ECONOMICS U$A
LESSON #2

(MUSIC PLAYS)

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Stasio: Economics U$A. One of a series of programs designed to explore Twentieth Century micro and macro economic principles. The subject of this edition is Markets and Prices. Our guest is Herbert Levine, Professor of Economics at the University of Pennsylvania. I'm Frank Stasio.

Stasio: Who decides the amount of food that will be produced in the United States or the number of cars that will be manufactured? What determines the price of shirts and watches and butter and beer? Well, you might be tempted to answer that it is firms or individuals who produce those goods to decide on output and set the price. But that answer is only half right. Consumers, the people who buy goods and services also play a big part. Producers and consumers acting in their own self-interest come together to create the invisible marketplace where output is determined and prices are set. Economists generally favor the market system as an efficient way to allocate a society's limited resources. Herbert Levine is a Professor of Economics at the University of Pennsylvania.

Levine: In every economy there are many different types of decisions that have to be made and these decisions have to be coordinated into a meaningful set of decisions about how resources are to be used so as to produce goods and services both efficiently and in regard to people's desires, and a market is very effective mechanism for coordinating those…all of those types of decisions.

Stasio: The two groups who make up the market as we've said are consumers and producers. Organizations that produce goods or services are called firms. Most of the economy's total output comes from the roughly fifteen million firms in the United States.

Levine: When you look at the types of decisions that have to be made there are basically decisions that are made by people as consumers and as workers and decisions that are made by firms. The firms make the types of decisions that we refer to as "what" decisions. That is, every economy has to decide what goods and services to produce, how to produce them and for whom they're going to be produced. That is, what is the distribution of the income, the output that's produced by society? Firms make the decisions what to produce and they also make the decisions how to combine factors of production, labor, capital...there's machinery and land in making these goods.

Stasio: To understand how firms make those decisions in a free economy, it may be helpful to look at a system that does not permit the market to decide the price and output, the so-called planned economy. Professor Levine is an expert of the economy of the Soviet Union, which operates under a plan system.

Levine: The United States very simply firms try to maximize their monetary profit and that's putting in an…in an overly simple way but for the purposes here, let's say that

that's the objective. In a Soviet type economy, however, where markets are not used as the main mechanism for generating and coordinating all of these decisions, each firm is given a plan target that it's to produce not less than so many and so many units of a very specified product, and that it's to produce those outputs not using more than so many and so many units of labor, so many units of machine hours, so much land that it has to use, so much raw materials, etc.

Stasio: The two systems lead to very different ways of determining what gets produced and at what price.

Levine: In a market economy as uh, I've been saying, the firm faces prices of inputs and it has a certain opportunity of altering the prices of its outputs and so it makes its decisions on what to produce and how to combine labor and machinery, etc. in regard to these prices in such a way as to earn as high a profit as it can. What is the analogue of this in a planned economy? Well, the manager of a Soviet firm has a set of targets. At least so many of the different types of outputs that it might produce and no more than so much labor, so much machinery, etc., in inputs. Furthermore, its objective, at least we argue, its object…the manager's objective is to earn a bonus which are…the bonuses are established by the Soviet Regime in such a way that if you produce more than your target, the manager earns a certain premium. Uh, you earn premium primarily for over-fulfilling output targets rather than for cutting down on costs. As a result of this managerial bonus system managers in the Soviet uh, you know, managers of firms in the Soviet economy do try to produce high levels in terms of quantity of output.

Stasio: The workings of the market system were first described in the book The Wealth of Nations written by Adam Smith in Seventeen Seventy-six. Smith said the free market is guided by an invisible hand, which coordinates economic activity.

Levine: Now what is this independence? What is this invisible hand? It really is the price system. If a firm finds that it is making a great deal of profit, then the manager of that firm will increase the output of that good. You ask yourself why is the firm making a lot of profit? Well, what it means is at the price established people want more of that good than was originally planned to be produced. By buying up a lot of that product, people representing their desires communicate without sending letters or petitions to the owner of that firm. We want you to produce more. The fact that the purchases lead to increased profit means that the manager of that firm will produce more. Now in trying to produce more, they'll also raise the price somewhat. When he raises the price the peoples demand how much they're willing to buy gets reduced somewhat. Also, as the firm tries to produce more, he tries to hire more labor. How does he hire more labor? He has to offer higher prices for the labor. More laborers then try to get into this activity. So this pursuit of profit which looks like a whole bunch of individual atomistic types of decisions are really all coordinated through the interactions of people responding the prices of outputs and prices of inputs.

Stasio: So in a market economy price and output levels are set based on the demand for a product and the cost of producing it. Demand is determined in large part by the total number of consumers and their income. Then of course taste, values, and cultural preferences come into play. Finally, demand for a given product will be determined by its price. As the price of a product increases, demand drops off. If the price falls,

demand will increase. Experts are able to predict with reasonable accuracy the demand for a product at each price level, but their calculations assume that prices of other goods remain constant and that total income stays the same.

Levine: If you looked at uh, what…what is the demand for say, beef? You would say the demand for beef varies with the price of beef, but it also varies with many other things. As you say, it will vary with the price of chicken. It will also vary with a person's income. It will also vary perhaps with a person's age. What we do in our demand analysis, we say, all right, given of all of these other factors, if they for the moment remain constant then the amount of beef that you buy will vary with the price of beef. And then we say, however, okay, let us now vary the price of chicken. If the price of chicken goes up, then we say people will be willing to buy more beef at every possible price of beef. So we say it's that the whole demand curve shifts outward.

Stasio: So demand is based to some extent on price, which price depends partly on demand. We've come full circle. Economists argue that it is precisely this kind of circular activity throughout the economy that makes free markets efficient. Without this constant feedback, the connection between what is needed and what is produced breaks down.

Levine: Because what you have are managers trying to over-fulfill output targets rather than respond to the desires of not only the people as consumers but even those firms in the inter-industrial sector who use their output for example. Say a certain manufacturer is to produce seven different types of machines and that other producers in the economy need all those different types of machines. Well, what if the targets are set for seven

different types of machines, and the firm over-fulfills five of them and under-fulfills two. Is the manager going to be denied a bonus? And the answer is no. He's not denied a bonus. What tended to happen over time then is that the various distributions of output, composition of output got lumped into one number, number of machines. As a result of this, Soviet manufacturers manufactured a great number of the easiest machine to produce and the classic argument made by Soviet economists themselves when they criticized their own economy is the nail factory. That is, let's say a firm is supposed to produce uh, a certain uh, many different types of nails. Well, how to you get one unit to represent this. They say, okay, this firm is supposed to produce one hundred tons of nails this year. Well the manager of that firm and the cartoons in Soviet humor magazines show the firm producing one gigantic one hundred ton nail as it rolls it out. That's not very useful to the economy, but think about it for a while. What if the target for that firm was numbers of nails rather than tons of nails, then the manager would produce ten million, one quarter inch nails for the economy and would fulfill and over-fulfill his target. So the Soviets are stuck with a system that does not differentiate in regard to the composition of output, the quality of output. The focus is still the original focus, which was primarily just quantity of stuff.

Stasio: Market economies also differ from planned economies in the way firms decide how to produce their goods and services. Again, at the heart of a market economy is the desire for greater profits, which requires firms to use the more efficient production techniques. Levine says the drive for efficiency in a free market reflects the instinct to survive.

Levine: In the competitive process the pursuit of new methods of producing things and new products to attract people's attention is an extremely important element in the pursuit of profit and therefore, the pursuit of high prizes, high profit, high incomes, is this…is part of the drive that gives this dynamism to market economies, to capitalist economies. However, there's another element that's extremely important that is also handled differently in market economies, capitalist economies, and planned economies and that is bankruptcy or economic death. That is, say you're an industry…in a certain industry and your competitor develops a new method of producing the good that both of you produce. This reduces his cost, which means he can reduce his…his price and still make a profit unless you also adopt that innovation, that new way of producing things, you are going to die economically. The avoidance of death is in my mind even more of a…of a drive of an incentive to innovate, to keep up with new technology that is even the pursuit of large prizes.

Stasio: Innovation is important not only to the individual firm but it also fuels growth throughout the economy as a whole. In a market economy consumers buy the products they want at the price they're willing to pay providing firms with the financial resources they need to meet consumer demand. Firms also buy resources from consumers in the form of labor. This allows consumers to have enough money to buy the goods and services that firms produce. This circular flow of money along with the pressure to find ever more efficient production techniques encourages economic growth in a market system. Levine explains that without these forces, economic growth is more difficult to achieve.

Levine: There are two aspects of growth. That is, you can produce more of what you're producing today and you can produce it in the same way. Now how can that occur? Well, as long as you produce machines today, your capital stock continues to grow, your population, as long as you have adequate health facilities and the birth rate is high enough, the population will continue to grow. So just through the mere increase in inputs and also by rearranging inputs, moving inputs from low productivity areas to higher productivity areas, you can get growth without any technical change. However, as an industrial economy matures, more and more of the growth comes from technical progress rather than from just increasing labor and machinery inputs, and so the issue then becomes how do planners try to plan technical change. One way you can try to plan technical change is by investing a lot in your scientific community, and the Soviets have invested tremendously in their scientific community. But looking just at the economic growth, essentially what you're saying is how do you plan for system change. And that's…that's almost a contradiction in terms. Planning systems have their strengths, whatever strengths they have in stability in developing routine. Technical change is really the breaking of routine. The barriers to innovation that come from risk avoidance of Soviet managers is probably the most important difficulty in the Soviet economy today well recognized by Soviet leaders. In fact, Brezhnev in the early Nineteen Seventies uh, made a statement at a part of Congress that has been quoted uh, very often by Soviet economists in which he said, "why do our managers avoid technical change the same way that the devil avoids holy water."

Stasio: While the market system gets high marks for efficiency, it is not without its flaws. There are a number of social and economic problems that the free market is not

equipped to solve. There's a joke about a distant planet reaching temperatures of six hundred degrees on the bright side and four hundred fifty-six degrees below zero on the dark side. Scientists decide it would be a fine place to live since on the average the temperature is seventy-two degrees.

Levine: One of the problems that developed in market economies that showed up in the Nineteenth Century but intensified in the Twentieth Century building up to the Great Depression in the Nineteen Thirties was what refer to as the macro behavior of the economy as contrasted to the micro behavior. That is, while there is this coordination mechanism going on among all of the micro individual decisions in the economy, the total macro result while being somewhat coordinated may be coordinated at too low a level of activity which might mean that there is a high level of unemployment or as developed the level of coordination has a cyclical nature to it. Oh, at some points demand and production are rising very high. They build up to a peak and then the demand starts falling off because of relationships between demand and supply and we go into a down part of the cycle. So this cyclical aspect of the macro behavior of the economy came to be a very detrimental aspect of the economy. Many people in the midst of the Great Depression argued we have to sacrifice some of the inefficiencies of the market at the micro level to get rid of this terrible excesses of the cycle as they appeared, and the great suffering that high levels of unemployment caused to people and we have to introduce planning.

Stasio: Also, the market makes no judgment about the fairness of income distribution. By itself, the price system does little to help those in disparate poverty. When it's operating efficiently, the best a free market can do is offer equal opportunities to all who

have sufficient training skill or education, but there is not guarantee that the market on its own will lead to an equitable income distribution. One inequity exists there are mechanisms that are built into the price system that favor the well-endowed over the poor.

Levine: When you look at the…the model of the market economy as I've been describing it, all individuals seem to participate on an equal basis, but when you look a little more closely, of course, people get to vote in a sense in the economy, in a market economy in relationship to how many dollars they have because you vote with your dollar. Either you buy a good or you don't buy a good. Uh, it's not that everybody gets together once a week and votes one-person one vote in regard to what you want produced. Therefore, there is an issue, a philosophical issue, a value issue. Uh, do you accept uh, the basis of how goods are to be produced and how they're going to be distributed to people with regard to or that the decision-making mechanism there will be the number of dollars that each one of us earns. In the economic sector we usually argue that if you give each person one vote and distribute it equally. That is, if you have a total egalitarian approach to income distribution, that you may get equal shares of the pie, but that the pie is going to be very small. That in regard to people's psychological reaction patterns, that if you reward people directly with regard to the effort that they put forth, both effort at the workplace and effort at training themselves for the higher paying jobs, that if you reward people more directly, and that means with some inequality and income distribution, that you'll get a larger pie.

Stasio: There are some goods and services, which the price system cannot provide. These are called public goods.

Levine: The market economy covers all of those goods that are produced by individual firms where you can have an established price on the product, and therefore, you can operate through the price profit system. But take something like uh, a lighthouse. A lighthouse is used by many, many different people and yet the product that it produce…produces is not diminished in any way if I use it. When you get products of that nature and it's very vivid in the lighthouse example, you can't really charge directly for it. For those goods that we cannot charge directly for individual use and also same goods, for those goods where the amount that somebody purchases or uses does not diminish the availability to anybody else. We refer to those as public goods, and a decision making mechanism outside the market has to be uh, has to be constructed for that, and usually things like lighthouse, national defense ought…(glitch in tape)…exactly through the governmental process.

Stasio: Finally, the free market does not always capture all of the cost of production. It may impose an unfair burden on society. These are the so-called externalities of production.

Levine: A paper company located on a river, its costs are the cost of labor, the cost of machinery, the cost of raw materials. It also has a waste problem as it produces the paper. If you look only at the market, I am buying paper. We'll only have to pay for the direct costs of labor, machinery, and land. If the firm chooses to dump its waste into the river, it's a cost that I…I don't have to pay for when I buy that paper. The argument that individuals should not pay for uh, the clearing up of pollution is to an economist a fallacy. Not only should you, you must pay for it directly in the price of the product because part of the production process of that automobile or of that ton of steel or of that

roll of paper, part of that cost is the social cost of preventing pollution. And the point is that the market system itself has no real mechanism for attaching that cost unless the market…unless the firms are forced by government to prevent the pollution and then to include those charges as part of the cost the car to the public, as part of the cost of steel, as part of cost of the…the paper.

Stasio: For the most part, society is living under free market economies try to resolve the shortcomings of the price system through the political process. They have preferred to adjust the system at times limiting market freedom rather than discard the system altogether.

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Stasio: Let's review some of the main points in our discussion about the market system. A market economy is made up of consumers who buy goods and services and firms, which produce. The demand for a product depends on the income and number of consumers as well as their tastes and preferences. Also, demand is effected both that the price of the product and the price of other products that can be used as substitutes. One of the forces that drives a market economy is profit maximization. Firms in a market economy use the price system to allocate resources and determine how and how much of a product will be produced. If the demand for a product is greater than the supply the price will rise encouraging firms to turn out more. This will draw more of an economy's resources into the production of that good. Firms are also encouraged by the price system to produce goods at the lowest possible costs. Where the market system is not allowed to operate, decisions about price and output must be centrally planned. Errors in judgment

and the absence of incentives like profit as well as not having to fear bankruptcy lead to inefficiency in planned economies. Also, because there are few incentives for innovation, economic growth based on technological change is difficult to achieve in a planned economy. Firms in a market system must adapt to cost saving changes in technology or risk losing profits and ultimately being driven out of business. The price system does have its limitations however. It is possible for a market to achieve a balance between supply and demand at very low levels of output causing persistent high unemployment. The market system is blind to the issue of income distribution and can result in great disparities in income between the rich and poor. By itself, the market system will not provide public goods like national defense, nor does it necessarily capture all of the costs in providing a product, the so-called externalities of production. Most societies operating under a free market economy have recognized these shortcomings and have chosen to make adjustments to the system rather than switch to a planned economy.

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Stasio: You've been listening to Economics U$A, one of a series of programs on micro and macro economic principle. Our guest has been Herbert Levine, Professor of Economics at the University of Pennsylvania. Economics U$A has been produced by the Educational Film Center in Annandale, Virginia. I'm Frank Stasio.

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