



MODULE 03 / INVESTING & RETIREMENT

Invest with a goal in mind.

Understand the assumptions between today's contributions and tomorrow's spending.

Your take-away

An investment inventory, a retirement assumption sheet and a clear funding bridge.

By the end, you can

- Connect risk and access to the date money is needed.
- Distinguish nominal, real and after-cost returns.
- Understand retirement timing and the limits of projections.

Read. Work it out. Apply it.

Read the concepts and worked example first. Use the worksheet for your own decision, then answer the eight questions before turning to the answer key. Open the linked tools when you are ready to apply the ideas.

About 22 minutes with exercises • 8 questions • Version learning-2026.09-v1

Original educational material and fictional examples. This workbook does not assess suitability or provide personalized financial, tax or legal advice.

Keep these checks beside your plan

- I know the underlying investments, not just account names.
- Returns, inflation and spending use consistent units.
- Future funding does not conceal an earlier shortfall.
- I understand that scenarios are not promises.



The essentials

Start with the job the money must do

The time until a goal matters alongside your willingness and ability to absorb loss. Money needed soon and long-term retirement capital have different constraints. Write down the date, amount and currency of the goal before adjusting return assumptions. A higher assumed return cannot make an unaffordable contribution affordable.

A wrapper is not an investment mix

A pension or retirement account is a legal/product wrapper. Its underlying assets might be shares, bonds or cash. Similarly, an ETF is a fund structure, not a guarantee of broad diversification. Review what is inside, concentration, fees and restrictions; two accounts holding the same fund are still exposed to that fund.

Use one set of units

Nominal returns include the effect of changing prices; real returns describe purchasing-power growth. The exact relationship is $(1 + \text{nominal return}) \div (1 + \text{inflation}) - 1$. Keep spending and return assumptions consistent. Fees and taxes can reduce the amount retained, but their treatment depends on the product and jurisdiction.

Terms worth knowing

Asset allocation. The distribution of investments across asset categories.

Diversification. Spreading exposures; it cannot eliminate all investment risk.

Real return. Return measured after adjusting for inflation.

Sequence risk. The effect of the order of returns when cash is entering or leaving a portfolio.

Put it into practice

1. Separate net worth from retirement funding

List accessible investments, restricted pensions and property separately. State pension is future income, not a pot that can be withdrawn today. Confirm when each account or benefit can be accessed. A large future pension does not pay bills during an earlier retirement bridge.

2. State contribution and withdrawal timing

In the Playbook's illustrated monthly models, growth happens during the month and contributions or withdrawals occur at month end. Use an effective monthly investment rate consistent with the annual assumption. A future lump sum starts on its arrival date, not today.

3. Compare adverse paths, not only averages

With withdrawals, poor returns early in retirement can cause lasting damage even if later returns improve. Test lower returns, later lump sums, higher spending and a longer horizon. A deterministic chart does not provide a probability of success or a guaranteed safe withdrawal rate.

When life crosses borders

Check account access after relocation, the treatment of the investment in each relevant country and the currency of future spending. A fund traded in EUR can still own assets exposed to other currencies.

Before you decide

Counting home equity and future sale proceeds twice. If an asset is included in the current pot, adding its full future sale proceeds can duplicate funding. Treat the sale as a conversion of an existing asset or exclude the overlapping initial value.

Reading volatility as the maximum possible loss. A standard deviation or normal-distribution loss metric is an assumption-based summary. Extreme losses, leverage, illiquidity and changing correlations can fall outside that picture.

Calling 4% universally safe. A withdrawal percentage is a scenario input. Horizon, market sequence, costs, taxes, other income and flexibility affect whether the plan lasts.



03 / WORK IT OUT

Same returns, different retirement outcome

Two fictional portfolios each start at €100,000. A €10,000 withdrawal is made at the end of each year. Both experience one +20% year and one -20% year. No fees or taxes are included.

Path	After year 1	After year 2
A: +20%, then -20%	$\text{€}100,000 \times 1.20 - \text{€}10,000 = \text{€}110,000$	$\text{€}110,000 \times 0.80 - \text{€}10,000 = \text{€}78,000$
B: -20%, then +20%	$\text{€}100,000 \times 0.80 - \text{€}10,000 = \text{€}70,000$	$\text{€}70,000 \times 1.20 - \text{€}10,000 = \text{€}74,000$

Same two annual returns; €4,000 difference after withdrawals

Without withdrawals, both sequences would finish at €96,000: $\text{€}100,000 \times 1.20 \times 0.80$. With withdrawals, the order matters. Selling or withdrawing from a smaller pot after the early loss leaves less capital to participate in the recovery.

Your turn

Try it: nominal return is 5% and inflation is 2%. What is the real return, before other costs?

Write your answer here; the worked solution is on page 8.



04 / MAKE IT YOURS

Your working notes

Decision: _____ Review date: _____

Use this page for estimates and questions. Keep account numbers, tax IDs and other sensitive records in an appropriate secure location.

1. Goal amount, spending currency and first withdrawal date

2. Accessible assets versus restricted accounts and property

3. Contribution amounts and dates; fees and tax assumptions

4. Nominal or real return basis and matching spending basis

5. Pension start dates, future lump sums and adverse scenarios

My next action and when I will take it

Return to these notes after the knowledge check. Relevant tools and source references are on page 9.



05 / CHECK YOUR UNDERSTANDING

Knowledge check 1-4

Choose one answer for each question. Answers and explanations are on page 8.

1. Two accounts hold exactly the same fund. What does opening the second account do to investment diversification?

- A. Automatically halves risk
- B. Does not create a second independent exposure
- C. Guarantees a higher return
- D. Removes currency risk

2. With a 5% nominal return and 2% inflation, what is the exact real return rounded to two decimals?

- A. 7.00%
- B. 3.00%
- C. 2.94%
- D. 1.50%

3. Which path in the example ends with more money?

- A. Path A, at €78,000
- B. Path B, at €78,000
- C. Both end at €96,000 with withdrawals
- D. Both end at €74,000

4. What would both example portfolios hold after two years with no withdrawals?

- A. €100,000
- B. €104,000
- C. €80,000
- D. €96,000



05 / CHECK YOUR UNDERSTANDING

Knowledge check 5-8

Choose one answer for each question. Answers and explanations are on page 8.

5. A pension starts at age 67 and work stops at 60. What needs separate funding?

- A. Only spending after age 67
- B. The period from 60 until pension income begins
- C. Nothing if a pension exists
- D. Only the final year of life

6. What does a portfolio risk estimate describe?

- A. A guaranteed maximum loss
- B. An insurer's promise
- C. An output conditional on the specified model and assumptions
- D. A certified suitable portfolio

7. When should an uncertain future inheritance start contributing to a projection?

- A. From today with guaranteed growth
- B. Only after its stated assumed arrival, with uncertainty tested
- C. At birth
- D. As both current capital and a future lump sum

8. Which statement about a 4% withdrawal input is correct?

- A. It guarantees no depletion
- B. It works in every country and horizon
- C. It is a scenario assumption whose sustainability depends on circumstances
- D. It automatically includes taxes and fees



Answers & explanations

1. B - Does not create a second independent exposure

Account count and investment exposure are different. The same fund remains the same exposure.

2. C - 2.94%

$1.05 \div 1.02 - 1$ is approximately 2.94%. Simple subtraction is an approximation.

3. A - Path A, at €78,000

Path A finishes at €78,000 and B at €74,000. The early loss is more damaging with withdrawals.

4. D - €96,000

$€100,000 \times 1.20 \times 0.80 = €96,000$. A 20% gain and 20% loss do not cancel in compounded money terms.

5. B - The period from 60 until pension income begins

Future pension income cannot fund the earlier bridge unless there is another accessible source.

6. C - An output conditional on the specified model and assumptions

Modelled volatility or normal-distribution loss is not a bound on all possible outcomes.

7. B - Only after its stated assumed arrival, with uncertainty tested

Timing matters. An assumed inheritance should not be treated as already available, and its uncertainty needs a scenario.

8. C - It is a scenario assumption whose sustainability depends on circumstances

A chosen percentage does not establish safety. Timing, returns, longevity, costs and other income matter.

Worked answer: your turn

$1.05 \div 1.02 - 1 = 0.0294118$, or approximately 2.94%. Subtracting 2% from 5% gives a rough approximation, not the exact result.

A score checks these concepts, not your readiness to make a financial commitment. Revisit any missed ideas before applying them.

07 / TAKE THE NEXT STEP

Use your Playbook

Portfolio risk

Review named exposures and entered risk assumptions; do not treat prompts as trade instructions.

Retirement & mix

Confirm accessibility, timing, real-return assumptions and retirement bridge.

FIRE calculator

Compare spending, saving and pension timing under explicit assumptions.

Sources & scope

Original explanations and fictional worked examples. These official references support the background concepts; local rules and exclusions still apply.

[SEC Investor.gov: Asset allocation and diversification](#)

Risk tolerance, time horizon, diversification and rebalancing.

[SEC Investor.gov: How fees affect your portfolio](#)

How ongoing costs compound over time.

[Your Europe: State pensions abroad](#)

Claims, different pension ages and coordination of EU contribution periods.

Source review: 6 September 2026. This is an English-language learning edition. EUR, USD and BRL examples use explicitly stated fictional inputs; they are not live exchange quotes.

Tool links will work when the matching website release is published. Before launch, open the corresponding HTML pages in your site preview. Review model assumptions before using an output.