**FINM3406 Tutorial Run Sheet**

**Week 9 – Debt & Equity Finance**

**Overview**

The main aim for this session is to get students to work through some simple questions to help consolidate their understanding of debt and equity structures in real estate. The tutorial focuses particularly on the advantages and associated risks of leverage in real estate investment.

I have included some basic metrics for calculating performance of real estate assets which should be useful for their assignments.

There are three readings for this week that will help the students.

* Chapter 3 of Rowland, P. J. (2009). Australian Property Investment & Financing - this is a high level general knowledge chapter that will give students an overview of debt finance in Australian real estate market.
* Chapter 8 of Baum, A. (2022). *Real Estate Investment: A Strategic Approach* - **this is the most important reading for this week**. Would be good if students took the effort to read and understand pages 188 - 203 in this chapter as this will give them a great understanding of leverage in a real estate context.
* Chapter 13 of Baum, A. (2022). *Real Estate Investment: A Strategic Approach* – this is good for student who need further support on how to work out performance metrics and will be helpful for them in the assignment.

**Tutorial Activities for Students**:

**Discussion**

1. **What are the differences between debt and equity financing in real estate, and what are the advantages and disadvantages of each option?**

Differences between debt and equity financing:

Debt financing involves borrowing money from a lender, which must be repaid over time with interest (note certain exception such as Sharia loans which are more akin to private equity participation with an obligation to repay principal).

Equity financing, on the other hand, involves selling ownership shares in the company (often a Special Purpose Vehicle set up for a particular site/development) that owns the real estate to investors, who share in the profits and losses of the business.

The advantage of debt financing is that it does not dilute ownership, but it comes with the risk of default if the borrower is unable to repay the loan. Equity financing dilutes ownership, but it does not have the same risk of default.

1. **What are the different types of debt financing options available in the real estate market, and how do they differ in terms of interest rates, repayment schedules, and other?**

Types of debt financing: Common types of debt financing in real estate include mortgages, construction loans, mezzanine loans, and bridging loans. These types of loans differ in terms of:

* Interest rates (senior debt has lower interest compared to mezzanine debt),
* Repayment schedules (construction loans tend to be interest only and have repayments capitalised and paid off in one lump sum upon loan maturity, whereas residential loans tend to be principal and interest amortising loans);
* Duration (residential loans can be up to 30 years, construction loans 3 – 4 years, commercial real estate up to 10 years)
* Security requirements (LVRs differ between residential and commercial and typical construction loans for development sites tend to require pre-sales of enough end products to cover build costs).

1. **How do changes in interest rates impact the availability of debt and equity financing in the real estate market, and how can real estate investors and developers hedge against interest rate risk?**

Changes in interest rates can impact the availability and cost of both debt and equity financing in the real estate market. Higher interest rates can make borrowing more expensive, reduce demand for property investments, and make equity financing more attractive. Investors and developers can hedge against interest rate risk by using financial instruments such as choosing adjustable-rate debt instruments that can adjust to changes in interest rates.

1. **What is leverage in real estate finance, and how does it impact investment returns?**

Leverage in real estate finance refers to the use of debt financing to amplify the returns on equity investment. It involves borrowing money to finance the acquisition, development, or improvement of a property, with the expectation that the returns generated by the property will be greater than the cost of borrowing. Leverage can increase investment returns in a favourable market, but it can also increase risks and lead to greater losses if the market turns unfavourable.

1. **Calculate the Loan to Value ratio, the Debt to Equity ratio and the Equity Multiple for a parcel of vacant investment that was purchased for $10,000,000, with a mortgage of $7,000,000 and equity of $3,000,000 and sold one year later for $14,000,000 after costs.**

* Loan to Value ratio = Debt / Value = $7,000,000 / $10,000,000 = 0.7
* Debt to Equity ratio = Debt / Equity = $7,000,000 / $3,000,000 = 2.33
* Equity Multiple = Total cash return / cash invested = $4,000,000/$3,000,000 = 1.33

1. **What are some of the advantages and disadvantages of using leverage in real estate investments?**

Advantages of using leverage in real estate investments include the ability to increase potential returns, improve cash flow, and achieve higher asset appreciation. Disadvantages of using leverage include higher risk, increased costs due to interest payments, and the potential for financial distress or default in the event of market downturns or other adverse events.

1. **A real estate developer is considering two different financing options for a $5 million project. Option 1 involves financing the project with 100% equity, while Option 2 involves financing the project with a $3 million mortgage with interest only repayments of $200,000 per year and $2 million equity. If the project generates a net operating income of $500,000 per year, which option provides a higher return on equity investment? Show your calculations.**

* Option 1:   
  Initial investment = $5 million equity   
  Net operating income = $500,000 per year   
  Return on equity investment = ($500,000 / $5,000,000) x 100% = 10%
* Option 2:   
  Initial investment = $2 million equity + $3 million mortgage = $5 million   
  Net operating income = $500,000 - $200,000 (mortgage interest) = $300,000.  
  Return on equity investment = ($300,000 / $2,000,000) x 100% = 15%

1. **What calculation can you undertake to determine if it is appropriate to use leverage to purchase a real estate asset?**

Calculate the return on leveraged equity vs return on unleveraged equity. Noting that the return on leveraged equity is greater than the return on unleveraged equity when the return on unleveraged equity is higher than the interest rate on debt

See Chapter 8 - pages 195 and 196 of Baum, A. (2022). *Real estate investment : A strategic approach* for a great worked example of this.