

A Small and Highly Stylized Model of Corruption and Fraud in the Brazilian Public Sector

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This research presents a small and highly stylized System Dynamics model of corruption in Brazil and its possible impacts on fraud in public procurement. It focuses on only two driving forces: 1) The impact of corruption on the level of economic investments in the country, which impacts the level of anti-corruption economic pressure and consequently the effectiveness of the judiciary system, and 2) The impact of corruption on income concentration and consequently on the level of active political participation of the population. The model was calibrated based on the Brazilian Corruption Perception Index (IPC). A scenario analysis was carried out to determine the behavior of the corruption curve and the number of corrupt companies for different configurations, and to study the sensitivity of corruption to these variables. Results show that when the judicial sensitivity is high, corruption levels and the number of fraudulent companies decrease. In the scenario of high sensitivity for lack of political participation, the levels of corruption and fraudulent companies increase. In both scenarios where the delays are low, levels of corruption and fraudulent companies change very little, however the dynamic behavior of corruption is drastically affected; If the population reacts more quickly, damped oscillation occurs. Based on these results, policy implications are discussed. Despite having low internal validity, the model reflects key determinants of the dynamics of corruption as suggested by the literature. The aim was to allow an analysis that goes beyond the theoretical-conceptual aspects, which was a limitation of previous comprehensive, but unpublished models, and to address more than one single driving force behind the dynamics of corruption, which was a limitation of previously published models.