

**SA422: HOUSING ECONOMICS AND FINANCE 2008/2009**  
**Handout 4: Investment and Financing Decisions**

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1. Housing is an investment good (asset) which provides benefits over time. Increasing the quantity of housing available entails giving up current consumption in order to obtain a stream of future consumption benefits – i.e. to increase future income.
2. In a market system the level of investment depends on the expected productivity of that investment as compared to its cost. The marginal efficiency of capital (mec) describes that productivity, (given technology, etc.). (Also called rate of return, marginal efficiency of investment or marginal value of capital). As opportunities vary and are not infinite, marginal efficiency of capital declines as quantity of investment undertaken increases (figure 1).
3. The supply of funds for investment purposes depends on the lenders' preparedness to give up current consumption for future payments (i.e. time preference). That valuation of future payment is reflected in the interest rate – e.g. if value £110 in one year's time as equal to £100 today the interest rate required is 10%.

4. Given positive value of current consumption, the value of future payments must be discounted to equate with the value of payments today. The present value of a certain

$$PV = \frac{x}{(1+i)^t}$$

future payment X in year t

More generally the present value of an

$$\frac{X}{i}$$

infinite stream of future payments =

5. The relevant investment rule is to do all investments where net present value (NPV) at the relevant current interest rate is greater than zero. This implies that equilibrium is where marginal efficiency of capital (mec) = i, the interest rate (figure 1). The relevant interest rate is that which faces the decision maker at the time of the decision to purchase. In the case of rented housing there is a clear financial stream of benefits. In owner-occupation that has to be imputed.
6. Where future payments are risky, must take account of expected values and attitudes to risk rather than simply actual values. Generally require a higher rate of return for riskier investments.
7. In the case of housing, the individual is making two choices: how much to invest in housing and what type/tenure of housing. The capital value of a dwelling (i.e. house price) in a well operating market is calculated from the stream of net rents together with the interest rate.

$$\text{Price (PV)} = \frac{R - C}{i} \quad \text{for infinite stream of payments (rents) (perpetual asset).}$$

So e.g. if net rent (R-C) equals £1,000 p.a. and interest rate (i) = 10% PV = £10,000.  
 If i = 5% PV = £20,000.

8. More complex formulae if (a) there are variations in (R-C) over time (b) if there are

expected capital gains, (c) if there is a finite stream of payments or (d) there is inflation.

If, for example, it is expected that rental value will increase over time, then

$$\text{price (PV)} = \frac{\text{Initial } R - C}{\text{Cost of Capital (i) - Rate of Growth and rental value (g)}}$$

9. In practice the capital value may include other elements such as speculative views about how house prices may increase. It may also reflect market imperfections – such as variations access to the capital market. Equally people have very different preferences for the attributes of ownership and renting.
10. For an individual the housing asset is relatively indivisible and is usually a large proportion of individual net wealth. This suggests that risk aware individuals would wish to spread their risks across a range of dwellings, by renting or part owning their own dwelling rather than owning a single dwelling. However all the empirical evidence is that households wish fully to own their own property.

### **Financing Decisions**

11. Because housing is a long-term asset its purchase either involves debt finance or equity finance. This interface between the housing and finance markets affects both the actual price that purchasers face and their capacity to purchase at all.
12. In a perfect, certain world the investor is indifferent between debt and equity finance as marginal cost will be equal. However in practice there is a significant gap between borrowing and lending rates. There have also been many imperfections which have in past favoured debt finance, in particular mortgage interest tax relief, but also low real interest rates associated with high inflation, which have encouraged borrowing.
13. The use of equity – relationship to ownership, age, household structure and wealth constraint. Traditionally required to fund a proportion of the dwelling and to take out Mortgage Insurance (MI or MIG) which benefits mortgagee (i.e. the financial institution) when the loan to value ratio higher than 80%.
14. The lower the proportion of own equity the higher the leverage – providing a high return on house price increases (e.g. house price £100,000; own equity £10,000; price increase of 10% increases equity by 100%) but an equally large problem if prices fall.
15. Owning outright implies bearing 100% of risk associated with a given property but much lower volatility in returns.
16. Debt finance – for home ownership there was traditionally a special circuit of finance developed to address specific attributes of property ownership – in particular inter-generational lending. In the UK building societies developed across the country - mutual organisations providing funds to relatively low-risk consumers at interest rates which were below market clearing rates and therefore involved rationing.
17. Banks and demutualised building societies are now the major sources of finance in the UK. (Since deregulation in late 1970s/early 1980s – which also brought housing finance

into global market).

18. Fundamentally, retail organisations take in savings (especially accumulated interest payments) from and lend to individuals. Banks are more diversified with housing as relatively small element in total lending. Increasing use of credit rating and credit committees in allocating mortgages. Prime and sub-prime mortgages.
19. There has been a growing wholesale market securitising mortgages (including Buy-to-Let). This in principle enables more effective risk management and separation of sales, management and risk bearing. It can also help reduce volatility in interest rates. However as has been seen over the last few months it may be difficult to price effectively and is subject to other risks arising from the overall finance market. The market is currently dead.
20. Transactions costs of financing are relatively low in the UK, as are the costs of transferring property. Both help to increase levels of activity and borrowing. Role of stamp duty, buyers packs (HIPs), regulation in raising costs.
21. Mortgage instruments: traditionally annuity mortgages where payments constant in money terms. Also bullet capital payment at end of period (usually 20-25 years), linked to endowment policies, pension plans etc.
22. In UK traditionally variable rate where consumer bears risk of interest rates changing but can repay at any time with little cost. Fixed rate mortgages involve matching fixed rate mortgages with fixed rate borrowed funds, often implying repayment premia. However they provide certainty to the mortgagor about repayments. In the UK nowadays a great deal of short-term fixed rate borrowing either becomes variable rate or people re-finance on different terms.
23. Differences between UK and European position and possible negative impact on macro economy (including use of housing as security for other debt).
24. The Miles Report (2003 and 2004) on Treasury website sets out the case for more fixed rate borrowing especially for lower income households. The Treasury is now looking at further ways of introducing longer term fixed rate mortgages.
25. Role of insurance – MI for institution. MPPI (mortgage payment protection insurance) for mortgagors.

Reading (mainly for seminar):

Whitehead & Gaus, *At Any Cost? Access to Housing in a Changing Market Place*, Shelter, September 2007

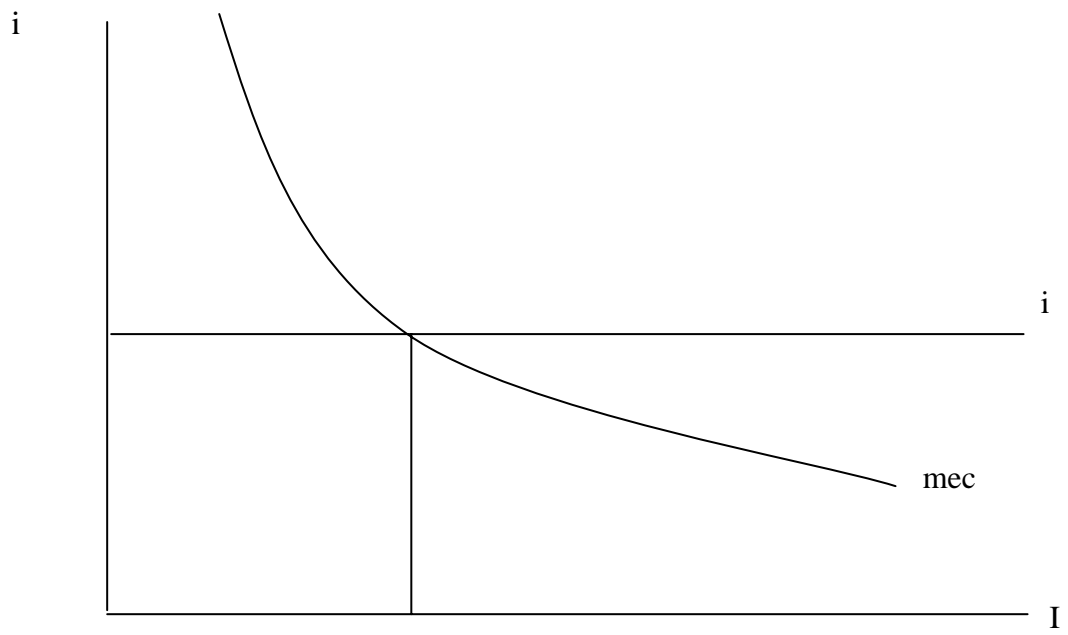


Figure 1: Decisions to Invest depend on Opportunities and Interest Rates