How crime affects economic performance: The case of Guatemala

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Abstract

The impact of crime on economic growth is obviously substantial, but measuring the degree of its effects on a country's economic performance is subject to a great deal of uncertainty. This paper primarily attempts to close this gap using the economics of crime monitoring model, a new economic instrument that could be used to evaluate the impact of crime on economic performance. Guatemala was used to illustrate the applicability of the model from where analyses provide a coherent evaluation of the degree to which crime can affect a country's economic performance.
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1. Introduction

Understanding the economic ramifications of crime in any given context usually begins with Becker's (1968) theoretical framework of the economics of crime that provides the basic explanation on the economic cost of crime. This paper basically takes its cue from this framework, and other notable studies such as Passell and Taylor (1977), Goldstein (1985), Cameron (1988),

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Freeman (1999), Dills et al. (2008) and Costa (2010), all of which extended the theoretical and analytical framework of economics of crime to encompass qualitative (legal) and quantitative (economics) research dimensions. Becker (1968) for instance, introduced the cost of crime model based on series of equations, limits, and conditions that facilitate the explanation of exogenous and endogenous crime variables. This model applies first derivatives that represent the marginal cost and marginal revenue in analyzing the cost/benefit effect of crime as well as, the application of welfare economics to analyze the relationship between crime and punishment. Moreover, Becker (1968) introduced the theory of collusion to support the legal principles and punishment of crime through a strict applicable legal framework. In essence, the pertinent aspects of the economics of crime framework rest on analyses of cost/benefit (opportunity/punishment), comparative historical data (absolute and relative values) and correlations and forecasting (Bertrand, Duflo, & Mullainathan, 2004).

With the above studies as precursor, this paper contributes to the study of economics of crime by introducing the economics of crime monitoring model (ECM-Model), a new economic instrument to evaluate the impact of crime on GNP growth. The model consists of five basic indicators *viz.* (i) the total crime frequency rate (β); (ii) the national crime vulnerability rate (μ_T); (iii) the crime devastation magnitude rate (λ); (iv) the economic desgrowth rate (δ) and (v) the crime vulnerability surface (VV-Surface). To test the ECM-Model, we apply it to assess the degree to which crime events in Guatemala between 1997 and 2012 affected the country's economic performance. It is expected that the ECM-Model will contribute significantly to a more systematic and accurate measurement of crime and its costs on the economic growth of any nation.

1.1. An overview of Guatemala

Guatemala is located along the narrow isthmus that links North America with South America at Mexico, El Salvador, and Honduras. Bordering the North Pacific ocean in the West and the Caribbean sea in the East, the country covers an area approximately 108,889 km^2 distributed in 22 departments, which makes it the third largest country in Central America in terms of land mass. With an estimated population of over 14 million, Guatemala is the most populous country in region. The ethnic composition of the country is distributed among the Meztizos (mixed Amerindian-Spanish) (Martinez Peláez, 1973), who have a majority of about 50% of the population, followed by the Mayans or Amerindians with 47%, while 3% is distributed among minority groups mainly Europeans and Asians (INE, 2012) and (UN, 2012).

Guatemala records an income per-capita of $5200 per year with 3.3% GDP real growth rate. The country boasts of $75 billion in GDP shares in Central America where the services sector predominates with an overall contribution of 63% to GDP followed by industry with 25% and agriculture 15% (Banguat, 2012; World Bank, 2012).

The country's labor force is concentrated in the services sector, which accounts for 48% followed by the agriculture sector with 38% and industry 14%. Overall unemployment stands at 4.1% and the distribution of income remains highly unequal with the richest 20% of the population accounting for more than 51% of Guatemala's overall consumption.

1.2. Evolution of crime and violence in Guatemala

The period between the 1980s and 1990s marked a time of Guatemala's dark history. It was a chaotic period that was shaped by a protracted armed conflict that affected the entire structure of Guatemalan society. The genesis of problems points to the cold war that positioned the country in