



WIC Hybrid Colloquium

Modelling the size and dynamics of Mexican cartels

Wednesday, 14 February, 2024
15:00 – 16:00 (CET)



Rafael Prieto-Curiel

Complexity Science Hub, Vienna

Please click [here](#) to register.

Login information will be sent to registered participants shortly before the presentation.

Abstract:

Latin America is home to only 8% of the world's population, but roughly one in three homicides worldwide occur in the region. Part of the violence suffered is explained by large conflicting cartels fighting to control portions of territory or profitable markets. Despite immense losses in terms of members suffered by cartels over the last decade due to internal conflict against each other as well as incapacitation efforts from the state, Mexican drug cartels manage to compensate for their losses. We show that recruitment largely drives the ability of cartels to recover. Combining recruitment, incarceration, conflict and saturation, we construct a system of coupled differential equations, one for each active cartel. We leverage the increasing number of homicides in Mexico and the incapacitation effect (i.e., imprisonment rates) for the past decade to estimate the size of active cartels. Our results suggest that security policies oriented to arrest criminals will have a negligible effect compared to policies to prevent individuals from being recruited by cartels. Tackling cartel recruitment has a triple effect: first, it lowers the number of cartel members, reducing the violence it can create by having fewer killers. Second, it lowers the number of targets, so fewer people are vulnerable to suffering more violence. And third, it reduces the cartel's capacity for future recruitment.

About the presenter:

Rafael Prieto-Curiel is a Faculty Member at the Complexity Science Hub, working on violence, mobility, migration and urban dynamics. He is working for the OECD and for the World Bank, where he is doing a spatial and demographic analysis of African cities. Rafael Prieto-Curiel is the Scientific Advisor of Aleph. Before he was at the Mathematical Institute of the University of Oxford, He earned an MSc in Statistics and a PhD in Maths and Security and Crime at University College London UCL.

The Wittgenstein Centre is a collaboration among the Austrian Academy of Sciences (OeAW), the International Institute for Applied Systems Analysis (IIASA) and the University of Vienna.