

Welcome students, my name is Miss Ambika Dias assistant professor in the Department of Economics, Government College of Arts, Science and Commerce, Quepem Goa. The topic that I'll be explaining to you is measurement of elasticity of supply. The outline of this E module includes, Measurement of elasticity of supply. So basically we're going to look at two different methods of measuring elasticity of supply. So first will be the percentage method and 2nd will be the geometric method the learning outcomes. At the end of this E module, students will be able to differentiate between the two methods of measuring elasticity of supply. Now before we see the measurement of elasticity of supply, we will quickly go back to the meaning of elasticity of supply. So according to the Law of supply, if the price of a commodity. Increases the quantity supplied. Also increases and if the price of the commodity falls, the quantity supplied also falls, but how much quantity changes in response to the change in price cannot be known with the help of the law of supply and because of which we need the concept of elasticity of supply because elasticity of supply helps us. To understand the different quantities that are supplied in response to the changes in price. So the elasticity of supply is defined as the percentage change in quantity supplied due to percentage change in price. Now as far as the measurement of elasticity of supply is concerned. Firstly we will look at the percentage method of measuring the elasticity of supply. So under percentage method. We use the formula that is percentage change in quantity supplied divided by percentage change in price. Now this formula can be further calculated. So the percentage change in quantity supplied will be change in quantity supplied divided by the initial quantity supplied in 200 and change in quantity will be new quantity minus. Initial quantity, whereas percentage change in price will be change in price divided by initial price in 200 and change in price. Will be new price minus initial price. We shall now look at an example. Now take for example a firm supplies 50 units at the price of rupees 10 per unit. When the price rises to rupees 12 per unit, the firm increases the supply to 70 units. So using the formula that is change in quantity supplied divided by initial quantity supplied in 200, we have  $70 - 50$ . So 70s, because the supply has increased from 50 to 70 since the initial supply of the quantity was 50. So under initial quantity supplied we're going to put 50 in place of change in quantity supplied. We're going to say  $70 - 50$  because here the quantity supplied has changed from 50 to 70 in 200. So the answer that we are going to get. After calculating this will be 40%. Now calculating the percentage change in price where the formula will be change in price divided by initial price in 200. So change in price will be  $12 - 10$  because from 10 the price increase 2 divided by initial price which was 10. So after calculating this the answer that you're going to get is 20%. Now we are going to calculate the price elasticity of supply where percentage change in quantity supplied divided by percentage change in price now as calculated earlier, the percentage change in quantity supplied was 40% divided by the percentage change in price which was calculated earlier. It was 20% so  $40 / 20\%$ . So the final answer for price elasticity of supply will be. So this is about the percentage method of measuring the price elasticity of supply using the formula. That is percentage change in quantity supplied divided by percentage change in price in 200. The second method that we are going to talk about as far as measuring the price elasticity of supply is concerned is geometric method now. According to this method, elasticity is measured at a given point on the supply curve and the geometric method is also known as the arc method or point method. The three different cases of geometric method include firstly highly elastic supply. Secondly, unitary elastic supply and thirdly, less elastic supply. We shall now see all this. Cases of geometric method in detail. So firstly we have highly elastic supply where the numerical value will be E is greater than one. The elasticity of supply will be greater than one. So the supply curve which passes through the Y axis and

meets the extended X axis at some point, say L in the figure. Then supply is set to be highly elastic. We shall now look at the diagram. So as can be seen in the diagram on the X axis, we measure quantity supplied and on the Y axis we measure price. So in the below figure, since LQ is greater than oh Q, the elasticity of supply at point A is greater than one and therefore we can say that this is high elastic supply. The second case of geometric method is unitary elastic supply that is, elasticity of supply is equal to 1 and the numerical value here will be ES is equal to 1. So if the straight line supply curve S is passes through the origin, then elasticity of supply will be equal or the elasticity of supply will be equal to 1. So as can be seen in the diagram, the supply curve that is the S curve passes through the origin. So elasticity of supply ES is equal to oh Q divided by oh Q is equal to 1 and hence the supply is unitary elastic. The third case of the geometric method of measuring the price elasticity of supply is less elastic supply. That is elasticity of supply will be less than one and the numerical value here will be ES. Less than one. Further, if a supply curve meets the X axis at some point, say L, than the supply is inelastic. Now, as can be seen in the diagram, LQ is less than oh Q. So elasticity of supply will be less than one. That is here. You can say that the supply is less elastic. Now to summarize this E module, we spoke about the two different methods of measuring the price elasticity of supply. First was the percentage method where we use the formula that is percentage change in quantity supplied divided by percentage change in price. In 200 and the second method used to measure elasticity of supply is the geometric method. Now the geometric method is also known as the arc method or point method. Now as far as geometric method is concerned, we have 3. Cases. Where you have highly elastic supply. Secondly, you have unitary elastic supply and finally you have less elastic supply for your future references. You could refer to book Pendik. Robert yes, Rubenfield, Daniel L and meta microeconomics Pearson Education. You can also refer to HL. Ahuja 2019 Advanced economic theory. Micro economics analysis, thank you.