



FACULTY/COLLEGE	College of Business and Economics
SCHOOL	School of Economics
CAMPUS(ES)	APK
MODULE NAME	Economics 3C
MODULE CODE	ECO3CA3
SEMESTER	First
ASSESSMENT OPPORTUNITY, MONTH AND YEAR	Final Summative Assessment June/July/August 2019

ASSESSOR(S)	Ms Bonolo Thobejane and Everton Muberekwa		
MODERATOR(S)	Prof L. Bonga-Bonga		
DURATION	3 hours	TOTAL MARKS	100

NUMBER OF PAGES OF QUESTION PAPER (Including cover page)	6
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INSTRUCTIONS:

- This is a closed-book assessment
- Read the questions carefully and answer only what is required.
- Number your answers clearly and correctly as per the question paper.
- Write neatly and legibly on both sides of the paper in the answer book, starting on the first page.
- Round off all final answers to four decimal points

Section A**[20]**

1. "In a competitive financial market, there is "no free lunch". This implies that investors should expect fewer opportunities of obtaining abnormal returns from securities that are underpriced. Explain the implication of "no free lunch" in the context of risk-return trade-off and efficient market. (8)
2. When constructing an investment portfolio, investors tend to use the asset allocation approach.
 - a. Define asset allocation. (2)
 - b. Making reference to the fund factsheet attached, explain the composition of the Foord Balanced fund asset allocation, investment objective and investor profile. (4)
3. Financial assets are claims to the income generated by real assets. One of the commonly used financial asset is fixed income. Explain what fixed income is and distinguish between the money market and capital market. (6)

Section B**[30]**

1. Thando T. wants to invest in a balanced fund that is expected to deliver an attractive performance of 15%. However, she is concerned about inflation eroding this performance. The expected inflation rate is 7.5%. Calculate the exact return that Thando can expect to get taking into account the expected inflation rate. (2)
2. Calculate a portfolio's Sharpe ratio when its risk premium is 8% and the variance is 49. (2)
3. Explain diversification and distinguish between systematic risk and non-systematic risk. Provide an example for each type of risk. (8)
4. State whether the following statements are true or false and explain why:
 - a. It is possible that the Arbitrage Pricing Theory is valid and the Capital Asset Pricing Model is not valid. (2)
 - b. It is possible that the Capital Asset Pricing Model is valid and Arbitrage Pricing Theory is not. (2)
5. What must be the beta of a portfolio with an expected return of 20%, if the risk free rate of return is 5% and the expected return of the market is 15%? (3)

6. A stock is selling for R100. It will pay a dividend of R9 per share at the end of the year. Its beta is 1. What do investors expect the stock to sell for at the end of the year?

Assume the risk free rate is 8% and the expected rate of return on the market is 18%. (3)

7. Consider the following data for a one-factor economy. All the portfolios are well diversified:

Portfolio	E(r)	Beta
A	10%	1
B	4%	0

Suppose another portfolio C is well diversified with a beta of $2/3$ and expected return of 9%. Would an arbitrage opportunity exist? If so, what would the arbitrage strategy be? Explain. (8)

Section C

[20]

1. Briefly describe the notion of the efficient market hypothesis and the information sets that are included in each form of the hypothesis. (4)
2. What is a random walk? Why is it plausible to relate efficiency to the random walk model? (3)
3. Explain how informational efficiency leads to allocative efficiency. (3)
4. Use an appropriate diagrammatic sketch to explain efficient and inefficient price reactions to bad news under EMH: Hint (include delayed and over-reactions) (5)
5. Briefly explain the behaviouralist's interpretation of the momentum effect as a resultant of the conservatism bias. (3)
6. Briefly explain the behaviouralist's interpretation of the reversal effect due to the representativeness bias. (2)

Section D**[10]**

1. Match each concept on the right column to the explanation on the left column.
Write the alphabet that matches the explanation. (10)

Explanation	Concept
i. Investors are slow to update their beliefs given new evidence.	A. Behavioural Finance
ii. Investors are reluctant to bear losses due to their unconventional decisions.	B. Overconfidence
iii. Investors exhibit less risk tolerance in their retirement account versus their other stock accounts.	C. Representativeness
iv. Investors disregard sample size when forming views about the future from the past.	D. Regret avoidance
v. The tendency of people to overestimate the precision of their beliefs or forecasts, and they tend to overestimate their abilities.	E. Mental accounting
vi. Models of financial markets that emphasise potential implications of psychological factors affecting	F. Breadth
vii. Decisions are affected by how choices are posed.	G. Conservatism
viii. Behavioural theory that investor utility depends on gains or losses from starting position, rather than on their levels of wealth	H. Framing
ix. Recent performance of a given stock or industry compared to that of a broader market index	I. Relative Strength
x. The extent to which movements in broad market indexes are reflected widely in movements of individual stock prices	J. Prospect Theory

Section E**[20]**

1. At time=0 you buy a call option on IBM for R 12.50. The option gives you the right to buy 100 shares of IBM stock at time=T at R120. (4)
 - a. What is the profit/loss to you if $ST = R85$?
 - b. What is the profit/loss for the writer if $ST = R90$?
 - c. What is the profit/loss to you if $ST = 125$?
 - d. What is the profit/loss for the writer if $ST = R130$?
2. At time=0 you buy a put option on ITT stock for R9.00. The option gives you the right to sell 100 shares of ITT stock at time=T at R70. (4)
 - a. What is the profit/loss to you if $ST = R55$?
 - b. What is the profit/loss to the put seller if $ST = R68$?
 - c. What is the profit/loss to you if $ST = R75$?
 - d. What is the profit/loss to the put seller if $ST = R83$?
3. What is the difference between an option's price and its payoff? (4)
4. If the underlying stock price is \$30, indicate whether each of the options below is in the money, at the money, or out of the money. (6)

Strike price	Call option	Put option
\$25		
\$32		
\$40		

5. What is the main difference between an American Option and European Option? (2)

INVESTMENT OBJECTIVE

The fund aims to grow retirement fund savings by meaningful, inflation-beating margins over the long term. The fund is managed to comply with the prudential investment limits set for South African retirement funds (Regulation 28 to the Pension Funds Act).

INVESTOR PROFILE

Investors whose risk tolerance is below that of pure equity fund investors and those who require the asset allocation decision to be made for them, within prudential guidelines. Because the fund complies with Regulation 28, it is ideally suited to being a substantial component of any retirement savings portfolio and is especially suitable for retirement funds, pension fund members and holders of contractual savings products. Available as a tax free investment account.

DOMICILE

South Africa

MANAGEMENT COMPANY

Foord Unit Trusts (RF) (Pty) Ltd
VAT Registration Number: 4560201594

FUND MANAGERS

Nick Balkin, Dave Foord, William Fraser and Daryl Owen

INCEPTION DATE

1 September 2002

BASE CURRENCY

South African rands

EQUITY INDICATOR

Indicates the relative weight of equities in the portfolio. A higher weight could result in increased volatility of returns.

CATEGORY

South African - Multi-Asset - High Equity

PORTFOLIO SIZE

R31.8 billion

MINIMUM LUMP SUM / MONTHLY

R50 000 / R1 000

UNIT PRICE (CLASS A)

5173.12 cents

NUMBER OF UNITS (CLASS A)

66.5 million

LAST DISTRIBUTIONS

31/08/18: 62.21 cents per unit
28/02/18: 60.94 cents per unit

BENCHMARK

The market value weighted average total return of the South African - Multi-Asset - High Equity unit trust sector, excluding Foord Balanced Fund.

SIGNIFICANT RESTRICTIONS

Maximum equity exposure of 75%; maximum offshore exposure of 30%; complies with pension fund investment regulations (Regulation 28).

INCOME DISTRIBUTIONS

End-February and end-August each year.

INCOME CHARACTERISTICS

Medium yield, approximately double that of a general equity fund. Income distributions are reduced by the annual service charge, which varies with the relative performance of the fund against its benchmark.

PORTFOLIO ORIENTATION

Medium to high weighting in JSE shares and includes exposure to listed property, commodity securities, bonds, money market instruments and foreign assets.

FOREIGN ASSETS

Foreign asset exposure is obtained predominantly via Foord International Fund (FIF) and Foord Global Equity Fund Luxembourg (FGEFL), sub-funds of Foord SICAV domiciled in Luxembourg and Foord Global Equity Fund (FGEF) domiciled in Singapore. FIF is a conservative, multi-asset class fund. FGEF and FGEFL comprise portfolios of global shares and cash. All funds are priced in US dollars.

RISK OF LOSS

Lower than that of a pure equity fund. High in periods shorter than six months, lower in periods greater than one year.

TIME HORIZON

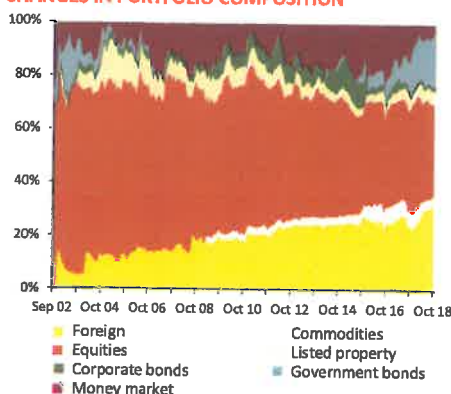
Longer than three years.

ASSET ALLOCATION (MAX LIMITS IN BRACKETS*)

	DOMESTIC %	FOREIGN %	TOTAL %
Equities	36.1	23.8	59.9 (75)
Listed property	4.5	0.5	5.0 (25)
Corporate bonds	2.0	1.7	3.7 (50)
Government bonds	18.9	0.8	19.7 (100)
Commodities	3.5	1.1	4.6 (10)
Money market	2.8	4.3	7.1 (100)
TOTAL	67.8 (100)	32.2 (30)	100.0

* Market value breaches (if any) to be rectified within 12 months

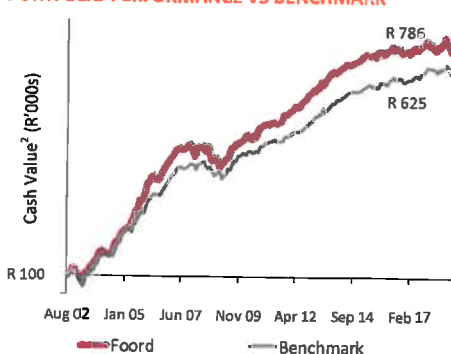
CHANGES IN PORTFOLIO COMPOSITION



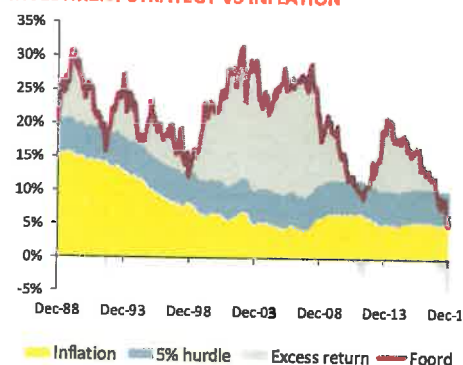
TOP 10 INVESTMENTS

SECURITY	ASSET CLASS	MARKET	% OF FUND
RSA 10.5% (R186)	Gov bonds	ZAF	18.8
Foord Global Equity Fund	Foreign assets	LUX/SGP	16.7
Foord International Fund	Foreign assets	LUX	14.0
BHP Group	Equity	ZAF	4.7
Sasol	Equity	ZAF	3.8
RMB Holdings	Equity	ZAF	3.7
Naspers "N"	Equity	ZAF	3.6
Newgold	Commodity	ZAF	3.5
Capital & Counties	Property	ZAF	3.2
British American Tobacco	Equity	ZAF	3.2

PORTFOLIO PERFORMANCE VS BENCHMARK



INVESTMENT STRATEGY VS INFLATION



In managing retirement portfolios, Foord aims to achieve returns that exceed inflation plus 5% per annum over any rolling five-year period. The Investment Strategy vs Inflation chart shows the annualised returns over rolling 5 years achieved by Foord on a composite of similar portfolios since the inception of the strategy on 1 January 1984 (gross of annual fees). This composite return information includes the market value weighted returns of the Foord Balanced Fund unit trust from 1 September 2002. Foord Balanced Fund unit trust is now the single largest portfolio in the composite. The chart illustrates that the actual composite return achieved for investors over any rolling five-year period has never dipped below the South African inflation rate. It also demonstrates that real returns of 5% per annum are consistently achievable in mandates of this nature when measured over the appropriate long-term period.

PORTFOLIO PERFORMANCE (PERIODS GREATER THAN ONE YEAR ARE ANNUALISED ¹)

	CASH VALUE ²	SINCE INCEPTION	LAST 15 YEARS	LAST 10 YEARS	LAST 7 YEARS	LAST 5 YEARS	LAST 3 YEARS	LAST 12 MONTHS	THIS MONTH
FOORD ^{3,4}	R 786 368	13.4%	13.2%	10.4%	8.9%	4.1%	0.6%	-3.8%	0.7%
BENCHMARK ^{4,5}	R 624 730	11.9%	11.8%	9.3%	8.4%	4.8%	2.4%	-5.3%	0.5%
FOORD HIGHEST ^{3,4,6}		61.0%	61.0%	28.5%	27.0%	13.9%	13.8%	-3.8%	
FOORD LOWEST ^{3,4,6}		-16.8%	-16.8%	-8.1%	-8.1%	-8.1%	-8.1%	-3.8%	

¹ Converted to reflect the average yearly return for each period presented

² Current value of R100 000 notional lump sum invested at inception, distributions reinvested (graphically represented in R'000s above)

³ Class A

⁴ Net of fees and expenses

⁵ Source: Morningstar, performance as calculated by Foord

⁶ Highest and lowest actual 12 month return achieved in the period