CH;1

Economic efficiency is, roughly speaking, a situation in which nothing can be improved without something else being hurt. Depending on the context, it is usually one of the following two related concepts:

- Allocative or Pareto efficiency: any changes made to assist one person would harm another.
- Productive efficiency: no additional output can be obtained without increasing the amount of inputs, and production proceeds at the lowest possible average total cost.

These definitions are not equivalent: a market or other economic system may be allocatively but not productively efficient, or productively but not allocatively efficient. There are also other definitions and measures. All characterizations of economic efficiency are encompassed by the more general engineering concept that a system is efficient or optimalwhen it maximizes desired outputs (such as utility) given available inputs.

Allocative and productive efficiency[edit]

A market can be said to have allocative efficiency if the price of a product that the market is supplying is equal to the marginal value consumers place on it, and equals marginal cost. Because productive resources are scarce, the resources must be allocated to various Industries in just the right amounts, otherwise too much or too little output gets produced.[1] When drawing diagrams for firms, allocative efficiency is satisfied if output is produced at the point where marginal cost is equal to average revenue. This is the case for the long-run equilibrium of perfect competition.

Productive efficiency occurs when units of goods are being supplied at the lowest possible average total cost. When drawing diagrams for firms, this condition is satisfied if the equilibrium is at the minimum point of the average total cost curve. This is again the case for the long run equilibrium of perfect competition.

Economists can get very technical when they discuss the topic of economic efficiency, and most of the rest of the reading selections in this unit are going to get technical. But the **basic idea** of economic efficiency **is very simple** and can be illustrated in a simple example.

Suppose that we have a bundle of resources (hours of labor, raw materials, machines, etc.) and that this bundle has three potential uses. In use **A,** it produces output that consumers value at $25; in use **B,** it produces output worth $22 to consumers; and in use **C,** it produces output worth $20 to consumers. The concept of economic efficiency says that these resources should be used to produce the output of use **A** because it has the **highest value**. If these resources are in fact used in **A**, the result is economically efficient. If they end up being used to produce either **B** or **C**, the economic system is not producing as much value as it could and the result is economically inefficient.

Furthermore, a market economy will tend to use the resources for use **A**. Because use **A** has the highest value to consumers, we expect that the producers of **A** should be able to bid the most for the resources. Normally, those who want to use it to

produce **C** will only be willing to bid up to $20 for these resources, the producers of **B** will only be willing to bid up to $22, but the producers of **A** will be willing to bid up to $25. Hence, the market system has a tendency to shift resources to their highest-valued use.

However, there are a variety of circumstances under which that bundle of resources will not get used for **A**, but will be used for **B** or **C**. One way that can happen is for the government to tax, regulate, or subsidize so that the relative values that consumers put on these uses do not get reflected in the bidding for the resources. Economic inefficiency can also occur when markets for some reason do not properly transmit the valuations that consumers place on the products. When the market cannot get resources to use **A**, economists say that we have a case of **market failure**. There are a wide variety of cases in which market failure can happen, and examining them is an important part of microeconomics.

In a discussion of the prisoner's dilemma, we considered whether what was good for the individual was good for the group. The concept of economic efficiency makes this discussion more precise and specific. When the outcome of people's individual actions is economically efficient, what is good for the individual is good for the group. When the outcome is economically inefficient, then what is good for the individual is not the best for the group.

TECHNOLOGY

In economics, the main focus of technology is on the cost and efficiency. It is an unwritten rule in about every sector that new technology has to be cheaper than existing technology; not forgetting that new technology also has to serve more functions than old technology. If there is a phone on the market, for example, a new phone being introduced to the market is expected to have more features than the one on the market, in order to be considered viable or advanced. Moreover, this new phone needs to be much cheaper as well.

It is however difficult to ignore the concerns that people have raised over technology. While it is generally agreed that technology is a vital driving force in any economy, it turns out that it has its shortcomings as well. One complaint that has been quite persistent would have to be the one about technology and job losses. Time and again, economists have expresses worries that machines are quickly taking the place of humans in production, thus rendering them jobless. The complains are that with each improvement in technology, thousands of people lose their jobs because now machines can do their work. Although this is obviously true in some sectors, there is apparent consensus among economists that the gains of brought about by technology far outweigh the shortcomings.

IMPORTANCE OF TECHNOLOGY

Mobile technology offers extensive help on various forms of social and economic development.

Technological innovation and Information Communication Technologies (ICTs) represent a way for developing world nations to foster economic development, improve levels of education and training, as well as address gender issues within society.

Entrepreneurship is crucial for economic development around the world. In countries such as Nigeria, Egypt and Indonesia, micro-entrepreneurs generate 38% of the gross domestic product. Analysis from the World Bank in 2011 indicates that small businesses create a disproportionate share of new jobs. They generate new ideas, new business models, and new ways of selling goods and services.

Wireless technology and ICT infrastructure development is also vital for entrepreneurship and small business development. In many emerging nations, it is a major challenge to gain access to capital and market information. Developing nations specifically do not have functioning infrastructure or much in the way of financial resources.

In sub-Saharan Africa, for example, approximately 29% of roads are paved, barely a quarter of the population has access to electricity, and there are fewer than three landlines available per 100 people. In Indonesia, 75% of the country has household incomes below $2.50 per day. The combination of poor infrastructure and poverty makes it difficult for entrepreneurs to access financial resources and information.

Below is an example of how a basic form of technology – such as a simple mobile phone – has been proved to assist people to communicate with one another, access market information, sell products across geographic areas, reach new consumers, enter mobile payment systems, reduce fraud and crime, and empower women and the disadvantaged.

The Self-Employed Women's Association (Sewa) in India includes 1.1 million workers who pool their resources to improve their bargaining power. The organisation sends agricultural workers daily SMSs on commodity prices so farmers can determine the best places to sell their products. Those participating say they have been able to market fruits and vegetables over wider areas, and thereby earn higher incomes.

The Ethiopia Commodity Exchange Program (ECEP) has helped entrepreneurs expand their markets. Before 2008, 95% of farmers sold their products in local markets and were not able to access other areas. Transaction costs were high and they had problems getting fair prices due to

the lack of market competition. With the advent of the ECEP, agricultural producers gained access to external buyers and were able to negotiate better prices. This boosted their incomes and improved the quality of food products.

The India-based Hand in Hand Partnership (HIHP) enables women to use mobile devices to launch businesses in the technology area. It provides mentorship, training, credit, and technical support.

In Kenya, the Farmers Helpful Network (FHN) gives agricultural producers access to the latest research through their mobile phones. Farmers can ask questions of experts concerning crop rotation, artificial insemination, and crop insurance. This helps them improve their agricultural production and marketing, and increase their overall income.

Access to mobile technology is particularly important for females because there are 300 million fewer women globally than men who own mobile devices. Overall, there is a 21% gender gap in owning a phone worldwide, but this number rises to 23% in Africa, 24% in the Middle East, and 37% in Asia.

Wireless communications also plays an important role in education and training. In Indonesia, the Global Ready eTraining Center program has trained over 1000 students in technology services. Those enrolled get vouchers for a three-month program. More than 95% of the individuals enrolled completed the class, and 75% said the course increased their income as a result of the skills acquired in the program.

A survey undertaken by the United Nations Development Programme (UNDP) found that 55% of women around the world earned additional income due to owning a mobile phone, and 41% increased their income and professional opportunities.

Mobile payment systems represent a way to reduce the cost of financial transactions and thereby help entrepreneurs. If people can transfer funds quickly and efficiently, it becomes easier for small and medium-sized businesses to sell their products. This improves the efficiency of the marketplace and removes barriers to growth.

Reducing “friction” is very important in African, Asian, and Latin American financial markets because barriers to financial transactions remain quite high. Only 30% of those who live in developing African nations have bank accounts.

In short, mobile technology offers extensive help on various forms of social and economic development. Wireless communications broaden access to information, improve capital access, overcome geographic limitations, and expand market access.

With mobile phones and tablets proliferating at a significant rate, these communications tools enable women, in this case the disadvantaged, and other individuals to access a broader range of investors, suppliers, and customers. Combined with social media platforms, people can extend their reach through mobile devices and pool resources in meaningful ways.