

- Just take the NPV pricing equation and recursively sub in future expressions until you can generalise
- If the  $r_f$  rate is time varying, use the delta expression for the discount rate factor.

ECON30024  
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## Tutorial 9 (for Week 10)

1. Review Quiz 9 questions.
2. Derive the NPV equation for the price of a finitely lived asset under certainty, assuming that the risk-free rate varies over time (i.e., derive equation (4) on Topic 8). Is  $p_t$  uniquely determined?
3. Show that the price sequence as defined by equation (20) satisfies (5), i.e., asset prices determined by the NPV equation with a bubble are compatible with the arbitrage principle.
4. ~~Discussion questions:~~
  - ~~(a) Do you think there is a housing bubble in the Australian housing market?~~
  - ~~(b) Some view the Pay-as-you-go social security system and the practice of rolling over government debt are like a Ponzi scheme run by the government. Do you agree?~~