

ECFS902

Resources Industry Investment Analysis

AFC Term 2 CBD 2015

Dept of Applied Finance and Actuarial Studies

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Disclaimer

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General Information

Unit convenor and teaching staff

Unit Convenor / Lecturer

James Hay

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Contact via Email

Credit points

2

Prerequisites

(Admission to MAppFin or PGCertAppFin or GradDipAppFin) and ECFS866

Corequisites

Co-badged status

Unit description

This unit considers valuation issues that are unique to the minerals and energy industries. This unit is structured around the value chain from exploration through extraction and to the market, and the methods by which resource companies seek to create shareholder value at all of these stages. This unit intends to address two aims. The first is to understand investment decisions that an analyst within a resource company may face; the second is to understand the financial information that resource companies release to the market so that we may compare the performance of resource stocks.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

On successful completion of this unit, you will be able to:

Understand the resource industry value chain and explain how shareholder value may be created at each stage.

Identify and explain relevant resource industry investment factors, how these factors may be assessed and related risks mitigated.

Understand, apply and interpret valuation methods relevant to the resource industry, including their appropriate applications and limitations.

Apply financial statement analysis techniques unique to the resource industry to evaluate

financial performance.

Explain the fiscal regimes applicable to the resource industry, current related issues and debate.

Conduct independent research, analyse and evaluate the performance of specific resource companies' and compare performance of stocks.

General Assessment Information

To pass this unit (requires a Standardised Numerical Grade of 50 or better) the student must pass the final examination.

Assessment Tasks

Name	Weighting	Due
Pre-Unit Assignment	0%	First Class
Class Participation	5%	Refer to iLearn
Case Study Assignment	40%	Refer to iLearn
Final Exam	55%	Refer to Timetable

Pre-Unit Assignment

Due: **First Class** Weighting: **0%**

Summary of Assessment Task

Individual / Group: Individual

Due Date: Start of first class

Grading Method: The Pre-course assignment will be marked on a pass/fail basis. The pre-course assignment must be completed and submitted at the first class in order to be eligible to sit the final exam.

Submission Method: In class

Duration: Refer to Assignment Coversheet

Extension Requests:

- No extensions are permitted.
- Late submission will result in zero marks, unless special consideration is approved by the Director of Studies under the University's Disruption to Studies Policy.

On successful completion you will be able to:

- Understand the resource industry value chain and explain how shareholder value may be created at each stage.
- Identify and explain relevant resource industry investment factors, how these factors may be assessed and related risks mitigated.
- Understand, apply and interpret valuation methods relevant to the resource industry, including their appropriate applications and limitations.
- Apply financial statement analysis techniques unique to the resource industry to evaluate financial performance.

Class Participation

Due: Refer to iLearn

Weighting: 5%

Summary of Assessment Task

Individual / Group: Individual and Group

Due Date: Refer to the Unit's iLearn site

Grading Method: Refer to 'Standards Required to Complete the Unit Satisfactorily'. In addition: Group Exercise: based on a combination of preparation, presentation, trading performance of the group and individual participation.

Submission Method: In class

Duration: Details to be provided by lecturer

On successful completion you will be able to:

- Understand the resource industry value chain and explain how shareholder value may be created at each stage.
- Identify and explain relevant resource industry investment factors, how these factors may be assessed and related risks mitigated.
- Understand, apply and interpret valuation methods relevant to the resource industry, including their appropriate applications and limitations.
- Apply financial statement analysis techniques unique to the resource industry to evaluate financial performance.
- Conduct independent research, analyse and evaluate the performance of specific resource companies' and compare performance of stocks.

Case Study Assignment

Due: Refer to iLearn

Weighting: 40%

Summary of Assessment Task

Individual / Group: Individual

Due Date: Refer to the Unit's iLearn site

Grading Method: Refer to 'Standards Required to Complete the Unit Satisfactorily'. In addition: Group Exercise: based on a combination of preparation, presentation, trading performance of the group and individual participation.

Submission Method: Online via Turnitin the Unit's iLearn site

Duration: Refer to Assignment coversheet

Extension Requests:

- If you have extenuating circumstances that prevent you from submitting your assignment by the due date, please make arrangements with your Lecturer prior to the due date.
- Unless prior arrangements have been made, any late submission of assignments will automatically be penalised. In the absence of special circumstances, the penalty will be 10% of the available marks for the assessment for each business day (or part thereof) they are late.

Other Information:

- Student is required to write a 'research report' for a particular stock.
- Requires the student to apply the knowledge gained from the unit to describe and critique a selected company. Company selection will occur at the end of the last lecture.

On successful completion you will be able to:

- Understand the resource industry value chain and explain how shareholder value may be created at each stage.
- Identify and explain relevant resource industry investment factors, how these factors may be assessed and related risks mitigated.
- Understand, apply and interpret valuation methods relevant to the resource industry, including their appropriate applications and limitations.
- Apply financial statement analysis techniques unique to the resource industry to evaluate financial performance.
- Conduct independent research, analyse and evaluate the performance of specific resource companies' and compare performance of stocks.

Final Exam

Due: Refer to Timetable

Weighting: 55%

Summary of Assessment Task

Individual / Group: Individual

Due Date: Refer to Timetable. Assessments: Different Class Groups have different deadlines. Students should find the timetable and dates relevant to their group at www.mafc.mq.edu.au

Grading Method: Refer to 'Standards Required to Complete the Unit Satisfactorily'. In addition: Group Exercise: based on a combination of preparation, presentation, trading performance of the group and individual participation.

Submission Method: As per MAFC Program Rules & Procedures at www.mafc.mq.edu.au

Duration: 2 hours plus 10 minutes reading time

Examination Conditions:

- All examinations are closed book. However, a calculator is permitted, as noted under 'Calculators' below.
- All unit readings and lecture notes are examinable.
- Exam times and locations are noted in the unit timetable at www.mafc.mq.edu.au.
- Refer to MAFC Program Rules & Procedures at www.mafc.mq.edu.au.

Extension Requests:

- You are expected to present yourself for examination at the time and place designated in the relevant MAFC Timetable at www.mafc.mq.edu.au.
- Deferral of an examination is not permitted, unless special consideration has been approved by the Director of Studies under the University's Disruption to Studies Policy.
- Refer to MAFC Program Rules & Procedures at www.mafc.mq.edu.au for information on the University's Disruption to Studies Policy or non-attendance at an examination.

On successful completion you will be able to:

- Understand the resource industry value chain and explain how shareholder value may be created at each stage.
- Identify and explain relevant resource industry investment factors, how these factors may be assessed and related risks mitigated.
- Understand, apply and interpret valuation methods relevant to the resource industry, including their appropriate applications and limitations.
- Apply financial statement analysis techniques unique to the resource industry to evaluate

financial performance.

- Explain the fiscal regimes applicable to the resource industry, current related issues and debate.
- Conduct independent research, analyse and evaluate the performance of specific resource companies' and compare performance of stocks.

Delivery and Resources

CLASSES

Face-to-Face Teaching: Generally 20 hours

Timetable: Detailed timetable for classes are on the Centre's web site www.mafc.mq.edu.au

Consultation Times:

Students who wish to contact any of the teaching staff may do so through:

- The Unit's iLearn site, in relation to general queries (so that all students may benefit); or
- Individual consultation with the lecturer by email in the first instance, if necessary.

REQUIRED AND RECOMMENDED TEXTS AND/OR MATERIALS

Text: Nil

Additional Readings:

- A reading pack will be made available prior to commencement of the unit.
- In addition to selected readings, the pack will contain case study materials and questions for discussion related to each case study.
- These readings and lecture materials are examinable.

Lecture Notes: Available in printed form and electronically via iLearn.

Study Problems:

- Students are advised to work systematically through a suggested problem set. These problems will not be collected but they will help you prepare for the exams. Answers to the problems will be posted to iLearn.
- Note: the problem set should not be interpreted as a 'practice exam'. Preparation for the exam will require review of all course materials and lecture notes.

Pre-Unit Materials: Information papers on statistics, regression, accounting and other material may be found at http://www.mafc.mq.edu.au/applications/minimum-knowledge-requirement/pre-course-materials1/. Students should work through this material prior to commencing the degree. The material will remain a useful reference as students progress through the program.

Calculators: In examinations, hand held calculators are permitted. Mobile phones and computers are not permitted.

Assumed Knowledge: Mathematical content

 Finance has a high level of numerate content. Consequently this unit is, in parts, mathematical and arithmetical. As an indication of the level of algebra required, students should find the following problem easy to solve:

Solve for Z_5 : \$1,000 = \$681.20(1+ $Z_5/2$)¹⁰

- Students should look at the Web link below to obtain notes on the minimum mathematical and statistical knowledge required to undertake the Master of Applied Finance degree: http://www.mafc.mq.edu.au/applications/minimum-knowledge-requirem ent/pre-course-materials1/
- Students will be expected to understand discounted cash flow valuation methods and basic accounting statements.

Assumed Access: Access to a computer with word processing and spreadsheet capability is assumed, as is general student computer literacy.

TECHNOLOGY USED AND REQUIRED

Unit iLearn Site:

- Found by logging on to iLearn <u>ilearn.mq.edu.au</u>, then clicking on *Resource Industry* Investment Analysis.
- This is where you will find forums, downloadable resources and links to important pages.
- The forum allows you to communicate with other students and lecturer(s) and may provide supplementary material.

Important Notice:

- It is important that you familiarize yourself with the Unit's iLearn site.
- Students should check the Unit's iLearn site regularly (minimum twice a week and prior to all lectures) and look for updates and distribution of materials (including case studies) related to the unit or assessments and, if relevant, participate in forum discussions.

Unit Schedule SESSION 1: OVERVIEW OF THE RESOURCES INDUSTRY

Topics:

- · Unit introduction, objectives and requirements
- What is the resources industry?
- · Base metals, precious metals, industrial minerals and energy
- How and where is value created in the resources industry?
 - Exploration
 - Extraction
 - Processing
 - Logistics
 - Market

SESSION 2: EXPLORATION, RESERVES AND RESOURCES

Topics:

- · How are exploration decisions made? Where do we drill next?
 - Acquiring access to acreage
 - Making exploration investment decisions
 - Decision Trees
 - Expected Monetary Values
 - Farm in/Farm out agreements
- What are Reserves and Resources? What level of knowledge and confidence is required so that reserves can be "booked"? What judgment should we make about field life if we want to value a resource?
 - Reserves and Resource definitions
 - Mine/field life
 - Translating reserves into future earnings
 - Replacing reserves: exploration versus acquisition
 - Example: Royal Dutch Shell Reserves writedown

SESSION 3: VALUATION APPROACHES

Topics:

- How do we value un(der)explored but prospective acreage? How do we value properties with known but uneconomic reserves? Issues in resource project valuation.
 - Valuing development properties
 - Cost of Capital issues resource stock betas
 - Real option applications
 - Valuation of stranded resources
 - Framing project expenditure decisions

Acceleration economics

SESSION 4: COMMODITY MARKETS

Topics:

- How are commodities marketed and sold? What is the purpose of price hedging? Why
 have hedging issues been at the centre of a number of corporate collapses?
 - Exchange traded commodities
 - Long term supply contracts
 - · Hedging: objectives, instruments and strategies
 - Hedging: managing risk or creating risk?
 - Making price forecasts
- Case Study: Sons of Gwalia, Pasminco

SESSION 5: FISCAL REGIMES: RESOURCE RENTS, TAXES & ROYALTIES

Topics:

- The natural resources of a country are the property of the state or crown. Resource
 companies therefore face two levels of taxation: a "rent" tax, to compensate the state/
 crown for the development of a finite resource, and general corporate taxation. How are
 these "rent" taxes levied? What impact will they have on our investment decisions?
 - Taxation of the resources industry
 - Government take versus exploration prospectivity
 - Royalties and levies
 - Resource rent taxes (PRRT)
 - Production sharing contracts
- Case Study: The Australian Petroleum Resource Rents Tax vs the Indonesian Production Sharing Contract

SESSION 6: INTERPRETING RESOURCE STOCK FINANCIAL STATEMENTS

Topics:

- Investors external to a resource company must make judgments about future profitability
 on the basis of published accounting reports. What are the critical accounting issues
 that relate to resource companies?
 - Resource company accounting conventions
 - How is the value of in-ground reserves presented?
 - Accounting for exploration success/failure

- Depletion of mine development
- What is "impairment"? When is a property "impaired"?
- Provisions for rehabilitation
- Unit costs: full costs and cash costs
- Case Study: Western Area NL

SESSION 7: RESOURCE STOCK VALUATION

Topics:

- How can we combine reserves reports, accounting statements, fiscal regimes and commodity prices to create an earnings and free cash flow forecast for a resource stock? What stock valuation approaches are most applicable to resource stocks?
 - Forecasting sustainable earnings
 - Stock valuation approaches
- Assignment Preliminaries: Ground rules, objectives, expectations and company selection

Learning and Teaching Activities

Strategy

The Master of Applied Finance degree adopts a deep teaching and learning strategy, in which Students acquire and retain knowledge and also are able to make sense of the issues and concepts and apply them in the "real world". The degree relies heavily on student engagement and participation by: (a) Continuous learning throughout the semester. This is encouraged through a combination of students undertaking prescribed reading throughout the units and / or completion of practice problems, case studies, assignments, class presentations etc and interaction via forums in the unit's iLearn site; and (b) Assessments, which enable the student to demonstrate his / her understanding of the learning objectives achieved through the continuous learning.

Student Participation

Students participate in this unit by: (a) Attending lectures and participating in class discussion; (b) Before each class, completing the recommended readings of notes and text, and working systematically through suggested problem sets; (c) Interacting on the unit's iLearn site; and (d) Completing all assessment tasks and exams. On average the unit will require students to complete, for every hour of class time, approximately 3 hours private study.

Policies and Procedures

Macquarie University policies and procedures are accessible from <u>Policy Central</u>. Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy http://mq.edu.au/policy/docs/assessment/policy.html

Grading Policy http://mq.edu.au/policy/docs/grading/policy.html

Grade Appeal Policy http://mq.edu.au/policy/docs/gradeappeal/policy.html

Grievance Management Policy http://mq.edu.au/policy/docs/grievance_management/policy.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.

In addition, a number of other policies can be found in the <u>Learning and Teaching Category</u> of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in <a href="extraction-color: blue} eStudent. For more information visit <a href="extraction-color: blue} ask.m q.edu.au.

Students should also consult the MAFC Program Rules & Procedures found at http://www.mafc.mq.edu.au

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

Learning Skills

Learning Skills (<u>mq.edu.au/learningskills</u>) provides academic writing resources and study strategies to improve your marks and take control of your study.

- Workshops
- StudyWise
- Academic Integrity Module for Students
- Ask a Learning Adviser

Student enquiry service (MAFC-specific)

For all student enquires, please contact studentsupport@mafc.mq.edu.au

Student Services and Support

Students with a disability are encouraged to contact the <u>Disability Service</u> who can provide appropriate help with any issues that arise during their studies.

Learning Skills

Learning Skills (http://www.students.mq.edu.au/support/learning_skills/) provides academic writing resources and study strategies to improve your marks and take control of your study.

- Workshops
- StudyWise
- · Academic Integrity Module for Students
- · Ask a Learning Adviser

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit http://informatics.mq.edu.au/hel
p/.

When using the University's IT, you must adhere to the <u>Acceptable Use Policy</u>. The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcomes

- Understand the resource industry value chain and explain how shareholder value may be created at each stage.
- Identify and explain relevant resource industry investment factors, how these factors may be assessed and related risks mitigated.
- Understand, apply and interpret valuation methods relevant to the resource industry, including their appropriate applications and limitations.
- Apply financial statement analysis techniques unique to the resource industry to evaluate financial performance.
- Explain the fiscal regimes applicable to the resource industry, current related issues and debate.
- Conduct independent research, analyse and evaluate the performance of specific

resource companies' and compare performance of stocks.

Assessment tasks

- · Pre-Unit Assignment
- Class Participation
- · Case Study Assignment
- Final Exam

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcomes

- Understand the resource industry value chain and explain how shareholder value may be created at each stage.
- Identify and explain relevant resource industry investment factors, how these factors may be assessed and related risks mitigated.
- Understand, apply and interpret valuation methods relevant to the resource industry, including their appropriate applications and limitations.
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- Conduct independent research, analyse and evaluate the performance of specific resource companies' and compare performance of stocks.

Assessment tasks

- · Pre-Unit Assignment
- Class Participation
- · Case Study Assignment
- Final Exam

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcomes

- Understand the resource industry value chain and explain how shareholder value may be created at each stage.
- Identify and explain relevant resource industry investment factors, how these factors may be assessed and related risks mitigated.
- Understand, apply and interpret valuation methods relevant to the resource industry, including their appropriate applications and limitations.
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- Conduct independent research, analyse and evaluate the performance of specific resource companies' and compare performance of stocks.

Assessment tasks

- Pre-Unit Assignment
- Class Participation
- Case Study Assignment
- Final Exam

PG - Engaged and Responsible, Active and Ethical Citizens

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

Learning outcomes

- Understand the resource industry value chain and explain how shareholder value may be created at each stage.
- Identify and explain relevant resource industry investment factors, how these factors may be assessed and related risks mitigated.
- Understand, apply and interpret valuation methods relevant to the resource industry,

including their appropriate applications and limitations.

- Apply financial statement analysis techniques unique to the resource industry to evaluate financial performance.
- Explain the fiscal regimes applicable to the resource industry, current related issues and debate.
- Conduct independent research, analyse and evaluate the performance of specific resource companies' and compare performance of stocks.

Assessment tasks

- Pre-Unit Assignment
- Class Participation
- Case Study Assignment
- Final Exam

Changes from Previous Offering

Important Notice

This Unit Guide may be subject to change. The latest version is on the Centre's web site www.m afc.mq.edu.au.

Students should read the Unit Guide carefully at the start of semester. It contains important information about the Unit. If anything is unclear, please consult one of the unit lecturers.

Standards Required to Complete the Unit Satisfactorily

University Policy on Grading:

- Macquarie University's Academic Senate has established a Grading Policy available at http://www.mq.edu.au/policy/docs/grading/policy.html. Your final result will include:
 - A grade ranging from Fail to High Distinction; and
 - A Standardised Numerical Grade (SNG). A SNG is not a summation of the individual assessment components, but is allocated on the basis of the performance in all assessment items, providing the examination component is passed.
- It is important to note:
 - The Policy does not require that a minimum or maximum number of students are to be failed in any unit;
 - Grades will not be allocated to fit a predetermined distribution; and
 - The process of allocating SNGs does not change the rank order of marks among

students who pass the unit.

Specific Unit Grading:

- To pass this unit (requires a Standardised Numerical Grade of 50 or better) the student must pass the final examination.
- All final grades in the Applied Finance Centre are determined by a grading committee and are not the sole responsibility of the unit convenor.
- The core criteria used to assess student work in this unit are:
 - Knowledge and understanding: Understanding key ideas, knowledge and use of concepts.
 - Application: Ability to apply theoretical ideas and frameworks in practice and in a critically reflective way.
 - Reasoning and analysis: Ability to analyse, use critical reasoning and principles to formulate a position, balancing theory and personal reflection.
 - Professional literacy and research: Understanding of professional factors
 (language and landscape) and ability to undertake appropriate research.
 - Communication and presentation: Ability to communicate and present effectively (written and oral, as relevant).
 - Use of mathematical and statistical ideas: Ability to use mathematical and statistical ideas, methods and formulae appropriately.
- Performance in relation to each of these criteria are assessed against the University's grading descriptors:

Grade	Expectation
High Distinction	Provides consistent evidence of deep and critical understanding in relation to the learning outcomes. There is substantial originality and insight in identifying, generating and communicating competing arguments, perspectives or problem solving approaches; critical evaluation of problems, their solutions and their implications; creativity in application as appropriate to the discipline.
Distinction	Provides evidence of integration and evaluation of critical ideas, principles and theories, distinctive insight and ability in applying relevant skills and concepts in relation to learning outcomes. There is demonstration of frequent originality in defining and analysing issues or problems and providing solutions; and the use of means of communication appropriate to the discipline and the audience.
Credit	Provides evidence of learning that goes beyond replication of content knowledge or skills relevant to the learning outcomes. There is demonstration of substantial understanding of fundamental concepts in the field of study and the ability to apply these concepts in a variety of contexts; convincing argumentation with appropriate coherent justification; communication of ideas fluently and clearly in terms of the conventions of the discipline.
Pass	Provides sufficient evidence of the achievement of learning outcomes. There is demonstration of understanding and application of fundamental concepts of the field of study; routine argumentation with acceptable justification; communication of information and ideas adequately in terms of the conventions of the discipline. The learning attainment is considered satisfactory or adequate or competent or capable in relation to the specified outcomes.

Grade	Expectation
Fail	Does not provide evidence of attainment of learning outcomes. There is missing or partial or superficial or faulty understanding and application of the fundamental concepts in the field of study; missing, undeveloped, inappropriate or confusing argumentation; incomplete, confusing or lacking communication of ideas in ways that give little attention to the conventions of the discipline.

Review of Grade and final examination Script viewing:

- A student who has been awarded a final grade for a unit and who does not believe it is an accurate reflection of their performance, and has grounds for such a claim and can demonstrate those grounds, may apply to have their grade reviewed.
- For information on requesting a review of grade and/or viewing your final exam script,
 please refer to the University's Grade Appeal Policy at http://www.mq.edu.au/policy/docs/gradeappeal/policy.html and MAFC Program Rules & Procedures at http://www.mafc.mg q.edu.au.