

APPLICATIONS OF  
MATHEMATICS AND STATISTICS  
IN ECONOMICS  
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BOOK OF ABSTRACTS





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**A BIDIMENSIONAL MODEL OF CENTRAL BANKING  
UNDER DEFLATIONARY PRESSURES: EVIDENCE  
FROM JAPAN, GERMANY AND SLOVAKIA**

The contribution presents results of an application of a model of central banking in deflationary conditions based on the ideas defended by Asada (2011, Central banking and deflationary depression, a Japanese perspective) and Asada et al. (2016, The stability of normal equilibrium point and the existence of limit cycles in a simple Keynesian macrodynamic model of monetary policy). The model describes the equilibrium of nominal interest rates and expected price inflation. A corresponding approximate discrete analog is derived for the continuous-time model, and is estimated by using data for the Japanese, German and Slovak economy to describe the actual conditions in which these economies operate. Mathematical properties of the estimated model for each economy separately are studied with an emphasis for their use in economic policy planning and making.

*Keywords:* application, approximate discrete analog, central banking, deflation