

PFL Academy

Teacher Guide: Chapter 65 — Investment Portfolio Diversification

OVERVIEW

TIME	MATERIALS	PREREQUISITES
45-50 Minutes	Student Activity Packet	L-47: Investment Types, L-64: Risk and Return

LESSON FLOW

5 min THE CHALLENGE

- Read Destiny vs. Jordan story. Emphasize: Destiny had higher PEAK but lower ENDPOINT.
- Discussion: "Why did Destiny end up with less money even though she gained more initially?"
- Key insight: Diversification's true value is preventing catastrophic losses that force panic.

10 min CORE CONCEPTS

- Explain correlation scale: +1 to -1. Draw visual examples.
- Use "eggs in basket" analogy but make it mathematical.
- Quick check: "Which reduces risk more—two tech stocks or one stock plus bonds?"

25-30 min APPLY IT

- **Part A (10 min):** Correlation table analysis and 50/50 split calculation.
- **Part B (10 min):** Age-appropriate allocations. Use "120 minus age" as guideline.
- **Part C (5-10 min):** Rebalancing calculation—ensure students understand the sell/buy action.

10 min CHECK YOUR UNDERSTANDING

- Q3 calculation is important: shows diversified investor wins despite lower returns.
- Q5 personal reflection encourages honest risk assessment.

DIFFERENTIATION

Support

- Focus on correlation concept with visual demonstrations.
- Walk through 50/50 calculation step-by-step on board.
- Use simplified age allocations: young = 90/10, mid = 70/30, pre-retire = 50/50.

Extension

- Calculate portfolio variance using correlation coefficients.
- Research actual asset class correlations during 2008 and 2020 crises.
- Design a detailed 5-asset-class portfolio with rebalancing triggers.

ANSWER KEY

Part A: Correlation and Diversification

1. Two tech stocks have +0.85 correlation—they move almost together. When tech sector crashes, BOTH fall. Stocks + bonds have +0.15 correlation—when stocks fall, bonds often hold steady or rise. Different behavior = better protection.

2. 100% in A: $\$10,000 \times -20\% = -\$2,000$ loss

50/50 split: $(\$5,000 \times -20\%) + (\$5,000 \times +10\%) = -\$1,000 + \$500 = -\$500$ loss

Diversification saved \$1,500 (75% less loss)

Part B: Age-Appropriate Asset Allocation

Investor 1 (Age 25): ~90-95% stocks, 5-10% bonds. Long 40-year horizon allows high volatility acceptance. Time to recover from crashes. Maximize growth.

Investor 2 (Age 55): ~60-65% stocks, 35-40% bonds. Shorter horizon, protecting accumulated wealth. Still need some growth for 10+ years in retirement.

Part C: Rebalancing Scenario

3. Total: $\$84,000 + \$30,900 = \$114,900$

Stocks: $\$84,000 / \$114,900 = 73\%$

Bonds: $\$30,900 / \$114,900 = 27\%$

Drifted from 70/30 to 73/27

To rebalance to 70/30:

Target stocks: $\$114,900 \times 70\% = \$80,430$

Target bonds: $\$114,900 \times 30\% = \$34,470$

Action: Sell \$3,570 stocks, buy \$3,570 bonds

Check Your Understanding

1. B (Unsystematic risk)

2. Destiny's assets were highly correlated—when tech crashed, everything crashed together. No protection. Jordan had stocks AND bonds—when stocks fell, bonds buffered the loss, preventing panic.

3. Diversified (8% actual): $\$500/\text{mo} \times 30 \text{ yrs} \approx \$680,000$

Concentrated (5% actual due to behavioral errors): $\approx \$400,000$

Diversified wins by ~\$280,000 because you ACTUALLY stay invested.

4. Rebalancing forces selling assets that have risen (high prices) and buying those that have fallen (low prices). It feels wrong because we want to "let winners run" and avoid "throwing money at losers." But mechanically, it enforces discipline.

COMMON MISCONCEPTIONS

Misconception	Clarification
"Diversification means owning lots of different stocks."	True diversification requires DIFFERENT asset classes with low correlation. 50 tech stocks still crash together. Need stocks + bonds + international + real estate for real protection.
"Diversification reduces returns."	Diversification reduces VOLATILITY, not necessarily returns. More importantly, it enables you to actually ACHIEVE returns by preventing panic-selling.

"Young people don't need bonds."

Small bond allocation (10-15%) provides "dry powder" to rebalance into stocks during crashes, potentially improving returns while slightly reducing volatility.