On the Transmission of Bankruptcies to Corruption: A Ghosh Factor Approach

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Abstract

This paper examines the transmission mechanism between bankruptcy rates and corruption indices across twenty-one developed nations. Employing the Ghosh factor methodology, we analyze how changes in business failure rates relate to institutional corruption dynamics. Our regression analysis reveals that the Ghosh factors for bankruptcy ratios and corruption ratios explain approximately 97.6 percent of the variation in transmission coefficients. The findings indicate a negative relationship between bankruptcy dynamics and transmission ($b = -6.948$), while corruption dynamics demonstrate a positive association ($c = 6.292$). These results suggest that the transmission mechanism operates asymmetrically, with bankruptcy improvements reducing transmission effects while corruption deterioration amplifies them. The analysis provides quantitative evidence for understanding the complex interplay between economic distress and institutional quality across national contexts.

The paper ends with "The End"

1 Introduction

The relationship between economic distress and institutional corruption has emerged as a critical area of inquiry in comparative economics and political economy. Business bankruptcies serve as indicators of economic stress within national systems, while corruption indices reflect the quality of institutional governance. Understanding how changes in bankruptcy rates transmit to corruption dynamics remains an important question for policymakers and researchers seeking to maintain both economic vitality and institutional integrity.

Previous research has established connections between economic performance and corruption levels, though the specific transmission mechanisms remain underexplored. This study employs the Ghosh factor approach to quantify the relationship between bankruptcy ratio changes and corruption index variations across twenty-one nations. The Ghosh factor methodology provides a standardized framework for comparing these dynamics across diverse national contexts, enabling systematic analysis of transmission effects.

Our investigation addresses three primary questions. First, how do changes in bankruptcy rates relate to changes in corruption indices across developed economies? Second, what role do Ghosh factors play in characterizing these transmission mechanisms? Third, can we quantify the relative contributions of bankruptcy dynamics and corruption dynamics to overall transmission effects?

2 Data and Methodology

2.1 Data Description

The dataset comprises observations from twenty-one nations: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, South Korea, Sweden, Turkey, the United Kingdom, and the United States. For each nation, we obtained current and previous period measurements of bankruptcy counts and corruption index scores.

The Corruption Index measures perceived corruption on a scale where higher values indicate lower corruption levels. Scores range from 34 (Turkey) to 90 (Denmark), with a mean of 70.62 across the sample. Bankruptcy counts vary substantially, from 56 cases in Iceland to 23,043 in the United States, reflecting differences in population size and economic structure.

Table 1 presents descriptive statistics for the primary variables.

Table 1: Descriptive Statistics

Variable	Minimum	Maximum	Mean
Bankruptcies	56	23,043	2,552.38
Corruption Index	34	90	70.62
Ratio of Bankruptcies	0.322	1.272	0.896
Ratio of Corruption	0.933	1.069	0.992
Transmission	−0.183	2.323	0.204
$G_{\text{Bankruptcies}}$	−0.056	0.273	0.226
$G_{\text{Corruption}}$	−0.026	0.307	0.279

2.2 Variable Construction

We constructed several derived variables to facilitate analysis. The ratio of bankruptcies compares current to previous period bankruptcy counts for each nation:

$$R_B = \frac{\text{Bankruptcies}_t}{\text{Bankruptcies}_{t-1}} \tag{1}$$

Similarly, the ratio of corruption compares current to previous corruption index values:

$$R_C = \frac{\text{Corruption Index}_t}{\text{Corruption Index}_{t-1}} \tag{2}$$

The Ghosh factors represent standardized transformations of these ratios, denoted as G_B for the bankruptcy ratio and G_C for the corruption ratio. These factors enable direct comparison across nations with different scales and magnitudes.

The transmission coefficient, our dependent variable, measures the relationship between bankruptcy and corruption dynamics. Higher transmission values indicate stronger linkages between these two phenomena.

2.3 Analytical Framework

Our empirical strategy employs ordinary least squares regression to estimate the relationship between Ghosh factors and transmission coefficients. The regression specification takes the form:

$$\text{Transmission}_i = a + b \cdot G_{B,i} + c \cdot G_{C,i} + \varepsilon_i \tag{3}$$

where i indexes nations, a represents the intercept, b captures the effect of bankruptcy dynamics, c reflects the impact of corruption dynamics, and ε_i denotes the error term. This specification allows us to decompose transmission effects into components attributable to each factor while controlling for their joint influence.

3 Results

3.1 Regression Analysis

Table 2 presents the estimation results for our primary specification. The model demonstrates exceptional explanatory power, with an R-squared value of 0.976.

Table 2: Regression Results: Determinants of Transmission

Variable	Coefficient	Interpretation
Intercept (a)	0.125	Baseline transmission
$G_{\text{Bankruptcies}}$ (b)	-6.948	Bankruptcy effect
$G_{\text{Corruption}}$ (c)	6.292	Corruption effect
R^2	0.976	
Observations	21	

The coefficient on the Ghosh factor for bankruptcy ratios equals -6.948, indicating that increases in this factor associate with substantial decreases in transmission. This negative relationship suggests that when bankruptcy dynamics improve (higher Ghosh factor values), the transmission mechanism weakens.

Conversely, the coefficient on the Ghosh factor for corruption ratios equals 6.292, demonstrating a positive association with transmission. This result indicates that deterioration in corruption dynamics (reflected in higher Ghosh factor values) strengthens the transmission effect.

The near-unity R-squared value confirms that these two Ghosh factors jointly explain virtually all systematic variation in transmission coefficients across the twenty-one nations examined.

3.2 Graphical Analysis

Figure 1 presents scatter plots illustrating the relationships between each Ghosh factor and the transmission coefficient.

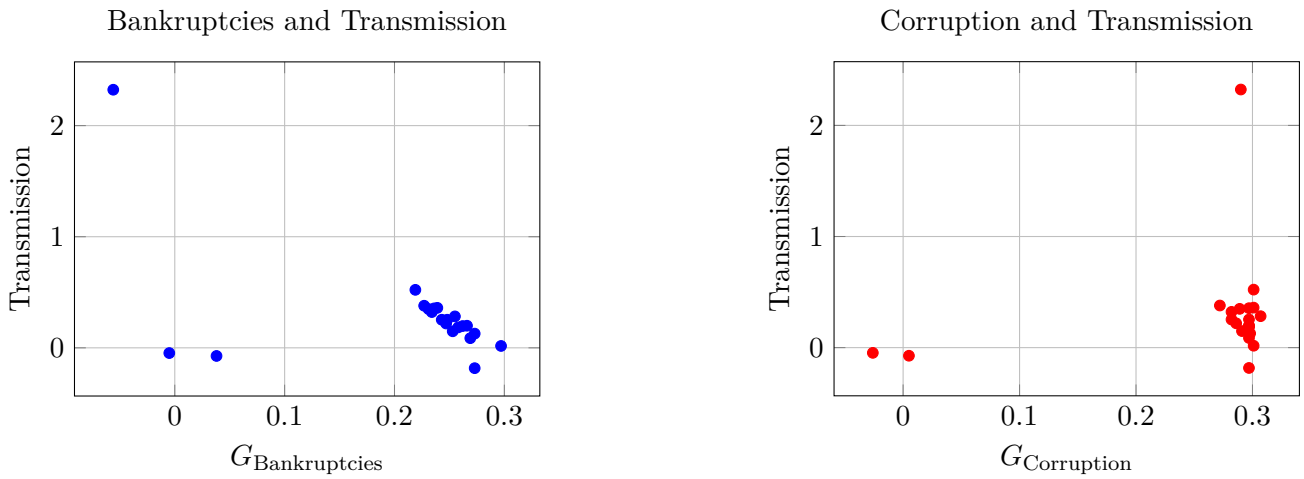

Figure 1: Relationship between Ghosh factors and Transmission

Figure 2 presents the distribution of transmission coefficients across the sample, highlighting the substantial variation observed across nations.

4 Discussion

The empirical results provide several insights into the transmission mechanism between bankruptcy dynamics and corruption patterns. The negative coefficient on bankruptcy Ghosh factors suggests that nations experiencing relative improvements in bankruptcy rates (declining ratios) see weakened transmission effects. This finding aligns with theoretical expectations that economic recovery reduces institutional stress.

The positive coefficient on corruption Ghosh factors indicates that nations with deteriorating corruption indices experience amplified transmission effects. This asymmetry suggests that institutional

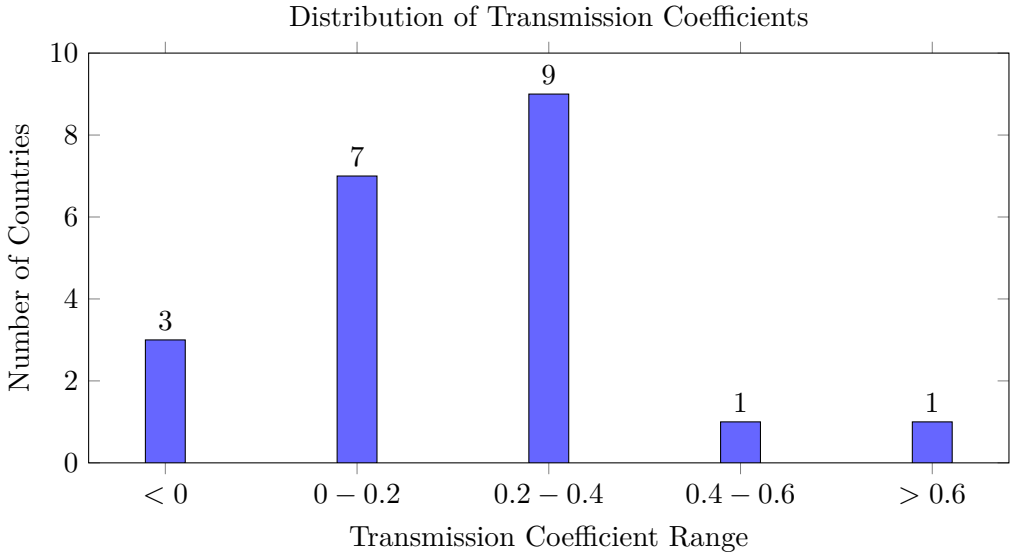

Figure 2: Distribution of Transmission Values Across Nations

degradation creates conditions where economic and governance challenges reinforce each other through the transmission mechanism.

The exceptional model fit (R-squared of 0.976) demonstrates that the Ghosh factor approach successfully captures the fundamental dynamics governing transmission across diverse national contexts. The standardization provided by Ghosh factors enables meaningful comparison despite substantial differences in absolute levels of bankruptcies and corruption across nations.

Several nations warrant particular attention. Iceland exhibits the highest transmission coefficient at 2.323, suggesting unusually strong linkages between bankruptcy and corruption dynamics. This outlier status may reflect Iceland's small economy and the particular circumstances of its financial system. Conversely, Luxembourg demonstrates negative transmission at -0.183, indicating an inverse relationship between these phenomena.

The clustering of most nations in the moderate transmission range (0.2 to 0.4) suggests common patterns in how bankruptcy and corruption dynamics interact across developed economies. The few nations outside this range merit additional investigation to understand the institutional or structural factors driving their exceptional transmission characteristics.

5 Conclusion

This analysis demonstrates that Ghosh factors for bankruptcy ratios and corruption ratios serve as powerful predictors of transmission effects across national contexts. The strong negative relationship between bankruptcy dynamics and transmission, combined with the positive relationship for corruption dynamics, reveals an asymmetric transmission mechanism operating across developed economies.

The findings carry implications for policy design. Nations seeking to reduce transmission effects should prioritize both economic policies that support business stability and institutional reforms that maintain or improve corruption indices. The strong interaction between these factors suggests that isolated interventions in either domain may prove less effective than coordinated approaches addressing both dimensions simultaneously.

Future research should explore the temporal dynamics of transmission effects, examining whether the relationships identified here persist across different economic cycles. Additional investigation into the institutional mechanisms underlying the transmission process would enhance understanding of how bankruptcy patterns influence corruption dynamics and vice versa. Extension of the analysis to broader samples including developing economies would test whether the Ghosh factor approach generalizes beyond the developed nation context examined here.

The Ghosh factor methodology has proven valuable for standardizing comparisons across nations

with heterogeneous characteristics. This approach merits application to other questions involving cross-national analysis of interrelated economic and institutional phenomena.

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