UNIVERSITY OF JOHANNESBURG

Department of Finance and Investment Management

Retirement Finance

BLB18x7

LAST ASSESSMENT OPPORTUNITY

October 2015

Time: 3 hours **Marks: 150**

Assessor: Mrs J. Bolton

Moderators: Mrs C. Marx

INSTRUCTIONS:

- This paper consists of 19 pages
- Answer ALL questions in the **answer book** provided.
- Silent, non-programmable calculators may be used, unless otherwise instructed.
- Where applicable, show all calculations clearly.
- Work to FOUR decimal places and indicate final answers in TWO decimal places unless otherwise stipulated.
- Answers with Tippex and in pencil will **not** be marked.
- Scratch out all open spaces and empty pages.
- Make sure you hand in all the required pages.
- **NB!** Give concise and properly structured answers.
- Good luck!

Question	Topic	Marks	Time
1	Private equity and venture capital	33	40 minutes
2	Hedge funds	14	15 minutes
3	Property	34	45 minutes
4	Retirement fundamentals	18	30 minutes
5	Privatization	31	30 minutes
6	Objective choice questions	20	20 minutes
		150	**180 minutes**

QUESTION 1 [33 marks]

The 'taxi service' industry has received a lot of market attention since the launch of companies such as Uber. Although still a young industry, experts believe it has a lot of future potential and is seen as a highly attractive industry.

You are in the process of evaluating a private company, Zo-Go Inc., which is a new innovative company providing taxi services, for an IPO.

The reported Income Statement of Zo-Go:

Zo-Go

Income Statement as of July 2015

	As Reported (R)
Revenues	45,600,000.00
Cost of goods sold	25,350,000.00
Gross profit	20,250,000.00
Selling, general and admin expenses	5,670,000.00
EBITDA	14,580,000
Depreciation and amortisation	1,200,000
EBIT	13,380,000
Pro Forma Taxes (at 40%)	5,352,000
Operating income after taxes	8,028,000

As part of your research you note the following facts affecting the most recent year's reported results:

Two brothers James and John Harel are the founding members and main shareholders of this company. John is the CEO of Zo-Go and his compensation for the year was R2.5M. Your executive compensation consultant believes a normalised compensation expense of R750 000 for a CEO of a company like Zo-Go is appropriate. Compensation is included in selling, general and admin expenses (SG&A).

Certain corporate assets including two brand new Ford mustangs, a pub in Newtown and a speedboat which is housed at the Vaal marina, are in your judgement not required for the core operations of the company. Fiscal year expenses associated with the two mustangs was R240 000, R200 000 of which went to the cars upkeep, vehicle taxes, and insurance, and is reflected in SG&A expenses, and a depreciation expense of R40 000. Expenses were R400 000 and R1000 for the pub and boat housing rental, respectively.

All other asset balances (including cash) are believed to be at normal levels required to support current operations.

Zo-Go's debt balance of R3 500 000 (interest rate of 9.5%) was lower than the optimal level of debt expected for the company. As reported interest expense did not reflect an optimal charge,

and you therefore believe the use of an earnings figure that excludes interest expense altogether, specifically operating income after taxes, will facilitate the assessment of Zo-Go.
You decide to take an income approach to value Zo-Go and considering the nature of the business, its size, and the financial leverage used by competitors, you conclude that Zo-Go has a low level of debt relative to its capacity and that it will be optimal to increase its debt once it goes to IPO. Due to this and your analysis (using a long term growth rate of 6.5%) you determine the FCFF for this year to be R13 135,200.

Because of its years of operating successfully and its owner's conservative nature, Zo-Go has operated with little debt. Analysis of public companies in Zo-Go's industry indicated several guideline public companies for possible use in estimating a discount rate for Zo-Go.

You have decided upon the following estimates:

Optimal ratio of debt to total capital	30%
Actual ratio of debt to total capital	9%
Risk free rate	3.6%
Beta (based on similar publically traded companies in the same industry)	1.25
Equity risk premium	5.5%
Small stock premium	2.15%
Company specific risk premium	1.75%
Industry risk adjustment	1.5%
Pretax cost of debt	9.5%
Ratio of debt to total capital for public companies in the same industry	35%
Tax rate	40%

James, one of the founders of Zo-Go Inc, is in the process of starting a new side business for Zo-Go which will incorporate scooters and motorcycle taxi services for short distance. He plans to call it Zoot. He believes his idea will be hugely successful.

He sought out venture capitalists who were willing to invest in his idea and they have now provided the capital needed as he has moved his idea into operation. No commercial manufacturing or sales have occurred as of yet. So far the capital has been used to support product development and the initial marketing.

James has agreed to a 20% profit share if the company takes off and is willing to allow the venture capitalists to provide their expertise and experiences in the development process.

One of the venture capitalists, Mr Mushai, is evaluating his investment, in James side business, of R3.2 million for four years. Although this industry is highly competitive, he believes this side business has potential and he will get back about R11.5 million at the end of four years. He then plans to sell his share in this side business. Mr Mushai's research reveals that similar companies have the following conditional probabilities of failure: in year 1 it's 22%, year 2 it's 17%, year 3 it's 14% and in year 4 it's 9%.

REQUIRED:

1.1	Calculate normalised earnings (Net income for the financial year ended 31 July 2015).	**(4)**
1.2	Calculate the cost of equity using the Expanded CAPM method	**(3)**
1.3	Calculate the WACC using the optimal capital structure	**(4)**
1.4	Calculate the value of equity using the capitalized cash flow method	**(3)**
1.5	What stage would best describe the venture capital investment in James's side business, Zoot? Name and explain	**(2)**
1.6	What investment criteria would Mr Mushai have applied when analysing Zoot for possible investment and did Zoot meet this criteria?	**(5)**
1.7	If Mr Mushai requires a cost of equity of 15%, what is Zoot's expected NPV and what conclusions will Mr Mushai come to?	**(4)**
1.8	There are 3 categories of private equity investing, name and explain them	**(6)**
1.9	There are three market approach methods of private company valuation. Name two of them.	**(2)**

QUESTION 2 [14 marks]

Suppose at the beginning of year 1 a hedge fund has a net asset value of 100, and throughout the year the fund realizes a 28% return. The benchmark used to calculate fees is LIBOR, and is currently sitting at a rate of 4.15%. Fees for the fund are calculated in excess of this rate, at a fixed rate of 2% and 15% of the upside above cash.

REQUIRED:

2.1 In an investor entered this hedge fund with $1 400 000, what would the investor pay in fixed fees and fees on the upside of excess cash? **(4)**

2.2 Taking the fees into account, what would the value of the investor 'share' be worth? **(2)**

2.3 How do hedge funds differ from traditional funds? **(4)**

2.4 What does the Dodd-Frank Wall street reform Act require of hedge fund advisors? **(2)**

2.5 Hedge funds rely on two exemptions under the Investment Company Act, what are they? **(2)**

QUESTION 3 [34 marks]

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REQUIRED:

Part A

3.1 A beach front resort has recently come onto the market for R50 000 000. A real estate investment firm is evaluating a beach front resort for possible purchase. They plan to buy and hold the property for at least 3 years before the consider selling it. **(11)**

The investment firm expects to arrange finance for the purchase by issuing 3-year, 10% annual pay coupon bonds, with a par value of R100 000 each. Market rates are expected to be at 10% per annum when the bonds are issued. The firm is subject to normal companies' tax of 30%.

The following information can be found in the bond market:

- The 12-month spot rate is equal to 7.25%.
- The 2-year Treasury 7% coupon bond is trading at 97.78.
- The 3-year Treasury 7% coupon bond is trading at 95.80.
- The 4-year Treasury 8% coupon bond is trading at 94.72.
- The 5-year Treasury 9% coupon bond is trading at 89.00.

Assume that all issues are on-the-run annual pay treasury securities, and that the property commands a liquidity premium of 200 basis points over the theoretical spot rate.

The after tax cash flows and after tax equity reversion value is as follows:

Year	**Cash flow**
1	1 770 400
2	2 880 480
3	2 670 000
After tax equity reversion value	83 375 000

3.1.1 Compute the debt service (1)
3.1.2 If they plan to sell the property after 3 years, what will the unpaid mortgage be? (1)
3.1.3 Derive the appropriate discount rate for each of the cash flows (5)
3.1.4 Calculate the value of the property (4)

3.2 You are a property fund manager and are assessing whether the Bergview Mall should be included in your portfolio. **(5)**

This investment is expected to be held for 4 years. Its net operating income is expected to be R15 850 000 for year 4 and will grow at 10%. The exit capitalisation rate is 15% and the expected tax rate is also 40%. Selling expenses are estimated to be 15% of its sale price. The initial mortgage value would be the purchase price of R56 593 849.02 (taken out at time of purchase), amortised at a rate of 10% over 10 years.

What is the Bergview mall's expected After tax equity reversion?

3.3 Oceans 7 Casino has the following: **(6)**

Overall Cap Rate	29.60%
PI	1.2932
IRR	21.93%

Interpret the Cap rate, PI and IRR of ***Oceans 7 Casino***

<u>Part B</u>

Article: "SA REITs are finally a reality – what will this mean for investors?"

"It's taken six years for the SA REIT to come into being, largely due to its complex framework, which has an impact on a number of stakeholders, including government. National Treasury, SARS, the FSB, JSE and the Association of Property Unit Trusts all provided input."

3.4 What is REIT? **(2)**

3.5 Besides REITS what are the other types of property entities listed on the JSE? **(3)**

3.6 If REITs from part of an RA, pension, provident and preservation fund what benefits do investors get? **(1)**

3.7 What are the conditions/ requirements for SA REITs? **(3)**

QUESTION 4 [18 marks]

The following is an extract from a company's history:

Case Study

Lex Corp

September 2015

LexCorp is an aerospace engineering firm located in the top floor offices of the Daily Planet building in Metropolis and has over time become one of the world's largest, most diversified multinational conglomerates.

The company has grown through acquisitions, acquiring "Atlantic Coast Air Systems", renaming them to "LexAir", and Southwestern Petroleum which it renamed "LexOil". This pattern of acquisition continued to include the Daily Planet and several other Metropolis businesses.

LexCorp now has interests in utilities, waste management, computer hardware and software, bio-engineering, weapons, oil, communications, airlines, real estate, media, financial services, robotics, security, stock brokerage houses, and food. It has been estimated that LexCorp either directly or indirectly employs nearly two-thirds of Metropolis' population of 11 million people, dominating commerce around much of the world.

The following is an extract from its financial statements regarding its retirement policy and pension fund:

Change in fair value of plan assets		
($ billions)	2014	2015
Fair value (opening balance)	6103	7855
Actual return on plan assets	508	618
Employer contribution	970	995
Member contribution	26	39
Benefit payments	-400	-400
Foreign currency adjustments	30	45
Fair value at the end of year	7237	9152

Change in projected benefit obligation (PBO)		
($ billions)	2014	2015
Liability (opening balance)	6982	8120
Service cost	280	350
Interest cost	307	415
Actuarial gain/ (loss)	178	300
Plan amendment gain/ (loss)	-12	-18
Benefit payments	-400	-400
Member contributions	26	36
Foreign currency adjustments	50	41
Liability at end of year	7411	8844

With the changing Retirement environment, the company decided to shift the pension fund from a defined benefit to a defined contribution fund. In addition to this move to the defined contribution fund, they have decided to readjust their pension asset portfolio.

LexCorp is contemplating one of two asset allocation options for its defined contribution pension fund:

Option 1:
20% Equity:
- the 20% is split equally between 5 large cap shares

20% Bonds:
- 10% is invested in local bonds
- 10% is invested in a foreign listed government bond

25% Cash:
- 20% held on deposit at a bank
- 5% invested in a variety of money market instruments

10% Property:
- 5% invested in property unit trusts
- 5% is invested in foreign property

Option 2:
50% Equity:
- 10% is invested in preference shares of private companies
- 40% is split equally between 20 large cap shares

18% Bonds:
- 18% is invested in a foreign bond

5% Cash
20% Property:
- 10% is invested in property unit trusts (not listed on an exchange)

7% Commodities:
- 7% invested in gold

5% Derivatives:
- 5% is invested in a fund of private equity funds

REQUIRED:

4.1 Briefly explain some of the benefits of changing to a defined contribution for LexCorp (the company). **(2)**

4.2 Discuss the possible risks that the employees of LexCorp might encounter with a defined contribution fund and how does it compares to the defined benefit fund? **(4)**

4.3 What is the funded status of this fund for 2014 and 2015? **(2)**

4.4 Calculate the funding (coverage) ratio for 2014 and 2015, and briefly explain what this means. **(4)**

4.5 Evaluate the two asset allocation options for the pension fund: **(6)**
4.5.1 Comment on why or why not Option 1 would be accepted. Motivate your answer.
4.5.2 Comment on why or why not Option 2 would be accepted. Motivate your answer

QUESTION 5 [31 marks]

> "With limited capacity to adapt quickly to market conditions, large funds must be careful how they design their portfolios for the future."
>
> Blake Evans-Pritchard in his article "Too big to invest? Asset allocation for supersize pension funds".

Read an adaption of the article in Appendix 1 and answer the following questions (you may detach the article if necessary).

REQUIRED:

5.1 The article mentions that: "Many pension schemes have taken steps to derisk, often by reducing exposure to riskier assets..." And Majeed says: "The economic environment going forward is more uncertain than it was before...". **(5)**

5.1.1 What 'riskier assets' are they referring to?

5.1.2 Regarding the quotes above, Pension funds need to adapt their investment strategy. The same investment strategy can be applied when pension funds mature. What would you suggest a pension fund do regarding its asset allocation (either in a volatile market or when pension funds mature)?

5.2 Why do funds with large AUM find it difficult to respond quickly to changes in market conditions? And how can this be managed? (explain briefly using 2/3 sentences) **(3)**

5.3 "Pension funds are, in general, very long-term investors, but they will hold short-term securities (such as money-market securities) for one of two reasons." State and discuss those two reasons. Name and explain those two reasons. **(4)**

5.4 The Pension Protection Fund (PPF) was set up in the UK. What does the PPF do? (Briefly explain, include an explanation of insured pension schemes. Use 5- 8 sentences) **(5)**

5.5 What would Pension/ Retirement funds use swaps for? **(2)**

5.6 What advantage do large pension funds have over smaller pension funds? **(3)**

5.7 According to the article: "The fallout from the financial crisis brought with it a period of reflection among pension funds…". Pension funds are not only facing an uncertain economic environment but facing other challenges such as longevity risk. What are the two issues behind the growing challenges associated with longevity risk? And what impact will this have on an economy? **(4)**

5.8 The article states that going forward the economic environment has become more uncertain then before. Since the financial crises many pension funds have begun facing problems. Due to this many Latin American countries, such as Chile, implemented a pension reform. What is the name of this reform and briefly explain how it works and any possible problems **(5)**

QUESTION 6 [20 marks]

REQUIRED:

6.1 A hedge fund has an annual 2% base management fee plus a 12% fee applied to profits above the risk-free rate, taken to be the Treasury bill rate. The gross return during the year is 27%. What is the net return (return after fees) for an investor if the risk-free rate is 5.25%

A. 22.40%
B. 16.01%
C. 24.37%
D. 29.30%
E. 21.75%

(1)

6.2 Which of the following is **NOT** a way of investing in commodities?

A. Buy the commodity directly
B. Futures contract (most common)
C. Stocks of companies producing the commodity
D. Bonds indexed on some commodity price
E. They are all ways of investing in commodities

(1)

6.3 Calculate the present value of liabilities for the average person in a financial institution. The average statistics of an employee in this institution's Pension Plan are as follows:

Age: 28
Retirement age: 60
Average age that most employees start working at the bank: 23
Average current annual salary is R650,000
The institution uses an accrual factor of $1/60^{th}$ and they use a 5.5% earnings growth rate.
There is a 70% probability the member will remain in the scheme until retirement.
Annuity factor: 8.2693
Discount rate 12%.

A. R47 278.61
B. R470 982.14
C. R1 776 602.55
D. R46 265.69
E. None of the above

(1)

6.4 Why is gold considered to be such a valuable commodity and alternative asset?

A. Allows investors to diversify against risks that affect all stock markets simultaneously
B. Central Banks regard Gold as monetary asset
C. Hedge against inflation
D. It is considered to be liquid and its real value increases during periods of crises.
E. All of the above

(1)

6.5 The different stages of venture capital investing are generally grouped according to the:

A. characteristics of the venture
B. liquidity of the investment
C. investment criteria
D. rights and responsibilities of the investor
E. stage of development of the venture

(1)

6.6 Pension funds use various assets for different reasons, which of the following is TRUE regarding asset uses?

A. Bonds are good long term assets but suffer from volatility, however this can be solved through exchange rate futures.
B. Money market securities are good long term assets but suffer from currency risk.
C. Shares (equity) are good inflation hedges, but suffer from volatility and default risk, however this can be solved through diversification.
D. Real assets are good short term assets but are less liquid.
E. None of the above are true

(1)

6.7 You have been appointed to the board of a poorly run retirement fund. You suggest to your fellow trustee's that you should follow the good governance principles as set out in PF130. The purpose of good governance in a fund should *ensure,* what?

A. Benefits are optimised and the associated investment risks are minimised, or balanced against each other
B. The provision of the benefits and administration of the fund, as well as the cost implications thereof are transparent and quantifiable to the stakeholder
C. Benefits provided in terms of the rules of the fund are actually delivered
D. None of the above
E. All of the above

(1)

6.8 Which of the following statements regarding leveraged buyouts is **FALSE**?

A. Buy companies that are established and are going concerns
B. Investors get involved to increase value of the company
C. Investors normally put up an equity stake of a portion (20-40%) of the total price and borrow the rest
D. Often publicly traded on some exchange
E. None of the above are false – that is they are all TRUE

(1)

6.9 A hedge fund that takes perfectly offsetting long and short positions is best described as a(n):

A. Event-driven fund
B. Long/short fund.
C. Market-neutral fund
D. Global fund
E. Fund of funds

(1)

Use the following information to answer questions: 6.10 – 6.11

An investment firm is evaluating a real estate investment project using the discounted cash flow approach. The purchase price is R9 million, which is financed 10% by equity and 90% by a mortgage loan at a 15% pre-tax interest rate for 15 years. The net operating income (NOI) in the first year is estimated to be R2 655 000. NOI is expected to grow at a rate of 4% every year. The interest on real estate financing for the project is tax-deductible. The marginal income tax rate for the investment firm is 30%. Using straight-line depreciation, the annual depreciation of the property is R370 500. The property's price is expected to have an exit cap rate of 38% after 3 years and if sold will incur selling expenses of 6.5%. Property gains are taxed at 25%.

6.10 What is the debt service amount?

A. R764 688.85
B. R1 539 153.47
C. R1 215 000
D. R1 350 000
E. None of the above

(1)

6.11 In the cashflow from reversion calculation, how much would the unpaid mortgage be after three years?

A. R8 343 164.56
B. R4 950 000
C. R6 257 373.42
D. R2 128 564.46
E. None of the above

(1)

6.12 Which of the following is NOT a private company valuation approach?

A. Asset-based approach
B. Income approach
C. Market approach
D. Management approach
E. All of the above are private valuation approaches

(1)

6.13 Which of the following is *least likely* a disadvantage of the cost approach method of estimating the market value for real estate?

A. The replacement cost of existing improvements may be difficult to determine
B. The investor to make the decision between building and buying a property
C. Estimating the value of the land may be difficult
D. Market value of a property may differ significantly from its construction cost
E. None of the above are disadvantages of the cost approach

(1)

6.14 If a pension fund has a surplus of R307 000, liabilities are valued R6 700 301, and assets are valued at R7 007 301, calculate the funding (coverage) ratio:

A. 0.0458
B. 1.044
C. 0.956
D. 1.046
E. 0.0438.

(1)

6.15 Which fund is exempt from retirement regulation?

A. Government Employees Pension Fund
B. Retirement Annuities
C. Non-funded pension funds
D. Provident funds
E. Under-funded pension funds

(1)

6.16 According to the Global Pension Asset Survey 2015, allocations to 'other' (alternative assets) has increased from 5% to what?

A. 25%
B. 20%
C. 18%
D. 8%
E. None of the above

(1)

6.17 According to the CIA factbook estimates, who has the lowest life expectancy?

A. Niger
B. Monaco
C. Vietnam
D. Chad
E. None of the above

(1)

6.18 According to the CIA factbook estimates, who has the lowest fertility rate?

A. Monaco
B. Singapore
C. Niger
D. Angola
E. Canada

(1)

6.19 Which of the following is NOT TRUE with regards to Occupational schemes:

I. Costs are spread in the form of regular contributions
II. The employer receives a tax advantage
III. Security and stability of employment increased
IV. Available for those who wish to make additional retirement savings

A. I, II, IV
B. II, IV
C. II, III
D. III, IV
E. None of the above

(1)

6.20 Commodities are grouped according to which of the following 3 categories?

A. Energy, metals and livestock
B. Precious metals, oil and agriculture
C. Energy, agriculture and metals
D. Agriculture, oil and industrial
E. Metals, oil and livestock

(1)

Appendix 1

The following is adaption from the following Article:

Too big to invest? Asset allocation for supersize pension funds

Author: Blake Evans-Pritchard
Source: Life & Pension Risk | 07 Jun 2011

"With limited capacity to adapt quickly to market conditions, large funds must be careful how they design their portfolios for the future. Blake Evans-Pritchard reports

All pension funds, big and small, have to make sure they adequately match their assets and liabilities, and avoid the possibility that their coverage slips below what is deemed an acceptable level.
Many pension schemes have taken steps to derisk, often by reducing exposure to riskier assets or seeking a company that is in a position to execute a buy-out. But, for really large pension schemes, such options are often not on the table.

When it comes to asset-liability matching (ALM), larger schemes enjoy many advantages over smaller ones. In particular, they are able to use economies of scale, giving them access to a wider pool of assets and improving diversification. Better internal resources can also help them improve their risk management and investment strategies.

But size brings with it some unique challenges. Funds that have a very large amount of assets-under-management (AUM) often find it harder to respond quickly to changes in market conditions. They are usually unable to adjust their positions quickly, because of the impact that such large-scale transactions could have on the market.

Faced with these difficulties, the importance of planning ahead becomes clear. By developing a portfolio structure that is capable of withstanding changes in the future, fund managers are able to instil a certain degree of versatility into the fund. This not only helps the pension fund sail more smoothly through adverse market conditions, but, should they have to derisk, they will find themselves in a better position to do so.

Jeff Scott, chief investment officer of Alaska Permanent Fund Corporation (APFC), which manages a sovereign wealth fund of $41 billion (£25.3 billion) from the state capital of Juneau, compares managing large investments to piloting a large cruise ship.

"Whereas a small ski-boat can make quick manoeuvres, on a cruise ship you must be very tactical about your moves," he says. "They have to be very long-term and they have to be gradual."

"Denmark's pension giant ATP, which has €76 billion (£66.3 billion) of AUM, is very careful not to find itself locked into positions it cannot get out of as market conditions change. "As a rule of thumb, we try to be liquid enough so that we are able to reduce risk by about 30% within two weeks under normal conditions," says Henrik Gade Jepsen, the Hillerød-based fund's chief investment officer.

For the time-being, ATP is not in a position where it has to derisk, but Jepsen says it always pays to be prepared. He thinks there are two main dangers in adjusting the risk footprint of a very large fund. One is that the risk is broken down in a very uneven way, so that the fund dumps its most liquid assets and holds on to the investments that cannot be easily sold. The other danger is that the fund is forced to sell off assets far too cheaply.

These considerations have fed into ATP's investment strategy. Jepsen explains that the fund's portfolio is divided into five asset classes - equities, government bonds, credit, inflation-protected assets and commodities. Risk is then allocated evenly between all these classes, so that should the fund be in a position where it has to derisk, risk can be reduced equally throughout the portfolio.

Scaling up
In the UK, the Pensions Protection Fund (PPF), which was set up in 2005 as a guarantor of defined benefit pension schemes that become insolvent, has been discovering some of the benefits and challenges to becoming a large investment player.

From humble beginnings six years ago, the PPF's AUM stood at £4.6 billion at the end of last year. Chief investment officer Ian McKinlay predicts the fund will reach £10 billion over the next few years. McKinlay thinks this growth will slow eventually, as the PPF absorbs fewer pension schemes, but even so the fund has had to adjust from being a fledgling operation to being a moderate-sized investor.

"Our strategy and sophistication relies upon and seeks to exploit our scale," says McKinlay. "We are able to invest in a sophisticated way that isn't available to smaller funds. Our size gives us access to non-traditional strategies, which allow greater diversification and better economies of scale."

But scaling up also creates certain difficulties, as McKinlay explains. "Moving to a better diversified strategy can be a challenge because you can't suddenly invest a large amount in, for example, private equity," he says. "If you have a billion pounds to invest, it might take you two or three years to get up to that level of exposure."

The PPF gets around this problem by investing in the private equity secondary market, which offers greater liquidity through investments in funds that have exposure to the equity market, rather than directly in equities themselves.

"If you buy secondaries, this shortens both the period of investment and the period of payback, so we can actually get our economic exposure quickly," says McKinlay.

Pause for thought
The fallout from the financial crisis brought with it a period of reflection among pension funds and other investors about whether they could have weathered the storm better.

Some, such as Calpers, decided to introduce a risk-based allocation strategy, so that they could respond quicker to market uncertainty in the future.

Other pension funds are still making tweaks to their investment strategies and are reluctant to say too much until everything is finalised, due to the sensitivities of telling the market too much about their new direction. A number of European and North American pension funds are now following Calpers down the risk-allocation path.

Majeed thinks that working out how to deal with future economic uncertainty has become a major consideration for very large funds.

"The economic environment going forward is more uncertain than it was before," he says. "We believe that in areas such as inflation, interest rates and GDP growth, we will see more volatility than we would have in the past. So this is reflected in our asset allocation framework."

Read more: http://www.risk.net/life-and-pension-risk/feature/2076814/invest-asset-allocation-supersize-pension-funds#ixzz1VSrRukbq