

Institutional Change to Control Corruption: Moving from Econometrics to System Dynamics

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ABSTRACT

System dynamics provides the analyst an increased level of flexibility, as these models use both the theoretical underpinnings and empirical data. An econometrics approach was used to develop a model of the institutional influences in the control of corruption in a developing country. This type of model has been successfully converted into a System Dynamics model which uses the classic structure of goals and gaps and balancing feedback. As a demonstration of the approach, Pakistan and Costa Rica were chosen as case studies. It was found that the development of the model in Vensim and the translation of the model to Microsoft Excel had many benefits. In particular, using Excel gives the model complete visibility to someone outside the System Dynamics community and removes almost any thoughts that a 'black box' approach is being used. It was found that institution quality in Pakistan appears to be trending downward and the control of corruption can be focused on directly but it is recognized that there are limitations on how much can be done without looking at other institutions influencing control of corruption. While in the case of Costa Rica, institutional quality was trending upwards and if these trends continue, control of corruption will continue to improve into the future. The model can be used for a basic examination of potential trade-offs between the implementation of alternative policies. Using other weighting factors on the policy options based possibly on the costs or risks associated with the implementation of competing policies would be necessary to truly evaluate if this model could be used for policy prioritization or even policy optimization.

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