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Modeling the Underlying Dynamics of the Spread of Crime

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The spread of crime is a complex, dynamic process that calls for a systems level approach. Here, we build and analyze a series of dynamical systems models of the spread of crime, imprisonment and recidivism, using only abstract transition parameters. To find the general patterns among these parameters—patterns that are independent of the underlying particulars—we compute analytic expressions for the equilibria and for the tipping points between high-crime and low-crime equilibria in these models. We use these expressions to examine, in particular, the effects of longer prison terms and of increased incarceration rates on the prevalence of crime, with a follow-up analysis on the effects of a Three-Strike Policy.