8.1 Measuring the Efficiency of a Business Unit

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Summary	• Efficiency of an Economic Unit
• Efficiency formula	**Efficiency** Quantifying and comparing the efficiencies of the decision making units • There are two conventional ways people define efficiency: i. Efficiency = $\frac{Actual\ output}{Rated\ output}$ ii. Efficiency = $\frac{Output}{Input}$ • We will be using the (ii) definition in this course.
• What is productive efficiency "frontier"? • The organisations that ○ are, and ○ are not on the frontier are called?	**Productive efficiency (Production efficiency)** • Economics teaches us effective utilization of resources for the maximization of benefits (output). • Productive efficiency is an aspect of economic efficiency focusing on maximizing the output under given constraints (without worrying about optimal allocation, or choice of products, etc.). • The productive efficiency "frontier" are all the combinations of outputs such that the production of one product cannot be increased without sacrificing the output of the other (without any change in the technology). • If the organization (any economic unit) is not on the frontier, it is inefficient. • Frontier is that optimal combination of outputs where you cannot increase output 1 without affecting output 2. • The organisations that run on this frontier are called efficient organisations.
	Efficiency measurement • In the simplest way, efficiency is defined as the ratio of the output to the input.  • However, in reality, this is complex. Why?
• Why efficiency measurement is complex?	**Efficiency measurement** • Multiple types of inputs: Labor (white collar, blue collar, etc.); Infrastructure (factory, buildings, land, machinery, etc.); Money (financial assets, loan, etc.) • Essentially, resources goes as inputs. • Output can also be in many shapes and forms: customers served/acquired; profits; sales volume, etc. • How has the organization (or the economic unit) performed is the output.

Immediate questions

- How does the ratio of input to output work in presence of several inputs and several outputs?
- How do we, then, calculate the productive efficiency of an economic unit?
- More importantly, how do we compare several economic units on their efficiency?
- If an economic unit turns out to be inefficient, how can they become efficient?

Common approaches

- Operating ratios: Labor cost per transaction; sales per square feet; runs per innings.
- Problem: Doesn't reflect varying mix of inputs and outputs found in more diverse operations.

- Financial ratios: Price to earnings ratio (PE); Debt to equity ratio; Earnings per share (EPS).
- Problems?
  - Some inputs/outputs cannot be valued in currency terms.
  - Profitability is not the same as operating efficiency.