs 700 covered, but $100m short in week 3.
3. A plan relies first on the central bank, with no collateral pre-positioned. What is wrong?
   Answer: Central bank is a backstop; plan not operationally ready.

IN THE LESSON

- Pause the video, think, then listen to the answers.
- Question one.
- A buffer holds eight hundred million dollars of bonds with a stress haircut of five per cent and four hundred million with a stress haircut of twenty five per cent.
- Thirty day net outflow is one thousand one hundred and fifty million.
- Is there a shortfall?
- The usable buffer is seven hundred and sixty plus three hundred, one thousand and sixty, so the bank is ninety million short.
- Question two.
- The need beyond the buffer is three hundred million by week three and seven hundred million by week six.
- Actions bring two hundred million from week one and six hundred million from week four.
- Is the plan adequate?
- It covers the total, eight hundred against seven hundred, but it is one hundred million short in week three.
- Question three.
- A plan relies first on the central bank, with no collateral pre-positioned.
- What is wrong?
- The central bank should be a backstop, and the plan is not operationally ready.