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You've Got to Speculate to Accumulate: Financial Markets and Portfolio Investments

Key Stage 5 Business Resource 3

2019

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Resource Three Overview

Topic	Financial Investments and Returns
A-Level Modules	Capital investments, returns
Objectives	After completing this resource you should be able to understand:

- ✓ What financial investments are and how to calculate their returns.
- ✓ Why some stocks earn higher return than others.
- ✓ What the reasons behind fluctuation in security prices are.

Instructions

1. Read the data source
2. Complete the activities
3. Explore the further reading

Context

In an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth. In finance, an investment is a monetary asset purchased with the idea that the asset will provide income in the future or will later be sold at a higher price for a profit.

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Data Source

Section A

What are financial investments?

- Stocks and bonds are financial investments

- In general, investments can be:

    - ✓ Real investments: hey require an input of physical resources today and deliver an output of resources tomorrow

    - ✓ Financial investments: claims to the output produced by real investments

- General point: people with productive ideas are not the same as people with wealth

- Stocks and bonds allow wealth to be transferred to people with ideas, who can use it productively

Example: A company with productive ideas in need of cash issues shares of stock to investors

- Proceeds used to build factory generating revenues

- After paying workers and depreciation, company left with earnings

- Some earnings paid to shareholders as dividends

- stocks = ownership

Deep Dive

Later, to expand, company issues corporate bonds that promise fixed payment to bondholders

- bonds = borrowing (debt)

Stocks and bonds are traded in financial markets, where people (including you) can purchase them

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Section B

How should we measure
the performance of
financial investments?

Returns

Let P_t denote the price of a security (e.g., a stock) at time t

Let D_{t+1} be the dividend paid by the stock on date $t+1$

Then the gross simple return between t and $t+1$ is a measure of how well a security performs:

$$1 + R_t = \frac{P_{t+1} + D_{t+1}}{P_t}$$

Higher returns mean greater earnings per amount invested.

Gross and net returns

Consider the following data for Microsoft:

Price 08/25/2011	Dividends during year	Price 08/24/2012
$27.66	$0.52	$24.64

The gross return between August 25 2011 and August 24 2012 is:

$$\frac{P_{t+1} + D_{t+1}}{P_t} = \frac{24.64 + 0.52}{27.66} = .910$$

The net simple return is:

$$R_{t+1} = \frac{P_{t+1} + D_{t+1}}{P_t} - 1$$

In the example, net return = –0.99 or –9%

Multi-period returns

How should we measure the performance of financial investments over multiple years?

- ✓ Answer: gross return between t and $t+2$
- ✓ This is return from holding stock between t and $t+1$, reinvest dividends and hold until $t+2$

Formally, the two-period compound return is:

$$1 + R_{t,t+2} = (1 + R_{t+1})(1 + R_{t+2})$$

Average returns

What is the average annual return?

Consider the case where there are only two years: year *t+1* and year *t+2*.

One way to compute average return is simply to take the arithmetic mean:

$$R = \frac{R_{t+1} + R_{t+2}}{2}$$

Another way is to calculate geometric average.

Because of compounding, calculating the arithmetic average may be misleading. Instead, we want a return *R* such that:

$$(1 + R)(1 + R) = (1 + R_{t+1})(1 + R_{t+2}) \text{, or}$$
$$R = [(1 + R_{t+1})(1 + R_{t+2})]^{1/2} - 1$$

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Activities

Activities

1. Calculate return of a stock over 2 periods t and $t+2$, given that R_{t+1}=10% and R_{t+2}=20%

2. What is the average annual return, where return in year 1 is 30%, while return in year 2 is 0%? Find both arithmetic and geometric averages.

3. Does it mean that earning 15% per year for two year is the same as the investment in question 2?

4. Consider a one-month investment in Microsoft stock. Suppose you buy the stock in month $t-1$ at P_{t-1}= \$85 and sell the stock the next month for P_t = \$90. Further assume that Microsoft does not pay a dividend between months $t-1$ and t. Find the one-month simple net and gross returns.

5. Continuing with the previous example, suppose that the price of Microsoft stock in month t – 2 is \$80 and no dividend is paid between months t – 2 and t. Calculate the two-month net return, two one-month returns, and the geometric average of the two one-month gross returns.

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Further Reading

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Explore

Independent research

Khan Academy lectures:

www.khanacademy.org/economics-finance-domain/ap-macroeconomics/ap-financial-sector/nominal-v-real-interest-rates-ap/v/real-and-nominal-return

Books:

"The intelligent investor" by Benjamin Graham

"Value investing" by Christopher Browne

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