Summary No.4

Resource Scarcity, Economic Efficiency and Markets

In the previous parts, natural resources were recognized to be scarce and as such need to be used prudently. It was shown that it might be possible to integrate natural factors of production into the circular flow. In addition, the economic system created and operated by mankind must be viewed as subordinate to nature and a subsystem of nature.

In this part, two objectives are considered. The first is to show how prices are formed in the market and the extent to which prices can be used as a measure of resource scarcity. The second is to provide a clear understanding of the welfare implications of the allocative efficiency of perfectly competitive markets, the so-called invisible hand theorem. The chapter will show why mainstream economists have such deeply felt trust in the power of the market as a means of allocating scarce resources in an orderly and effective manner.

Markets respond to price signals. If a resource, whether it be a barrel of oil, or old-growth forest, is priced to reflect its true and complete cost to society, market will ensure that those resources are used in an optimally efficient way.

BASIC ASSUMPTIONS

Consumers and producers occupy an important place in a market-oriented economy. These entities are viewed as being single-minded in their economic behavior, pursuing their own *self-interest*. For consumers, this means maximizing the level of satisfaction (utility) they attain from the consumption

of final goods and services. From the producers' viewpoint, self-interest implies ensuring that they earn the "highest" possible
profit (utility) from the services they render to society. Producers' profit is affected by the degree of competition that exists in the market. Thus, "*maximize utility" is considered* an important first working principle of the market-oriented economy.

The effectiveness of an economy is judged by how well it satisfies the material needs of its consumers. Therefore, given that resources are scarce, an effective economy is one which is capable of producing the maximum output from a given set of basic resources (labor, capital and natural resources). this is possible if, and only if, resources are fully employed and no misallocation of resources exists. In other words, if the economy is operating on its production possibility frontier, that automatically ensures efficiency. Thus, "*efficiency" is considered* an important second working principle of the market-oriented economy. "*efficiency" is* the primary criterion to be used as a measure of institutional performance.

The question then is, what conditions must a market system satisfy in order to be considered as an efficient institution for allocating resources?
The market has to satisfy the following conditions:

1. *Freedom of choice based on self-interest and rational behavior*
2. *Perfect information*
3. *Competition*
4. *Mobility of resources*
5. *Ownership rights*

When the above five conditions are met, an economy is said to be operating in a world of perfectly competitive markets. In this case, the market system through its invisible hand will guide each individual to do not only what is in

his own self-interest, but also that which is for the "good" of society at large. Furthermore, market prices will measure the true scarcity value of resources. Prices are very important in any market-oriented economy. This is because of various important functions of prices in a market-oriented economy.

The question then is, what are the main function of market price?

Roles (Functions) of market price

- ✓ **Price as information signal:** prices are used as signals of the terms by which consumers and producers are willing to enter into a specific market transaction.
- ✓ **Price as market clearing signal:** prices bring about market equilibrium.
- ✓ **Price as a measure of resource scarcity:** For consumers, price measures *marginal private benefit* (MPB). For producers, prices measure *marginal private cost* (MPC). The equilibrium price equates marginal private (consumers') benefit with that of marginal private (producers') costs, that is $P_e = MPB = MPC$. In this context, a market price tends to reflect the *true* scarcity value of a resource under consideration. In pricing theory, the scarcity principle suggests that the price for a scarce good should rise until an equilibrium is reached between supply and demand, i.e. the higher the price is, the more scarcity of a good is.
- ✓ **Price as a signal of the trend of a good or service cost over time:** Prices measure changes in aggregate costs over time. That is, prices show the change in the *aggregate* costs of all the factors that are used in producing a specific good (labor, capital, natural resources, etc.). Thus, the possibility exists for the price of natural resources to be increasing while the price of a good or service is declining. Note that this observation does not take account of technological factors. For example, it is quite possible for coal to become scarcer (hence more expensive) and prices of electricity to

decline over time if power plants continue to improve on the efficiency of coal burning.

Case Study: Rising food prices in 2008: energy security, food security, and environmental concerns.

The rising trend in international food prices continued, and even accelerated, in 2008. U.S. wheat export prices rose from $375/ton in January to $440/ton in March, and Thai rice export prices increased from $365/ton to $562/ton. This came on top of a 181 percent increase in global wheat prices over the 36 months leading up to February 2008, and a 83 percent increase in overall global food prices over the same period.

Increased bio-fuel production has contributed to the rise in food prices. Concerns over oil prices, energy security and climate change have prompted governments to take a more proactive stance towards encouraging production and use of bio-fuels. This has led to increased demand for bio-fuel raw materials, such as wheat, soy, maize and palm oil, and increased competition for cropland. Almost all of the increase in global maize production from 2004 to 2007 (the period when grain prices rose sharply) went for bio-fuels production in the U.S., while existing stocks were depleted by an increase in global consumption for other uses.

Other developments, such as droughts in Australia and poor crops in the E.U. and Ukraine in 2006 and 2007, were largely offset by good crops and increased exports in other countries and would not, on their own, have had a significant impact on prices. Only a relatively small share of the increase in food production prices (around 15%) is due directly to higher energy and fertilizer costs.

The observed increase in food prices is not a temporary phenomenon, but likely to persist in the medium term. Food crop prices are expected to

remain high in 2008 and 2009 and then begin to decline as supply and demand respond to high prices; however, they are likely to remain well above the 2004 levels through 2015 for most food crops.

Forecasts of other major organizations (FAO, OECD, and USDA) that regularly monitor and project commodity prices are broadly consistent with these projections. Predictions of high food price in the medium run are further strengthened when we factor in the impact of policies aimed at achieving energy security and reduced carbon dioxide emissions, which may present strong trade-offs with food security objectives.