



Institute  
and Faculty  
of Actuaries

## **CHANGES TO THE SYLLABUS AND CORE READING FOR SUBJECT CT7 FOR THE 2018 EXAMINATIONS**

### **Changes to the Syllabus and their impact on Core Reading**

*There have been no changes to the Syllabus.*

### **Changes to Core Reading**

#### **UNIT 3**

*Amendments have been made to this Unit and a revised Unit is attached.*

#### **UNIT 10**

*Amendments have been made to this Unit and a revised Unit is attached.*

#### **UNIT 15**

*Amendments have been made to this Unit and a revised Unit is attached.*

*The only other changes that have been made to the Core Reading are to correct typographical errors and improve the style.*

Attachments: Unit 3, 10 and 15

## UNIT 3 — CONSUMER DEMAND

### Discuss consumer demand and behaviour.

#### *Syllabus objectives*

- (iii)
1. Understand the concept of utility and describe how it affects consumers' purchasing decisions.
  2. Describe how insurance companies help to reduce or remove risk.
  3. Explain what is meant by the terms “moral hazard” and “adverse selection”.
  4. Analyse simple problems in terms of utility theory.

### The material required for this unit is covered in:

- Chapter 6: sections 6.1 and 6.2 only excluding Box 6.1, Box 6.3 and Box 6.4
- plus additional core reading which follows overleaf

The textbook uses the characteristics approach to utility theory and indifference curve analysis and is useful for Subject CT8.

All references are to the textbook:

Economics for Business. Sloman, J., Garratt, D., Guest, J., Jones, E. 7th ed. Pearson 2016.

# 1 How insurance may reduce the adverse impact of future events

## 1.1 Introduction

A person who is risk averse will be prepared to pay more for insurance than the long-run average value of claims which will be made. Thus, insurance can be worthwhile for the risk averse policyholder even if the insurer has to charge a premium in excess of the expected value of claims in order to cover expenses and to provide a profit margin.

An insurance contract is feasible if the minimum premium that the insurer is prepared to charge is less than the maximum amount that a potential policyholder is prepared to pay.

## 1.2 Benefit to the insured

Maximising utility is not the same as maximising expected wealth. Because people are risk averse, the feeling of certainty they get from having insurance gives them extra utility. For this reason, a utility function gives less weight to very good outcomes than the weight given to very good outcomes by using expected values.

Thus, because people are risk averse, a system of insurance can reduce the financial impact of uncertain future events.

## 1.3 Cost to the insurer

If the *insurer* is also risk averse, then the insurance premium needs to include a margin to compensate the insurer for taking on the risk.

*Adverse selection* describes the fact that people who know that they are particularly bad risks are more inclined to take out insurance than those who know that they are good risks. Adverse selection is sometimes called “self selection” or “anti-selection”.

To try and reduce the problems of adverse selection insurance companies try and find out lots of information about potential policyholders. Policyholders can then be put in small, reasonably homogenous pools and charged appropriate premiums.

*Moral hazard* describes the fact that a policyholder may, because they have insurance, act in a way which makes the insured event more likely. Moral hazard makes insurance more expensive. It may even push the price of insurance above the maximum premium that a person is prepared to pay.

## 2 Analysing simple insurance problems in terms of utility theory

### 2.1 Finding the maximum premium

The maximum premium ( $P$ ) which an individual will be prepared to pay in order to insure himself against a random loss  $X$  is given by the solution of the equation

$$E(U(a - X)) = U(a - P),$$

where  $a$  is the initial level of wealth.

### 2.2 Finding the minimum premium

The insurance premium  $Q$  which an insurer should be prepared to charge for insurance against a risk with potential loss  $X$  is given by the solution of the equation

$$E(U(b + Q - X)) = U(b),$$

where  $b$  is the initial wealth.

<b>END</b>
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## UNIT 10 — GOVERNMENT INTERVENTION

### Understand the reasons for government intervention in the market.

#### *Syllabus objectives*

- (x)
1. Explain and discuss the extent to which businesses meet the interests of consumers and society in general.
  2. Explain in what sense perfect markets are “socially efficient” and why most markets fail to achieve social efficiency.
  3. Describes the ways in which governments intervene in markets in order to influence business behaviour and explain the drawbacks of such intervention.
  4. Explain and discuss whether taxation or regulation could be more useful in correcting markets’ shortcomings.

#### **The material required for this unit is covered in:**

- Chapter 20: sections 20.1–20.4 only, including the first paragraph in the section entitled ‘public goods’ on page 349, plus the box of definitions on page 349, but excluding the rest of pages 349–352, recommencing at the “key idea 34” box on ‘the free rider problem’ on page 353, but excluding the sections on “ignorance and uncertainty” and “immobility of factors and time lags in response”.

#### **Useful additional material is covered in:**

- Chapter 20: section 20.5

All references are to the textbook:

Economics for Business. Sloman, J., Garratt, D., Guest, J., Jones, E. 7th ed. Pearson 2016.

**END**

## UNIT 15 — BALANCE OF PAYMENTS AND EXCHANGE RATES

**Understand what is meant by the balance of payments and how exchange rates are determined.**

*Syllabus objectives*

- (xv)
1. Describe what is meant by “the balance of payments” and how trade and financial movements affect it.
  2. Explain how exchange rates are determined and how changes in exchange rates affect business.
  3. Explain the relationship between the balance of payments and the exchange rates.
  4. Discuss the advantages and disadvantages of fixed and floating exchange rates.
  5. Explain how governments and/or central banks seek to influence the exchange rates, and describe the implications of such actions for other macroeconomic policies and for business.

**The material required for this unit is covered in:**

- Chapter 27

Students should ignore the definition of the “terms of trade” which is given within the text in box 27.1 and instead use the correct definition from Chapter 24, page 445.

All references are to the textbook:

Economics for Business. Sloman, J., Garratt, D., Guest, J., Jones, E. 7th ed. Pearson 2016.

**END**