How would a manager hire the most possible number of workers on \$100 vs How would a manager minimize the cost of hiring 3 workers

The **Objective function** specifies what the agent cares about (e.g do managers care about increasing profits or increasing their power)

Constraints include time, budget, technical capabilities, resource limits, the market place, rules/regulations and laws

Institutions can stop us from taking certain choices, for example the government prevents us from selling our kidneys, so preventing us from making this choice if we so wished



Under the line the income (I) is greater than the cost of their consumption, meaning that they haven't spent all of their disposable income

The **marginal impact** of a change in the exogenous variable is the **incremental impact of the last unit** of the exogenous variable on the endogenous variable Mathematically:

Qd = 500 - 4p	p = price of cranberries (\$ per barrel)
Qs = -100 + 2p	Q = demand/supply in millions of barrels

Qd = Qs 500 - 4p = -100 +2p 600 = 600 6p 100 = p

Excess demand - when demand at a given price > quantity supplied, so prices tend to rise

Excess supply - when quantity supplied > quantity demanded, so prices tend to fall



Price < Equilibrium = excess demand



Marginal Utility - additional utility gained from 1 more unit Muy =  $\Delta U / \Delta Y$ Shape of the utility function with respect to Y



Indifference curves - the set of baskets for which the consumer is indifferent



The consumer wants to consume -X values, but can't, so will have to settle for no X and being at a lower IC curve

Perfect Complements



100 = 2X

50 = X so Y = 50

$$|2 - 5 \times 3 + |12 - 5 \times 1 = 150$$
  
 $(50 - 100 = 50$ 

Special cases - compliments



The decomposition bundle b is the same as bundle a Even though the price of x has fallen, you still want the same ratio of x and y With compliments there is no substitution effect It is a pure income effect



The price per unit of capital is r because the opportunity cost of capital is the interest rate

Q is the desired level of output F(L,K) is the production function

Isocost lines - the set of combinations of labour and capital that yield the same total cost for the firm given prices of labour and capital

TC = wL + rK rearrange K = TC/r - (w/r)L



The slope of the isoquant is the negative of the MRTSI,k = -MPL/MPK

Slope of isocost = -w/r

At point c MPL/MPK > w/r

MPL/w > MPK/r

The slope of the isoquant is the negative of the MRTS The slope of the isocost is the negative of w/r

A change in the relative price of inputs changes the slope of the isocost line

With diminishing MRTS, ceteris paribus, an increase in w must decrease the cost minimising quantity of labour and increase the cost minimizing quantity of capital

Ceteris paribus, an increase in r must decrease the cost minimising quantity of capital and increase the cost minimizing quantity of labour

If r remains constant, an increase in w makes the isocost line steeper (the slope decreases) Since MRTS is diminishing, this implies that employment of L decreases

```
Q = 50L^{1/2} K^{1/2}
 MPL = 25K^{1/2} / L^{1/2}
 MPK = 25L^{1/2} / K^{1/2}
 W = 1
 R = 16
1000 = pointel x K x 1/2

1000 = pointel x K x 1/2 x K x 1/2

1000 = 10 x 4 x K x 1/2 x K x 1/2

1000 = 200 x K

1000 = 200K

K = 5

L = 16 / F x
 Q = 1000
 L = 16(5)
 L = 80
 w/r = 4/16 = 1/4
 K/L = 1/4
 4K = L
 1000 = 50(4K)^{1/2} K^{1/2}
 1000 = 50 \times 2 \times K^{1/2} \times K^{1/2}
 1000 = 100K
 K = 10
 L = 4(10) = 40
```

As the price of labour has increases, the firm has increased its use of capital and used less labour

In the short run, the firm is not able to minimize costs as one of the inputs is fixed



- Long run-all variables are variable and the expansion path is from A – B – C
- Short run-some variables are fixed (capital)-the expansion path is from D –E –F

Preview from Notesale.co.uk Page 58 of 58