Barick Chung

Employment:
2014-present Senior Lecturer, Department of Economics, CUSZ – Shenzhen.
2012-2014 Lecturer, School of Economics and Finance, University of Hong Kong.
2006-2012 Instructor, Department of Economics, CUHK – Hong Kong.

Education:
2003-2007 Ph.D. (Business) Indiana University – Bloomington.
1987-1991 BS.Sc. (Economics) Chinese University of Hong Kong – Hong Kong.

Research paper:
Chung, Barick, "Two Level Price Discrimination and Vertical Relationship" (March 05, 2012). Available at SSRN: http://ssrn.com/abstract=1997070.

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ECO 2011 (Sections L07-10)
Basic Microeconomics

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MRS

Pindyck and Rubinfeld, p.218:

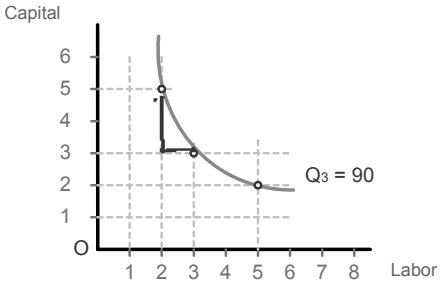
Marginal rate of technical substitution (MRTS): Amount by which the quantity of one input can be reduced when one extra unit of another input is used, so that output remains constant.

$MRTS_{LK}$ = − Change in capital input / change in labor input

$= -\Delta K / \Delta L$

Definition

Isoquant: Curve showing all possible combinations of inputs that yield the same output.



Pindyck and Rubinfeld, p. 219:

Diminishing MRTS: The MRTS falls as we move down along an isoquant. In other words, isoquants are convex.

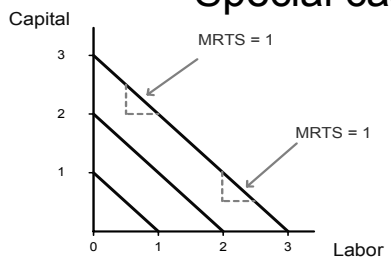
Assumption

product / output / return

2 special cases

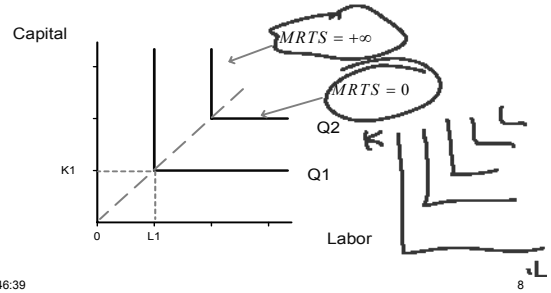
Special case #1: Isoquants when inputs are **prefect substitutes**.

Special case #1



Special case #2: Isoquants with **Fixed-proportion** production function.

Special case #2



Iso-cost line

Pindyck and Rubinfeld, p.245:

Isocost line: Graph showing all possible combinations of labor and capital that can be purchased for a given total cost.

$C = w \times L + r \times K$

Isocost equation

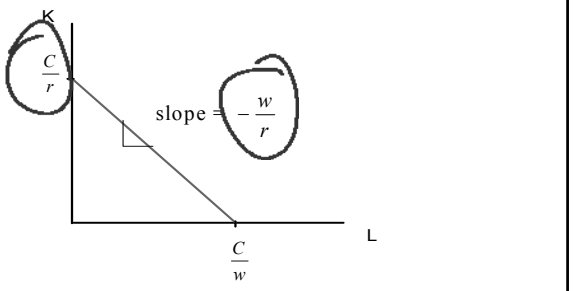
where w is wage rate of labor and r is rent of capital.

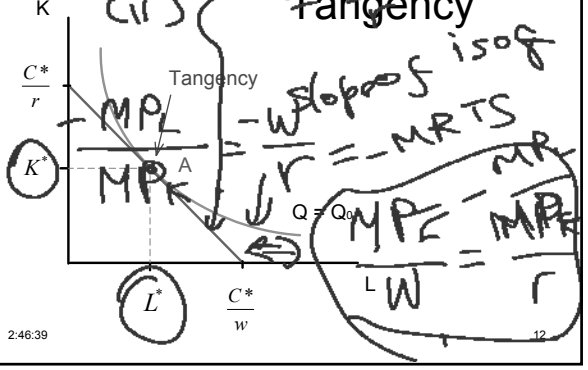
Rewrite:

$K = C / r – (w / r) L$

Isocost line

Slope of isocost line is $\Delta K / \Delta L = – (w / r)$ (w / r is called **relative input price**)





Pindyck and Rubinfeld, p. 219:

Returns to scale: Rate at which output increases as inputs are increased proportionately.

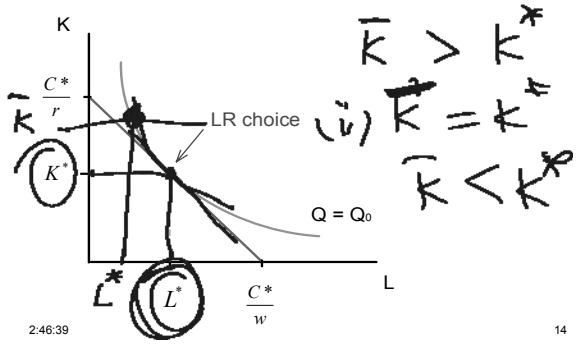
Increasing returns to scale: Situation in which output more than doubles when all inputs are doubled.

Constant returns to scale: Situation in which output doubles when all inputs are doubled.

Decreasing returns to scale: Situation in which output less than doubles when all inputs are doubled.

Definitions

$\bar{K}$



Pindyck and Rubinfeld, pp.206 – 7:

Average product: Output per unit of a particular input.

Marginal product: Additional output produced as an input is increased by one unit.

Definitions

Pindyck and Rubinfeld, pp.206 – 7:

Average product of labor = Output / labor input = Q / L

Marginal product of labor = Change in output / change in labor input = $\Delta Q / \Delta L$

Average product of capital = Output / capital input = Q / K

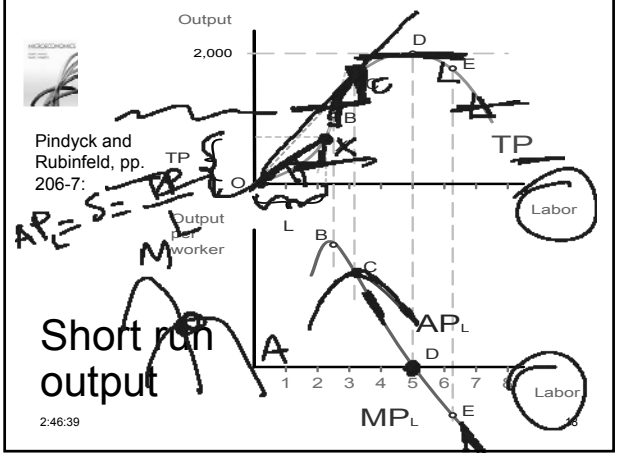
Marginal product of capital = Change in output / change in capital input = $\Delta Q / \Delta K$

Definitions

Pindyck and Rubinfeld, pp.206–7:

Labor L	Capital K	Output Q	$AP_L = Q/L$	$MP_L = \Delta Q/\Delta L$	$AP_K = Q / K$	$MP_K = \Delta Q / \Delta K$
0	10	0	-	-		
1	10	10	10	10		
2	10	30				
3	10	60	20	30		
4	10	80				
5	10	95				
6	10	108				
7	10	112				
8	10	112				
9	10	108				
10	10	100				

Pindyck and Rubinfeld, pp. 206-7:



Short run output

The end