AXES/3

SC_EN_03

IMT SCUOLA ALTI STUDI LUCCA

RESEARCHERS

Francesco Serti

LAB

Analysis of Complex Economic Systems

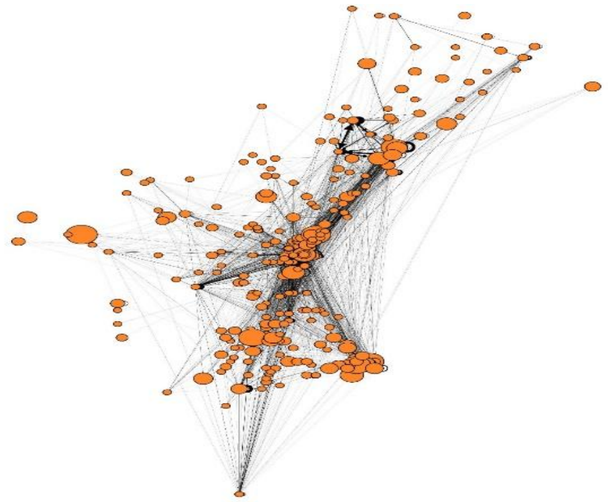
Research activity

Within the Laboratory of Analysis of Complex Economic Systems (AXES), the researcher's activity is based on the application of econometric tools mainly to large administrative databases of firms and individuals. The use of these tools is aimed at expressing in a quantitative way (using statistics and mathematical analysis) the relationships between economic phenomena as they appear in the data. The goal is to classify and reveal patterns present in the data, to test economic theories and evaluate the consequences of economic policy decisions and economic shocks. Particular attention is given to health and labor economics and to the study of firm dynamics. The main current and past research lines are listed below.

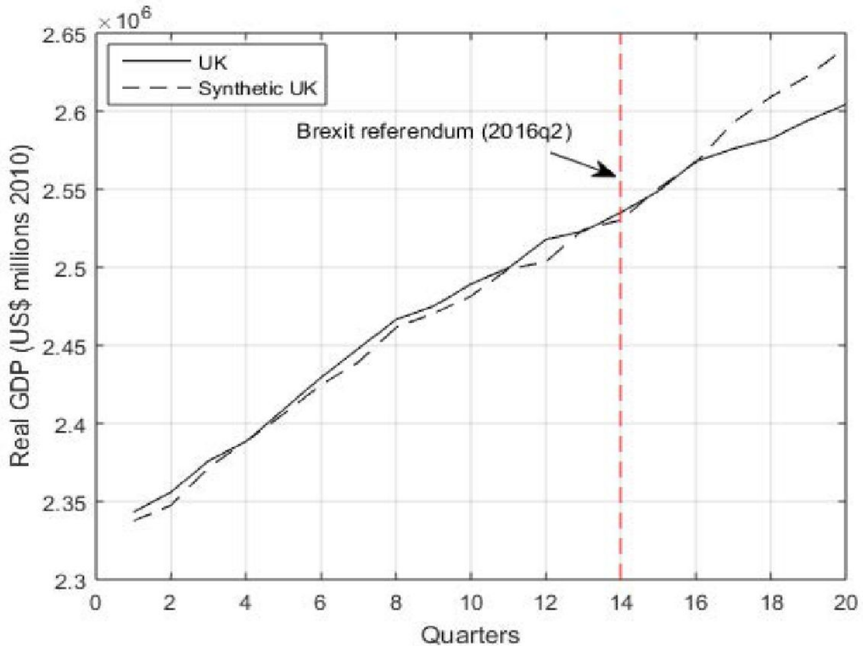
Health and labor economics: i) study of the effects of the economic cycle on wages and occupational safety (accidents at work and illness) with a particular focus on: lay-offs and entry into the labor market; ii) study of the effect of economic policies concerning the labor market, with particular attention to the evaluation of the effect of reforms aimed at liberalizing the labor market on occupational safety and health of workers; iii) study of the evolution of the demand for skills by companies and of its relationship with the introduction of new technologies and internationalization; iv) study of the determinants of prosocial activities with a focus on blood donation.

Firm dynamics: i) study of the productivity differentials between firms, in particular of those related to internationalization activities and to the use of new technologies, through the use of structural models of total factor productivity combined with quasi-experimental designs; ii) study of learning in production networks and of the success factors of businesses in international markets; iii) study of the evolution of comparative advantages and specializations of regions and sectors.

Images



Graphical representation of a production network



Estimate of the effects of the Brexit referendum on UK GDP

Technologies and services

Skills in the use and construction of algorithms with software for statistical/econometric analysis (STATA, R, MATLAB)..

Applications and collaborations

The research features and topics presented here are potentially relevant for consulting firms, public bodies with economic planning tasks and implementation/formulation of policies, trade associations, trade unions and private companies.

Given the growing availability of data for both private companies and public institutions, statistical/econometric analysis is an increasingly relevant instrument for the benchmarking of activities and policies, the identification of possible new areas of activity and performance evaluation. Some possible examples are identified below.

- Analysis of the strategies and possibilities of internationalization (exports, imports, FDI) of firms and local economies: diversification and repositioning in the global context.
- Analysis of competitive scenarios and positioning of companies, production networks and local economies: study of productivity and interdependencies in the technological supply chains.
- Analysis of educational and skills needs for the competitiveness of firms linked to technological change and new production paradigms (for example Industry 4.0).
- Impact assessment of public policies: social, labor, industrial and innovation policies.

For more information

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