MANAGERIAL ECONOMICS · WEEK 1

Value, exchange and economic cost

What makes an exchange possible?

Economic value and exchange

When does an economic exchange occur?

ECONOMIC VALUE

The benefit a good or service provides

Economic value is often measured in monetary terms and differs across individuals.

TWO SIDES OF VALUE

Buyer and seller

BUYER

Maximum amount the buyer is willing to pay.

WTP

SELLER

Minimum amount the seller is willing to accept.

WTA

SURPLUS

When is exchange possible?

$$S = \text{WTP} - \text{WTA} > 0$$

WTP must exceed WTA.

ANNE AND BROOK

The bicycle

Anne wants to buy a new road-racing bicycle priced at **$1,600**.

Anne will not sell below **$1,300**.

A similar bicycle sold for **$1,450**.

Brook has a **$2,000 budget** but will not pay more than **$1,500**.

EXCHANGE AND PRICE

Price allocates surplus

$$BS = \text{WTP} - p$$

$$SS = p - \text{WTA}$$

$$S = BS + SS$$

Changing a feasible price changes the allocation, not total surplus.

AT P = $1,400

Who receives the surplus?

Calculate buyer surplus and seller surplus.

Add them and compare with total surplus.

METHODS OF EXCHANGE

Markets · auctions · bargaining

Three ways to determine the terms of exchange.

MARKET

A stock exchange

A share trades at **$50**.

A market order for **100 shares** costs **$5,000**.

The exchange matches buyers and sellers at the market price.

AUCTION

First-price sealed bids

Bidders submit one secret bid.

The highest bid wins.

The winner pays the submitted bid.

BARGAINING

A salary negotiation

Job seeker asks for **$80,000**.

Employer offers **$70,000**.

Agreement: **$75,000 plus a performance bonus**.

TWO ANTIQUE DAGGERS

Which exchanges are possible?

	HARROW · WTA $25K	CALDER · WTA $50K
Smith · WTP $40k	$15k surplus	No positive surplus
Blackwood · WTP $60k	$35k surplus	$10k surplus

Compare the number of exchanges with total surplus.

ANTIQUE DAGGERS

Which allocation creates the most surplus?

Two exchanges can create $25,000. One can create $35,000.

Which allocation would you choose?

DEALER INCENTIVE

$1,000 for each completed exchange

The buyer and seller each pay the dealer $500.

Which pairs will the dealer match?

DEALER INCENTIVE

5% of the surplus created

The dealer's fee now rises with total surplus.

Which pairs will the dealer match?

DETERMINANTS OF VALUE

Why do WTP and WTA differ?

Consumer value and producer value have different determinants.

CONSUMER VALUE

What affects WTP?

01 Preferences and tastes

02 Needs

03 Situational factors

04 Market conditions

05 Related goods

PRODUCER VALUE

What affects WTA?

01 Cost of production

02 Technology

03 Rules and regulations

04 Access to markets

ECONOMIC VALUE AND EXCHANGE

Value determines possibility.

The method of exchange determines the terms.

DECISIONS AND ALTERNATIVES

Economic cost

Which resources are relevant, and what are they worth?

ECONOMIC COST

Ask two questions

01 Which resources are affected by the decision?

02 What is the opportunity cost of each relevant resource?

THE WOOD WHISPERER

A new chair project

Raw materials · labour · machinery · workshop

Utilities · safety equipment · packaging · transport

AVOIDABLE COST

Which resources change if the project is rejected?

Current workers and workshop space are underutilised.

Classify raw materials, labour, workshop and packaging.

OPPORTUNITY COST

Value the best alternative use.

Opportunity cost is the highest value a resource generates among its alternatives.

AUDIENCE POLL

Apple's DRAM chips

Ordered for $38. Current market price $23.

Which cost should Apple use? $0, $23, $38 or another amount?

AUDIENCE POLL

An inherited house in Fitzroy

The owner pays no rent, but the house could be rented to someone else.

Which cost should the business use? $0, council rates, market rent or the house's historical value?

ECONOMIC COST

Avoidable resources valued at opportunity cost

Include monetary costs and opportunities given up.

SYNDICATE EXERCISE

Ted's future

Read the case, identify the relevant economic costs and decide which option Ted should choose.

TED'S FUTURE

Background

Ted is finishing the MBA at Melbourne Business School and weighing his next career move.

Before the MBA, he spent seven years in the United States working for a successful real estate entrepreneur.

The business bought non-performing mortgage loans from banks at a discount, foreclosed on the properties, renovated them and sold them at a substantial profit.

When that line of business tapered off, Ted returned to Melbourne to strengthen his management skills.

TED'S FUTURE

The venture

With the real estate market on an upswing, a former associate proposes a joint venture to develop a prime property.

The project would cost **$1 million**: $400,000 for land and $600,000 to build a five-unit apartment building, the largest the zoning laws allow.

Ted and his associate would each contribute **$500,000**.

They expect to sell the finished property after one year for **$1.4 million** and split the proceeds equally.

TED'S FUTURE · EXHIBIT 1

Key figures

WESTPAC OFFER

- Annual salary: $125,000
- Signing bonus: $25,000 (only if Ted accepts now)
- Expected first-year performance bonus: $25,000
- About 60 hours per week

JOINT VENTURE

- Total project cost: $1,000,000
- Land: $400,000; construction: $600,000
- Ted's contribution: $500,000
- Projected sale price after one year: $1,400,000
- Ted's share of proceeds: 50%
- About 70 hours per week

Ted can fund $200,000 from savings and $300,000 with a loan at 7%. His savings could otherwise earn 5%.

TED'S FUTURE

Financing and trade-offs

Ted has **$200,000** in savings. His mother, who heads commercial lending at ANZ, can arrange a **$300,000 loan at 7%**, secured against the property.

If Ted leaves his savings where they are, they earn **5%**.

The venture offers independence and casual clothes, but Ted expects to work about **70 hours a week**, compared with about 60 at Westpac. The extra time would take up much of his weekends.

Ted expects that, after the project, he could return to Westpac or secure a comparable offer from another investment firm.

SYNDICATE QUESTION 1

Westpac or the venture?

Should Ted accept the Westpac offer or join the joint venture?

Explain your answer in detail, taking into account all relevant economic costs.

SYNDICATE QUESTION 2

Do living expenses matter?

Rent is $2,000 a month and food is $1,000 a month.

How does this information affect your answer to Question 1?

COST FUNCTIONS

Economic cost at each output

Linear and quadratic functions.

COST CLASSIFICATION

Fixed and variable

FIXED

Does not depend on quantity produced.

FC

VARIABLE

Depends on quantity produced.

$VC(q)$

THE BAKERY

Build the linear cost function

FIXED PER MONTH

$5,800

Rent · oven · insurance · manager

VARIABLE PER LOAF

$5

Ingredients · packaging · labour · utilities

LINEAR BAKERY

Constant variable cost per loaf

$$C(q) = 5{,}800 + 5q$$

$$AC(q) = \frac{5{,}800}{q} + 5$$

$$MC(q) = 5$$

In $C(q) = a + bq$, a is fixed cost and b is variable cost per unit.

QUADRATIC BAKERY

Overtime labor

$$C(q) = a + bq + cq^2$$

$$AC(q) = \frac{a}{q} + b + cq$$

$$MC(q) = b + 2cq$$

The cq^2 term is overtime labor. Congestion makes each extra loaf require more overtime minutes.

The minimum of average cost

If AC is differentiable and reaches its minimum at q^* inside the feasible output range, then $MC(q^*) = AC(q^*)$. Equality need not occur with discrete output, a kink or a boundary minimum.

ASSIGNMENT FOR QUIZ 1

TV News Magazine

Hobart · Ballarat · Gold Coast