Module 26 : Case Study : Institutional

Module 26.1 : Managing Liquidity Risk

26.a : Tools for Managing Liquidity Risk

4 key tools :

1) Liquidity profiling & time-to-cash tables.
2) Rebalancing & commitments.
3) Stress Testing
4) Derivatives

Liquidity profiling & time-to-cash tables.

Figure 26.1: Time-to-Cash Table

Time to Cash	Liquidity Classification	Liquidity Budget (% of portfolio)
< 1 week	Highly liquid	At least 5%
< 1 quarter	Liquid	At least 25%
< 1 year	Semi-liquid	At least 40%
> 1 year	Illiquid	Up to 40%

Liquidity Budget :

Figure 26.2: Liquidity Profile

Asset Class	Asset Class Allocation (% of portfolio)	Investment Allocation (% of overall portfolio)	Investment Vehicle	Liquidity Classification			
				Highly Liquid	Liquid	Semi-Liquid	Illiquid
Fixed income	12%	4%	Separate account	100%	0%	0%	0%
		6%	Commingled fund	100%	0%	0%	0%
		2%	Futures	100%	0%	0%	0%
Domestic equity	20%	9%	Commingled fund	0%	50%	50%	0%
		9%	Separate account	0%	100%	0%	0%
		2%	ETF	100%	0%	0%	0%

Rebalancing & commitments.

Rebalancing

With rebalancing costs for iliquid investments very high, critical to maintain enough liquid assets to execute any necessary rebalancing transactions.

Systematic Rebalancing Policies.

designed to maintain long-term SAA as much as possible.
(e.g. calendar & %-range rebalancing)
To reduce transaction costs, a <u>wider</u> range would be required for for more volatile investments.

Automatic Adjustment mechanism

Commitment.

Stress Testing

considers liquidity needs of a portfolio during period of market stress.

Derivatives

futures overlay allows for rebalancing of many (but not all). asset classes. w/o. altering any of the asset allocations determined by the external active managers.

Can be seen as a form of leverage.

26.6: Capture of iliquidity premium as a long-term investment strategy

Liquidity premium = additional return for taking on risk of holding up cap for an unknown. amt of time.
(usually goes up as amount of time goes up)

Diff way to model Liquidity premium: think of it as value of put option where the strike price is the marketable price (theoretically estimated) of the illiquid asset when it was purchased:

illiquid asset price = marketable asset price - put price

$$\text{Liquidity premium (\%)} = E(R)_{\text{illiquid asset}} - E(R)_{\text{marketable asset}}$$

iliquidity is usually positively correlated w/ E(R) for equity.

Hard to determine liquidity premium in practice b/c. of all the other factors of determining equity returns.

MODULE QUIZ 26.1

1. A portfolio analyst makes the following two statements:
   Statement 1: The illiquidity premium is relatively easy to determine accurately.
   Statement 2: Calendar and percent-range rebalancing are examples of automatic adjustment mechanisms.
   How many of the analyst's statements are correct?
   A. Zero.
   B. One.
   C. Two.
2. **Describe** how futures and options can be used for leverage and liquidity purposes.

1. B
Statement 1 is wrong b/c liq. prem is hard to determine
Statement 2 is correct.

2. Futures only requires minimal cash requirement for margin, can leverage & fulfill investment in other assets & meet liquidity requirements w/ unused cash.

Options can be purchased @ a premium & thereby serving as a form of leverage, or sold to generate liquidity

Module 26.2 : Addressing Liquidity Needs

26.c :
CF forecasting models & commitment-pacing models are likely to be used for private equity & real estate asset classes.

MODULE QUIZ 26.2

1. A. **Discuss** *three* reasons why the QU endowment should increase its allocation to illiquid investments.
   B. **Discuss** *one* concern with increasing the allocation to illiquid assets and **describe** how that concern can be mitigated.
2. A. Using the information in Figure 26.4, **discuss** *two* reasons that support Thompson's proposed asset allocation.
   B. **Discuss** *two* tradeoffs involved with implementing the proposed asset allocation.
   C. **State** *two* items that Thompson should confirm before implementing the proposed asset allocation.
3. **Discuss** how a current spending policy, based on a combination of prior year spending and prior year market value, could impact liquidity needs when market conditions deteriorate.
4. **Discuss** *three* tools for QUINCO to use for liquidity management—specifically, (1) cash flow forecasting and commitment pacing models, (2) liquidity budgets, and (3) stress tests.
5. **Describe** the impact on QU's liquidity resulting from the proposed asset allocation. **Describe** any follow-up actions Thompson needs to take with respect to the proposed asset allocation.

/ /

Module 26.3: Modifying Asset Allocation

26.e, 26.f: ETFs are the least cash-efficient. (i.e. need to be cash funded). compared to futures & TRS.
TRS has the lowest tracking error.

26.g: Responsible ownership of ESG. investing policy is thru proxy voting & corp. engagement.

Monitoring of ESG metrics for a portfolio includes the following: metrics comparing ESG ratings or scores for portfolio companies from industry providers with peer companies and the policy benchmark; assessing portfolio sensitivities to a range of climate-related risks by developing an analytical framework; and aggregate data on the carbon footprint of portfolio companies. The metrics are then monitored over time for changing trends. The other two incorrect answer choices relate to due diligence in ESG investing and manager selection, which includes the following:

- If a formal ESG integration policy exists
- How ESG factors are incorporated into the investment process
- The manager's commitment to disclosing material ESG issues in a timely manner

(Module 26.3, LOS 26.g)

MODULE QUIZ 26.3

1. **Discuss** ethical issues and potential violations of the Code and Standards by Winter, Hall, the QU president and QU treasurer, Allen, and Davis. (Note: The citation of specific standard numbers and names is not necessary.)
2. On the assumption of no leverage employed, **identify** the *most appropriate* method for Thompson to use to implement the overweight to U.S. equities. **Justify** your response with *three* reasons, including cost, logistical, and risk considerations.
3. Assuming a leverage level of 4, **determine** whether Thompson would change her mind in terms of investment vehicle for implementation purposes. **Identify** *one* issue unrelated to cost. (Note: Ignore any additional return that could be earned by investing the 75% of cash that is not required for the investment.)
4. **Discuss** the issues of cash drag in rebalancing in the cash market and tracking error in rebalancing in the derivatives market.
5. **Discuss** how implementation speed and rebalancing size would impact the method of implementation.
6. Assuming the 2.5% reallocation is performed, **evaluate** the implementation options and **select** the *most appropriate* one for Thompson to use.
7. **Describe** how an ESG investment could be monitored.

/ /

Module 27

Module 27.1 : Early Career Stage.

Identify the risks:
- Premature Death Risk.
- Earnings Risk.
- Car accidents / Repair Costs } if applicable
- Home Purchase
- Other Liabilities

2 Drivers of earning risks:
1. Unemployment
2. Disability

Figure 27.2: Disability Insurance Calculation (€)[3]

	Jessica	Paul
Net income to be replaced	20,490	33,670
Annual disability coverage by the social security system	18,000	18,000
Shortfall	2,490	15,670
Benefit period (until retirement)	37 years	37 years
Assumed annual benefit adjustment	2%	2%
Discount rate	3%	3%
PV of future earnings replacement required (annuity due)	77,700	489,000

$$1 + \text{adjusted discount rate} = \frac{1 + \text{nominal rate.}}{1 + \text{growth rate}}$$

I/Y = 1.03 ÷ 1.02 − 1 = 0.0098. /0.98.
PMT = 2,490 / 15,670

Premature Death Risk

2 ways to calculate:

1. Needs analysis
2. Human Life Value

Use needs analysis if potential growth of human life is not known yet.

Needs Analysis Method

1) Add Cash Needs
2) Add Cap. Needs.
3) Less. Cap Available.

Life Insurance Coverage Using Needs Analysis—Example (1)

Paul Schmidt:

- Cash needs upon death (inc. burial, taxes or debt to repay, emergency fund): €30,000
- Survivor (Jessica)'s annual living expenses: €25,000 growing at 2% p.a. until death at age 90
- Jessica's annual net income: €20,490 growing at 6% to retirement at age 65 (she is now 28)
- Nominal discount rate = 3%, plus 3% risk adjustment for Jessica's salary

Life Insurance Coverage Using Needs Analysis—Example (2)

Capital available:

- Cash, savings, investments: €15,000
- PV of vested retirement account (Jessica's): €12,000
- Existing life insurance coverage on Paul's life: €0

Compute the amount of additional life insurance needed for Paul (assume start-of-year cash flows).

/ /

Need :

30,000

+ 25,000 growing @ 2% (3% discount rate) (28 to 90). ①

- 20,490 growing @ 6% (6% discount rate). (28 to 65). ②

- 15,000

- 12,000

expense adj. discounted rate = 0.98%.

income adj. discounted rate. = 0%.

30,000

① 1,169,000

② -758000

- 15,000

- 12,000

414,000

MODULE QUIZ 27.1

1. For a family that is in the early career stage, the largest asset on their economic balance sheet is *most likely* to be:
   A. a mortgage.
   B. human capital.
   C. their savings account.
2. One reason that supports investors in their early career stage investing in their portfolio aggressively is that:
   A. human capital is equity-like.
   B. they have time to recoup losses.
   C. they still need to build up a sufficient safety net.
3. Which of the following is the *most appropriate* argument against purchasing new home while in the early career stage of life?
   A. Local real estate prices have been on the decline for two consecutive years and don't appear to be turning around any time soon.
   B. Families in the early career stage have little experience with real estate and should wait until they observe a full market cycle.
   C. The family has little financial capital available to cover short-term expenses, and purchasing a new property could present unexpected expenses.

1. B

2. B

3. C

Module 27.2 Career Development Stage.

Associated Risk:

- Earning Risk from loss of employment
- Earning Risk from disability
- Premature Death Risk.
- Investment Portfolio Risk
- Retirement lifestyle risk.
- Property & Liability risk

Risk Management.

- Disability Insurance
- Life Insurance
- Manage Investment Risk.
  - Hold investment
- Manage Retirement Lifestyle Risk.
  - increase contribution to tax-advantaged plans.
- Manage Property & Liability Risk.
  - increase insurance coverage

Life Insurance Coverage Using Human Life Value—Example (1)

Jessica Schmidt:

- Age now = 45
- Annual after-tax income: €53,650, retiring at 65
- Annual expenses *not incurred* if Jessica dies: €10,000
- Value of annual employee benefits *no longer received* if Jessica dies: €4,000
- Expected nominal salary growth: 5%
- Discount rate = 3%

Life Insurance Coverage Using Human Life Value—Example (2)

Jessica Schmidt:

- Existing life insurance: €200,000

Compute the amount of additional life insurance needed for Jessica using the human life value method (assume any insurance payout will be taxed at 30%; assume start-of-year cash flows).

$(53,650 + 4000 - 10000) \div (1 - 0.3) = 68,070$. (PMT).

$N = 65 - 45 = 20$

$I/Y = (1 + 3\%) \div (1 + 5\%) - 1$

$= -0.019048 \quad / -1.9048$

$PV = 1,644,000$ (BGN).

Additional Insurance $= 1,644,000 - 200,000$

$= 1,444,000$

Life Insurance Coverage Using Needs Analysis—Example 2 (1)

Jessica Schmidt:

- Spouse (Paul)'s living costs: €35,000 for 45 years
- Children until independent:
  - Roxanne's living cost: €9,000 for 10 years
  - Peter's living cost: €13,000 for 83 years
- Paul's net income to retirement at 65: €46,510
- Paul's age = 45
- Growth in living costs = 2%; growth in salary = 1%
- Nominal discount rate = 3%

Life Insurance Coverage Using Needs Analysis—Example 2 (2)

- Cash needs (burial, etc.): €30,000
- Mortgage to be paid off on death of either spouse: €35,000
- Cash, savings, investments: €207,000
- PV of Paul's vested retirement account: €227,000
- Existing life insurance coverage on Jessica: €200,000

Compute the amount of additional life insurance needed for Jessica using the needs analysis method (assume start-of-year cash flows).

Cash needs = 30,000

Mortgage = 35,000

Paul's expense = 35,000 for 45 yrs.

I/Y = 0.98%.

N = 45.

PV = 1,281,000 (BGN).

Rox's expense = 9,000 for 10 yrs.

I/Y = 0.98%.

N = 45.

PV = 86,000 (BGN).

Peter's expense = 13,000 for 83 yrs.

I/Y = 0.98%.

N = 45.

PV = 743,000 (BGN).

Paul's income = 46,510 for 20 yrs.

I/Y = 1.98%

N = 20

PV = 777,000

Total needs = 30,000 + 35,000 1,281,000
+ 86,000 + 743,000
= 2,175,000

Total cap = 777,000 + 207,000 + 227,000
= 1,211,000

Additional Coverage needed
= 2,175 K - 1,211 K - 200 K
= 764,000

MODULE QUIZ 27.2

1. The risk of unemployment is *most likely* to be mitigated by:
   A. life insurance.
   B. savings buffers.
   C. disability insurance.
2. In the career development stage of an investor's life, the *most appropriate* method of allocating an investment portfolio is to use:
   A. a few securities from the same sector in which the investor currently works and is knowledgeable about.
   B. a mix of pooled investment vehicles that are low cost and diversified across region, sector, and securities.
   C. a basket of 20–25 individual securities that are representative of the different sectors of the global stock market.
3. Which of the following is the *least appropriate* reason for a client to reevaluate their life insurance policy in the career development stage?
   A. The client's spouse gives birth to their first child.
   B. The client's parents die in a car accident and the funeral costs came as a surprise.
   C. The client has been promoted multiple times in last five years and now his earnings are twice what they were.

1. B
2. B
3. B

Module 27.3. Peak Accumulation Stage.

27.c: Peak Accumulation Stage. Associated Risk:
- Earning Risk from loss of employment
- Earning Risk from disability
- Premature Death Risk.
- Investment Risk (Nonretirement savings.)
- Retirement lifestyle risk.

Risk Management.
- Disability Insurance
- Life Insurance
- Retirement savings.
- Nonretirement savings.

Typical Risk faced:
- Longevity Risk
- Purchasing Power Risk. (Individuals on FI may not be able to keep up w/ inflation)
- Unexpected Expenses/Needs

DB plans are dependent on solvency ↑.
DC plans are dependent on returns.

/ /

MODULE QUIZ 27.3

Brandon and his wife, Eileen, are 55 years old and are in the peak accumulation stage of their careers. They meet with John Davis, CFA, a family friend, to begin to prepare for retirement, which they expect will occur in 10 years. Eileen, who is chief marketing officer at a small marketing firm, makes an annual salary of $100,000 per year and expects her compensation to increase at 4% annually, somewhat above the current inflation rate of 2%, for the next 10 years. Brandon, having just left his job as a computer programmer, recently took a part-time consulting position with a small technology firm and is making $60,000 per year. He expects his compensation to rise with the current rate of inflation. Currently, the government provides non-taxable disability assistance of 30% of gross income. Assume that the current tax rate is 20% and the discount rate is 3%.

1. Assuming that both Brandon and Eileen will qualify for government disability assistance, **calculate** the amount of additional disability insurance they should each take out individually, rounded to the nearest $100.
2. Five years later, Eileen receives a large raise of $50,000 per year. She believes her future compensation will continue to rise at 4% until retirement. Despite a large increase in salary, **discuss** why it may not be necessary to take out additional disability insurance. Note: There are no calculations necessary to answer this question.
3. Brandon and Eileen will have to fund their retirement income solely from their retirement accounts and investment portfolio. They also have three children, ages 30, 20, and 15, all three of whom, upon Brandon and Eileen's death, their parents would like to receive a substantial inheritance. The total value of their investment assets is currently valued at $2.5 million. Which of the following is *least appropriate* justification for Davis to use a goals-based investment strategy when making recommendations to Brandon and Eileen?
   A. Brandon and Eileen's goals have multiple time horizons associated with them.
   B. Brandon and Eileen have multiple goals they are trying to accomplish upon retirement.
   C. A strategy based on Brandon and Eileen's goals will maximize the portfolio's return for given measure of risk.

1.

Module 27.4: Early Retirement Stage.

Typical objectives:
- Have reliable retirement income.
- Maintain purchasing power
- Provide future inheritances.

Typical risk associated:
- longevity risk.
- Purchasing power risk.
- Unexpected expenses / needs.

Managing risk.
- longevity risk. → purchase annuity
- Purchasing power risk. → purchase inflation-linked annuity (tradeoff. = lower yield)
- Unexpected expenses / needs.

MODULE QUIZ 27.4

Lynn and Michael are 65 years old and have reached the early retirement stage of their careers. They currently have no debt outstanding and, over the course of their lives, have built up a combined investment portfolio value of $5 million. They meet with their advisor, Jamie Rodriguez, CFA, to discuss the following objectives in retirement:

- Live a comfortable retirement with their annual expenses covered. Starting next year, they estimate their annual living expenses will be $100,000 before tax.
- Set aside $1 million (in today's dollars) to leave to their three children, Kyle, Jacob, and Grant, in 30 years.
- Go on vacation twice a year, the total cost of which should amount to roughly $20,000 per year.

Throughout the conversation, Jamie inquires about the couple's risk tolerance. Lynn explains that she made a few bad investments earlier in her career and doesn't think she could stomach a drawdown of more than 20% in any given year. Michael shares that he wants more upside potential in their portfolio and wants to invest a significant portion of it in the stock market.

1. **Describe** and **justify** Lynn's ability and willingness to take risk.
2. Based on the couple's objectives, **describe** and **justify** which asset allocation technique Jamie should follow, and what kind of asset allocation recommendation (conservative, moderate, or aggressive) he should make across the different objectives.

   a. Asset allocation technique

   b. Asset allocation

      i. Live a comfortable retirement
      ii. Leave $1 million (in today's dollars) to their three children
      iii. Go on vacation twice a year

Module 28 Risk Mgt: Institutional

Module 28.1: Financial Risks faced by Institutional Investors

Institutional Investor Risk Objective

Pension funds

Objective: provide retirement income to members.
Risk: inability to meet contractual liabilities.

Endowments & Foundations.

Objective: support current & future beneficaries.
Risk: inability to fulfill mission & purpose.

Soveriegn Wealth Funds.

Objective: support gov spending
Risk: unable to provide spending when needed

Banks.

Objective: Asset Liability Mgt.
Risk: duration mismatch, interest rate risk, credit risk. & liquidity risk.

Insurance companies

Objective: Asset Liability Mgt.
Risk: Funding Contingent liabilities, liquidity risk.

Risk Considerations Illiquid Assets.

Endowment Model.

- Higher alloc. to PE, RE Hedge Funds, natural resources, infrastructure.
- Illiquid assets.

Liquidity in a crisis.

- Inflow from donations slow, spending outflows continue.
- market liquidity: able to sell at a fair price
- Funding liquidity: ability to raise funds.

Illiquid Assets: Smoothed Returns.

Return smoothing

- Results from a lack of transactions in private market.
- Typically in PE & RE markets.
- Appraisals lag true valuations & returns.

Impact of Smoothing.

- Rising Market
- Falling Market
- Volatility falsely appear lower.

Direct Investment in Illiquid Assets.

- Direct control.
- Increased liquidity & timing over exits.
- Difficult to. diversify
- Potential for additional liabilities.
- Need to attract & retain in-house investment team.

Indirect Investment in Illiquid Assets.

- Invest via a fund
- Diversified
- Limited Liability.
- Less control. over exits.
- Higher fees

Manage Liquidity Risk.

1. Establish liquidity risk. policy guidelines
2. Assess current liquidity.
3. Project future E(CF).
4. Stress test future liquidity needs.
5. Set an emergency liquidity contingent plan

MODULE QUIZ 28.1

1. You are reviewing indirect investments in private equity. Which of the following is *most accurate* of this investment approach?
   A. Indirect investments decrease portfolio liquidity.
   B. Indirect investments incur annual fund management fees and avoid profit sharing.
   C. Indirect investments have higher asset concentrations.
2. Which of the following is *least accurate* of unsmoothed returns?
   A. Volatility is biased downward.
   B. Market transactions are plentiful.
   C. Appraisals are rarely used.
3. **Identify** *two* disadvantages of direct investments in private asset classes.

1. A
2. A
3. - difficult to diversify
   - need to hire. an in-house team.
   - concentration risk.

Module 28.2: Enterprise Risk Management

Perspectives:

- Top-down
- Bottom-up.
- Portfolio-level. view
- Asset-level view
- Returns based
- Holdings based
- Absolute Risk.
- Relative Risk.
- Short-term metrics.: VaR, cVaR.
- Long-term metrics: MC simulation.
- Quantitative approaches: stress test. critical factors.
- Qualitative approaches: risk experience &. expertise.

Enterprise Risk Management

- top-down approach encompassing all risks. faced by an organization
- Risk = Credit risk, market risk, operational risk, reputational risk, ESG risk.
- Board of directors define risk tolerances &. return objectives.

IPS Risk Tolerances.

- Volatility
- Max Drawdown
- VaR & cVaR.
- Leverage
- Derivatives & short positions.
- Limits on iliquid holdings.
- Tracking error budgets

VAR./CVaR

Principles for responsible investment.

- Voluntary framework for investors.
- Encourages active ownership, engaging w/ portfolio firms seeking ESG disclosures
- Identify firms that prosper in transition to a zero-carbon economy & those w/ dependencies upon fossil fuels.

Universal Ownership.

- Large institutional investors will have ESG winners & losers.

MODULE QUIZ 28.2

1. A risk analyst estimates a 95%, 10-day VaR of $1.25 million. The investment committee asks the analyst to change the VaR model assumptions. Which of the following is correct?
   A. An increase in the significance level will increase the VaR estimate.
   B. A decrease in the holding period will reduce the VaR expected loss.
   C. An increase in the confidence level will increase the conditional VaR.
2. Which of the following is *least accurate* of an enterprise risk management system?
   A. Risk tolerance is set by the chief investment officer.
   B. Maximum drawdown provides short-term risk estimates.
   C. Returns-based risk systems are more likely to be preferred to holdings-based risk systems with hedge fund risk analysis.
3. **Identify** *three* steps in the enterprise risk management process.

1. C
2. A (Board of director sets the risk tolerance).
3. 1). Identify risk
   2) measure risk.
   3). mitigate & manage risk.
   4). monitor risks.
   5). report risks.
   6) do strategic analysis & planning

Module 28.3 Environmental & Social Risk.

Environmental & Social Risk Factors.

Environmental Issues.

- Air & Water Pollution
- Carbon emissions & Climate Change.
- Energy efficiency
- Water scarcity
- Water management
- Deforestation
- Biodiversity

Social Issues

- Human rights & labor working conditions
- Gender & diversity
- Occupational health & safety
- Customer satisfaction
- Data Security & Privacy
- Community relations & charity

Climate Risk.

2015 Paris Climate Agreement.

- Set target to limit global temp increase to 2 degree celsius above pre-industrial levels.
- Voluntary nationally determined contributions (NDCs). (i.e. pledges from countries to reduce carbon emissions).

The inevitable policy response (IPR)

- suggest 0-carbon emission is inevitable.

Transition & Physical Risk.

Transition risk: being too slow / unable to transition to a zero-carbon economy (i.e. being left behind with a outdated business model)

Drivers of transition risk:
- Changes in carbon taxes / regulation
- Higher input costs of fossil fuel.
- New clean tech
- Shift in consumer preferences.
- Increased global coordination & environmental concerns.

Acute physical risk: one-off weather event. (e.g. flooding, heatwave, hurricanes, wildfires).

Chronic physical risk: gradual impacts of climate change (e.g. rising sea levels, rising temperatures. from global warming).

New Risk Factors: Location & Temperature.
- the location of portfolio assets.

Climate Risk Responses.

Climate Mitigation Strategies
- Reduce reliance & exposure to fossil fuels & carbon tech
- reduce vulnerability to changes in carbon policy & shifts in demand

Climate Adaptation Strategies.
- Align portfolios to sectors / firms that will prosper in transition to a 0-carbon economy. (i.e. new opportunities in clean energy & energy efficiency).

Social Issues for Institutional Investors.
Reputational damage. from outsourcing & labor practices. (aka. headline risk).

"Just" transition.
- Respecting the rights to those impected by climate change. policies., especially those. in developing countries.

United Nations. Sustainable Development Goals (2005)
- no poverty, hunger ; health & well-being.

MODULE QUIZ 28.3

1. Which of the following is *least accurate* of the 2015 Paris Agreement on climate risk?
   A. Agreed to limit global temperature rises to +2 degree Celsius versus 2015 levels.
   B. Voluntary pledges from countries to reduce carbon emissions.
   C. Insufficient current reductions in emissions to meet the Paris Agreement targets.
2. Which of the following is *least likely* to be an example of climate transition risk?
   A. Insurers refuse to renew insurance on a coastal property.
   B. Carbon regulation bans the sale of fossil fuel–powered automobiles from 2030.
   C. Carbon taxes increase the cost of goods sold for a manufacturer.
3. **Explain** the concept of a "just" transition, and **identify** the type of risk associated with this concept.

1. A
2. A (considered chronic climate risk)
3. "Just" transition relates to social risk. Fairness Justice & equality are important. Business decisions can have impacts on employees, local communities, & entire towns & cities. "Just" transitions ensure that support & communication is provided to assist people impacted & minimize the negative impacts of transitions.

Module 28.4.

5-step liquidity risk management process:

1. Establish Liquidity risk param.
2. Access the liquidity of current portfolio & monitor evolution over time.
3. Develop CF Model.
4. Stress test liquidity neeels & CF projections.
5. Develop emergeney plan

A good starting point for developing liquidity parameters with external managers is to look at the legal terms in place governing redemption notices and lockups. In the case of internal investment management, a more granular assessment can be made on the types of securities being held and gauging what can be sold over different time frames during a financial crisis.

(Module 28.4, LOS 28.e)

/ /