Semester V

MJC 8

Intermediate Microeconomics 2

Unit 2

Theory of Distribution

Concept of Marginal Productivity Theory of Distribution

Euler's theorem is used to solve the "product exhaustion problem," which is the economic principle that
if all factors of production are paid based on their marginal product, their total payments will exactly equal the total output. This is known as the adding-up problem and was proven by economists like Philip Wicksteed using Euler's theorem for production functions exhibiting constant returns to scale.
The mathematical relationship can be expressed as

$Q=\partial Q\partial L\cdot L+\partial Q\partial K\cdot K$,where Q is total output, L is labor,K is capital, and the marginal products of labor and capital are $\partial Q/\partial L$ and $\partial Q/\partial K$ respectively.

Read through the links given below....

https://www.economicsdiscussion.net/distributive-shares/eulers-product-exhaustion-theorem-with-diagram/18880

And

https://www.slideshare.net/slideshow/the-adding-up-problem-product-exhaustion-theorem-yohannes-mengesha/36290918

And

https://egyankosh.ac.in/bitstream/123456789/68935/1/Unit-2.pdf

(On 56)

And

https://www.yourarticlelibrary.com/economics/theory-of-distribution/the-eulers-theorem-and-product-exhaustion-problem/37392

After having gone through the contents given in the above links you should be able to answer the following questions

1. **State and prove Euler's Product Exhaustion Theorem ?**

2. **If Factors of production are paid equal to their marginal products, then what would the sum of such payments be equal to? Demonstrate and explain.**