Demand Uncertainty in Models of Monopolistic Competition with General Utilities

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Utilities with Constant Elasticity of Substitution (CES) between products are widely used in modern research to describe monopolistic competition. Within this description, the size of the economy does not affect markups, prices, and outputs, contradicting empirical evidence. Therefore Zhelobodko et al. (2012) introduced an analytical framework to deal with additively separable preferences given in an unspecified functional form. They consider a two-sector economy: firms compete monopolistically in the hi-tech sector and face perfect competition in the traditional sector. In the model, the price can either decrease or increase in response to an expansion of the economy, depending on the elasticity of substitution between goods.

In the talk we enlarge the toolkit introduced by Zhelobodko et al. (2012) to describe equilibrium prices, outputs, and consumers' welfare under uncertainty.

We consider a two-sector economy. A representative consumer chooses between hi-tech and traditional goods with a Cobb–Douglas utility function. Introducing uncertainty we assume that firms treat the exponents of this utility as random variables. As a result, firms decide upon their outputs under uncertain demand. We consider a two-stage optimization. Initially, firms choose in advance the amount of goods to produce in order to maximize the expected profit. Later, when the random variables are observed, they adjust the prices. This scheme of decision making is in agreement with the hypothesis stating that a sequence of frequent shocks affects economic activity. A simpler example of this two-stage decision deals with seasonal goods.

We formulate a general equilibrium model and find when it is well posed. In the equilibrium, firms expectedly clear the goods market when adjusting prices. The influence of uncertainty on the equilibrium is linked to the response of the *aggregate* elasticity of substitution between hi-tech goods to a change in preferences for them. The aggregate elasticity is defined as a weighted average of individuals' elasticities of substitution and therefore assigned to the whole society. If the aggregate elasticity and the share z of the income spent for hi-tech goods change co-directionally then uncertainty shifts the equilibrium outputs downwards and moves the number of firms and real prices upwards. If the aggregate elasticity and z go in the opposite directions then uncertainty shifts the equilibrium outputs upwards and moves the number of firms and real prices downwards. The influence of uncertainty on consumer welfare is ambiguous. Uncertainty affects consumers' welfare positively if this uncertainty causes only small market imperfections.

References

Zhelobodko, E., Kokovin, S., Parenti, M., Thisse, J.-F., 2012. Monopolistic Competition: Beyond the Constant Elasticity of Substitution. Econometrica 80, 2765–2784.