KATEDRA HOSPODÁRSKEJ POLITIKY | CENTRUM PRE EKONÓMIU A FINANCIE | NÁRODNÁ BANKA SLOVENSKA EUROSYSTÉM

BRATISLAVA ECONOMIC SEMINAR

Invitation to the first Bratislava Economic Seminar on 28. March 2012

Gustav Feichtinger
Technische Universität Wien

Optimal Control of 'Deviant' Behavior

Abstract
For several decades, Pontryagin's maximum principle has been applied to solve optimal control problems in engineering, economics, or management. Early Operations Research applications of optimal control include problems such as production planning, inventory control, maintenance, marketing, or pollution control. Since the mid-nineties, optimal control models of illicit drug consumption have contributed successfully to a better understanding of drug epidemics and their control via an optimal mix of instruments such as prevention, treatment or law enforcement.
This talk explains why and how tools of dynamic optimization are used to address pressing questions arising in drug policy. Moreover, methodological advances in optimal control theory that have been triggered by solving these problems will be highlighted, e.g., multiple equilibria & SKIBA thresholds. We discuss social interaction mechanisms generating this sort of sensitivity of the optimal solution paths from the initial conditions. Another important type of complex solution structures are persistent limit cycles. A standard two-state production/inventory whose solution consists on a stable oscillation is presented. Surprisingly, it contains several indifference curves and a threefold Skiba point.

Luigi Luini
Dipartimento di Economia Politica, Università di Siena, Italy

Demand Cross Elasticity without Substitutability: An experiment

Abstract
We study a market in which goods are produced under low marginal costs with a poor degree of substitutability among products. In this environment we ran an experiment to explain why prices are interdependent even when preferences are independent. We compare our results to previous theoretical and laboratory experimental literature on price fairness. We find that even in the absence of interaction among subjects, price fairness/unfairness does play a major role in the decision to accept or reject a deal. Subjects tend to be more resistant to a price increase and reject a deal when the preferred product is not referenced to price increases of not substitute products, if these products are considered to be a benchmark for fair conduct. Thus demand cross elasticity can arise between products that are not substitutes. This result has important implications for antitrust policy. In delineating a market perimeter, fairness concerns suggest that products that are similar but not interchangeable should be included in the relevant antitrust market.

Venue: Faculty of Mathematics, Physics and Informatics, Mlynská dolina, lecture room C

Date: 28. March 2012

Program: 15:00 Gustav Feichtinger: Optimal Control of 'Deviant' Behavior
16:30 coffee break
17:00 Luigi Luini: Demand Cross Elasticity without Substitutability: An experiment