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# Corruption's Hold on the Economy: An Examination of the Causes of Economic Development

## Abstract

This study focuses on the relationship between political corruption and economic development through a cross-national survey of twenty-three of the twenty-five European Union Member States. This study was conducted in order to expand on the research conducted by Margaret Goodman and Nathaniel Leff. The survey examined the effect of political corruption on six dependent variables that represent economic development: gross domestic product per capita, unemployment rate, education, fertility rate, infant mortality rate, and government debt. Of the six, GDP, unemployment and fertility were shown to be significant. The findings suggest that corruption index increase coupled with a job creation program caused decreases in unemployment and increases in GDP.

## Keywords

European Union

## **Corruption's Hold on the Economy: An Examination of the Causes of Economic Development**

Peter Raatz

### **Abstract**

This study focuses on the relationship between political corruption and economic development through a cross-national survey of twenty-three of the twenty-five European Union Member States. This study was conducted in order to expand on the research conducted by Margaret Goodman and Nathaniel Leff. The survey examined the effect of political corruption on six dependent variables that represent economic development: gross domestic product per capita, unemployment rate, education, fertility rate, infant mortality rate, and government debt. Of the six, GDP, unemployment and fertility were shown to be significant. The findings suggest that corruption index increase coupled with a job creation program caused decreases in unemployment and increases in GDP.

### **Introduction**

Corruption is a multi-faceted phenomenon. It affects our workplaces as well as our governments, and due to its scope, corruption has been evaluated through a number of lenses. Some scholars have evaluated corruption through economics and others through politics. Still others have looked at the correlation between the two fields, and it is this third area of corruption analysis that interests this discussion. Within the cross-discipline research, there are two theoretical camps through which to pose an examination: either one believes corruption is a detriment to economic development, or one believes it to be a promoting force. This research devoted its attention to the comparative analysis of these two claims.

In order to accomplish this task, the research originally posed three questions: 1) Does corruption have a positive effect on economic development in the EU states, 2) Was the research conducted by Margaret Goodman sufficient to discount the Leff Theory, and 3) Which specific areas of economic development

does corruption affect? With these questions in mind, the research originally contended that the level of corruption would be positively correlated with the indicators of a country's economic development. This correlation would be due to corruption's tendency to quicken the pace of the bureaucratic process in accordance with Leff's theory.

However, once analysis was conducted the data displayed different results. Due to these findings, the research, rather than explaining the results within its original scope, determined that a better course of action would be to abandon its hypothesis in favor of the opposite hypothesis. Therefore, the focus of this paper shall be four-fold. It shall address the development of the two schools within the literature, model and variable development, data analysis, and finally, present a conclusion.

## **Literature Review**

### *Definition*

In order to gain a better understanding for the methodological approach, one must examine the literature of the field; the findings of such an analysis follow. Throughout the literature, one of the largest problems facing political scientists has been an inconsistent definition of corruption. Lancaster tells us that definitions can be divided into two sets: one set discusses corruption as a behavior performed by public officials which "deviates from some ideal state or natural condition about which scholars have different notions" and the second set which defines it in terms of systems containing particular attributes with a goal of explaining the "origins or persistence of the systems that elicit the apparently corrupt behavior" (Lancaster 2001, 6). An example from the first set is Rose-Ackerman's definition, which states that corruption is "behavior that deviates from principal-agent agreements between voters, politicians, and bureaucrats implicit in democracy" (Rose-Ackerman 1999). The key is that her interest lies in the behavior which causes the deviation, not the persistence of the deviation. An example from the second group is Tilman's definition of corruption "as the result of the adoption of a market-pricing mechanism for government goods rather than a mandatory pricing model of allocation" (Tilman 1970). Tilman's definition is

within the second set because his focus is on the systems rather than the behavior of the actors.

In addition, Hellman et al. defined corruption in terms of three bundles: influence, state capture, and administrative corruption (Hellman et al. 2000). The research divided these bundles according to the source and distribution of rents. Influence occurs when firms effect policy formation and thus legally get their benefits. State capture is when bribers receive special private benefits that are legal but are only provided through bribery. Finally, administrative corruption occurs when officials use their provided power over a firm to derive rents for themselves (Hellman et al. 2000). These vast definitions cause great confusion for the scholar when approaching the issue. For this examination, the study is more concerned with the systematic effects that corruption has rather than the behavioral. Transparency International, the organization which created the Corruptions Perceptions Index, provides the working definition for this examination. Their definition of corruption is "operationally defined as the misuse of entrusted power for private gain" (TI). Transparency International differentiates between "according to rule" and "against the rule" corruption: "facilitation payments, where a bribe is paid to receive preferential treatment for something that the bribe receiver is required to do by law, constitute the former. The latter, on the other hand, is a bribe paid to obtain services the bribe receiver is prohibited from providing" (TI).

### *Theoretical Background*

Another major division within the field exists between a focus on corruption's effect on politics and the economy versus the effect of the economy or politics on corruption. For the purposes of this examination, the reader will be directed towards the former division rather than the latter. Within this division, specifically towards economic development, there are two theoretical camps. The first primarily defines itself through two theories proposed by Nathaniel Leff and Samuel Huntington respectively. These theories state that corruption aids the advancement of the economy due to its ability to remove many of the roadblocks that presently exist

within bureaucratic governments. Leff examines corruption's ability to allow government to focus on a number of topics including: other matters of state, reduction of uncertainty, increases within investment due to that lack of uncertainty, and its ability to act as a "hedge against bad policy" (Leff 1964, 514-515). In addition, Leff's theory claims that the most efficient will benefit from corruption in the bureaucracy. This benefit will allow for more openness within the economy while weeding out the inefficient entities. Leff's theory is general and applies to all bureaucratic countries. Huntington claims that "in terms of economic growth, the only thing worse than a society with a rigid, over-centralized, dishonest bureaucracy is one with a rigid, over-centralized honest bureaucracy" (Huntington 1968, 497). The theories agree that corruption aids economic development, and since Goodman's focus is on Leff rather than Huntington, this study shall direct its attention to Leff's theory.

The second theoretical camp, advocated by Margaret Goodman, is a basic sense construct, which states that corruption hinders economic development through such means as limiting business expansion and costing more than taxation. In her argument, Goodman asserts that efficiency will not be the end goal of bureaucratic corruption. Rather, the conclusion will be a decrease in efficiency. In addition, Goodman postulates what the removal of corruption would offer. While this theory lacks support, Goodman concludes that the cessation of corruption would actually economic development within her case-study of the Yucatan state of Mexico (Goodman 1974). However, her explanation focuses too much on non-governmental organizations and too little on the role of the government and bureaucratic entities. In addition, Goodman's research is far too narrow in scope to disprove Leff's theory. The article merely addresses one of the reasons why Leff believes that bureaucratic corruption will benefit economic development. This prohibitive assessment is based on her lack of geographical diversity, her use of qualitative research instead of quantitative, and her failure to apply any of her findings to other developing and developed nations.

*Previous Research*

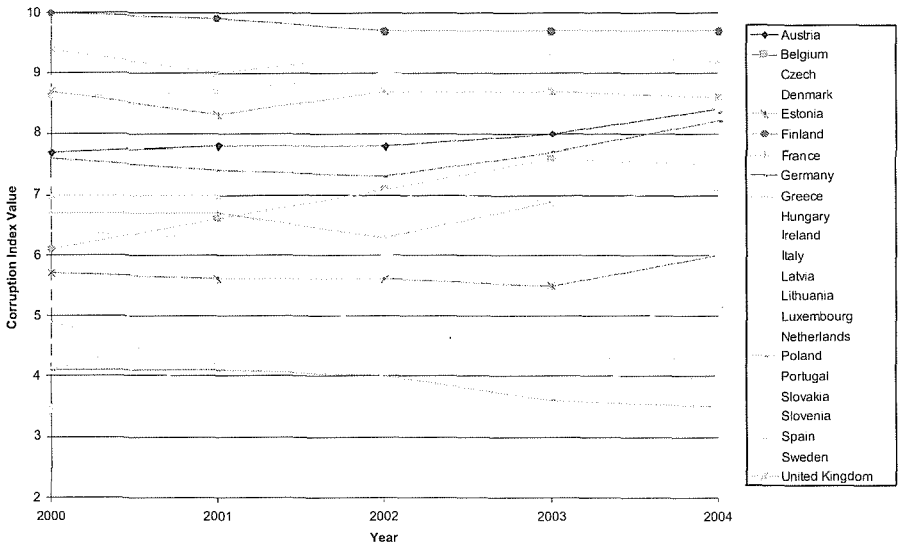
These two constructs formed the basis for this corruption research. In order to grasp further background upon which this research is based, one should investigate the research of previous scholars of corruption as it pertains to this examination. This examination involves corruption's effect on economic development; therefore, the most pertinent case was Margaret Goodman's research on the Yucatan Peninsula in which she examined Leff's Theory (Goodman 1974). However, other research areas are also pertinent. In examining corruption as an independent variable, the study found numerous areas of previous research. According to Kaufmann et al.—who measured development in terms of per capita income, child mortality, and literacy—corruption has been shown to limit development (Kaufmann et al. 1999). This research contributed two variables to the study and was influential in the beginnings of this research. Previous research has also shown that corruption has the following effects on issues related to economic development: it retards economic policy making (Bai and Wei 2000) and lowers Foreign Direct Investment (Wei and Shleifer 2000). In addition, the research found the work of Bardhan which argued that corruption creates economic efficiency (Bardhan 1997) similar to Leff's theory. Political areas affected by corruption include lowered attitudes towards governments (Anderson and Tverdova 2003) and increased state capture rates (Hellman and Kaufmann 2001). Both of these studies used and validated the independent variable for this research (the Corruption Perceptions Index). Further examination of the variable comes in the next section.

**Research Design and Measurement***The Cases*

As the literature shows, corruption analysis exists both in qualitative and quantitative studies. However, in regards to Leff's theory, only Margaret Goodman's qualitative research has been conducted. The problem with Goodman's research is three-fold. First, Goodman's research was focused only on a single case study, the Yucatan Peninsula, as this qualitative analysis was far too narrow to ever dismiss such a generalized theory. Second,

Goodman's research was geographically narrow—the theory made no reference specifically to the Latin American area. Finally, Goodman's research cannot transport to other examinations. This is demonstrated in that no scholar after Goodman has used her findings to perpetuate their cases. Therefore, this examination looks at the cases of the European Union Member States (EUMS). These countries include: Austria, Belgium, Cyprus, Czech

Figure 1: Corruption Index Levels from 2000-2004



Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Spain, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Sweden, and the United Kingdom. Since data for Malta and Cyprus did not exist within the index previous to 2003, these countries were removed from the study. The EUMS countries are optimal to address the three-fold criticism of Goodman. First, they display a quantitative research. Second, while they are in close proximity, they display differences amongst economic development and corruption as Figure 1 displays. Third, the results will be transportable to other research due to their varied levels of economic development. Finally, the over-arching bureaucracy



present in the European Union, in addition to the bureaucracies already present on the national level, offers a unique insight into Leff's Theory of Beneficial Bureaucratic Corruption.

*Independent Variable: Corruption*

The independent variable for this research is political corruption. It is measured through the Corruption Perceptions Index (CPI) produced by Transparency International. This index is a scale derived from a collection of scales issued by other organizations. Each year the exact number of scales included in the index changes; the most recent index for 2004 includes twelve scales:

BEEPS, the Business Environment and Enterprise Performance Survey, 2002;

CU, the State Capacity Survey by the Center for International Earth Science Information Network at Columbia University, 2003;

EIU, The Economist Intelligence Unit, 2004;

FH, Freedom House Nations in Transit, 2004;

II, Information International, Beirut, Lebanon, 2003;

IMD, the International Institute for Management Development, 2002-04;

MDB, a multilateral development bank, 2002;

MIG, Grey Area Dynamics Ratings by the Merchant International Group, 2004;

PERC, the Political and Economic Risk Consultancy, Hong Kong, 2002-04;

TI/GI, Gallup International on behalf of Transparency International, Bribe Payers Index Survey, 2002;

WEF, the World Economic Forum, 2002-04;

WMRC, the World Markets Research Centre, 2004 (CPI 2004).

The CPI ranges from 10 to 0, where 10 represents a corruption free government, and 0 represents a completely corrupt government. The range for the EUMS extends from 10-3.4.

To display the effects of Leff's theory over a period of time, the measures are conducted from 2000-2004. These values are then applied to dependent variables.

### *Dependent Variables*

In Leff's research—as well as Goodman's—economic development had to be operationalized, and this research is no different. Therefore, this study chose to operationalize economic development based upon six dependent variables which examine five sub-sections of economic development. These six variables are: Gross Domestic Product per capita, Governmental Debt, Long-Term Unemployment Rate, Education level, Life Expectancy at birth, and Fertility Rate, and the five sub-sections are wealth (GDP), debt (Debt), labor (Unemployment Rate), labor development (Education), and labor replacement (Fertility and IMR).

This study chose GDP/capita based on its ability to display the growth of a state's fiscal economy and its accruing wealth. Its selection is also due to previous research conducted by Kaufmann et al (Kaufmann et al. 1999). The measure is determined by subtracting the value of any goods or services used in production from the value of goods and services produced. The measure is expressed in Purchasing Power Standards (PPS) versus the average of the EUMS, which is set at 100. Therefore, if the value is greater than 100, the country is better than average (EuroStat, GDP). The expectation for this variable is that it will show corruption's impact on the wealth accumulation of a country.

The next variable chosen was Governmental Debt. Government debt was added due to a discussion of possible negative effects addressed by Leff (Leff 1964). The effect is based on the usefulness of government spending; if corruption were present, officials would be inclined to spend money based on demand from bribers rather than on other legislation. Since the cost to improve would be higher than maintaining the status quo, Leff postulated that government debt would decrease. This theory agrees with the concept of economic development because the European Union's Maastricht treaty, in an effort to develop the economy has maintains a debt limit of sixty percent. The

expectation is that this variable will show findings that are opposite of those postulated by Leff. If this is the expectation, then the study should hope to find a negative correlation between the two measures. Governmental debt is determined as a percentage of the GDP for that year. Foreign Currency Debt is transferred first into the national currency. Each figure is then converted to a EUR value based upon the value of the Euro at the end of the relevant year (as determined by the European Central Bank) (Eurostat, Debt).

The third variable is Long-Term Unemployment Rate. This variable was selected based upon theories determined within Nice's research on welfare benefits (Nice 1986, 292). The variable is determined through survey data conducted by Eurostat. The survey asked for the number of individuals who were long-term (12 months or more) unemployed citizens; the unemployed person must be at least 15 years of age and be actively seeking employment. That number was then taken as a ratio to the number of active members of the population. The active population is the total number of employed and unemployed population (Eurostat, Unemployment). This study expects the given variable to explain corruption's effect on labor. The desired outcome would be a negative correlation between unemployment and the CPI. This would show that decreases in corruption tend to aid the labor section of economic development.

The fourth variable is education attainment level. This variable was selected based upon Husted's definition of economic development which seeks secular increases in education among other indicators (Husted 1999, 342). The expected outcome is that education will be positively correlated to the CPI measure and thereby would explain the labor development section of economic development. Eurostat defines the CPI measure as the "percentage of the population aged 20 to 24 having completed at least upper secondary education" (Upper level secondary education was further defined as the education level of ISCED 3-4). This value was the numerator and the total population within the age cohort was the denominator. The figures were gathered from Eurostat's annual Labour Force Survey (Eurostat, Education).

The fifth variable is total fertility rate. This variable was chosen in order to observe replacement rates for labor forces. The expectation is that the variable will show a positive correlation. This would mean that as corruption decreases, fertility will increase, allowing for the replacement of the workforce as well as the addition of new labor for new positions created during economic development. The measure for this variable is the mean number of children that would be born alive to a woman during her lifetime. This is a hypothetical measure that offers an indication of the rate at which the workforce is increased; this replacement level is set at 2.1 (Eurostat, Fertility).

The final variable is infant mortality rate per 1,000 live births. The variable was chosen for its relation to Kaufmann et al.'s research (Kaufmann et al. 1999). The study expects that this variable, in addition to fertility rate, will show that corruption aids in the advancement of the labor replacement section of economic development. The measure is defined as "the ratio of deaths of children less than one year of age during the year to the number of live births in that year (Eurostat, Life)." The measure offers an insight into the advancement level of a society. If the country is indeed developing, it should observe decreases in its infant mortality rate.

## **Hypotheses**

When this study began, the research was directed toward the examination of Leff's theory from a supportive standpoint. Namely, the hypothesis proposed that Leff's theory was true and that Margaret Goodman's research focused too narrowly on a single outlier to properly discount this theory. The study embarked upon this attempt to validate Leff's theory only to conclude that the data supported the opposite hypothesis—the data supported a furtherance of Goodman's claim. Due to this finding, the research was left with two options: 1) revise the hypotheses based on the observations made in order to find a causal relationship and proceed in a different direction than was first prescribed, or 2) maintain the current position and try to account for the lack of data support. This study chose to revise the hypotheses in light of its initial findings, citing that sufficient data was not present in order

to establish a counter-claim to the original hypothesis. Therefore, the study was left formulating new hypotheses.

Due to the inability of SPSS software to formulate a hypothesis measure with multiple dependent variables, the study was forced to examine each dependent variable separately. Consequently, this produced six separate hypotheses rather than one large, over-arching hypothesis.

Hypothesis 1: The first dependent variable was GDP/capita. This study proposes that as the corruption index increases (corruption is eliminated), GDP/capita will also increase.

Corruption index increase -----> GDP increase

Hypothesis 2: The second dependent variable was Governmental Debt. This study proposes that as the corruption index increases, debt will decrease.

Corruption index increase -----> Debt decrease

Hypothesis 3: The third dependent variable was long-term unemployment rate. This study proposes that as the corruption index increases, unemployment will decrease.

Corruption index increase -----> Unemployment decrease

Hypothesis 4: The fourth dependent variable was education level. This study proposes that as the corruption index increases, education will also increase.

Corruption index increase -----> Education increase

Hypothesis 5: The fifth dependent variable was fertility rate. This study proposes that as the corruption index increases, fertility will also increase. This is a corollary measure.

Corruption index increase -----> Fertility increase

Hypothesis 6: The sixth dependent variable was infant mortality rate. This study proposes that as corruption index increases, infant mortality will decrease. This is a corollary measure.

Corruption index increase -----> Infant Mortality Rate decrease

## **Data and Findings**

This section of the research is dedicated to the results of the data analysis and a discussion of their meaning. Throughout this section, the study will explain the process by which it developed its data research. The main findings of this section, with the exception of the education level variable, are in accordance with the proposed hypotheses.

The study began data analysis by entering all data into a SPSS document. The format divided variables first by year and then by country. It should again be noted that the countries of Malta and Cyprus were not included within this research due to a lack of data for the corruption variable. However, since both countries ranked within the first standard deviation for the corruption variable, this study has concluded that their impact should be less than if they had been outlying cases. The bi-variate analysis was conducted using each variable, dependent and independent, based upon year. Therefore, the CPI for 2004 only relates to the GDP, debt, unemployment, education, fertility, and IMR for 2004. The years contained within the study are 2000-2004. The measures used for the bi-variate research were Pearson's Correlation Coefficient and Significance Test. The regression analysis used measures for both the model and variable. For the model, the reported regression measures are  $R^2$ , F, and F significance. For the variable, the reported regression measures are Beta, Standardized Beta, t, and t significance.

At this point, the focus shall shift to the individual hypotheses and their findings. Note that since SPSS programming made it impossible to measure multiple dependent variables, each variable is incapable of showing multi-collinearity within the model. This eliminates the necessity for the t statistic. Regardless, it will be reported so for data reproduction purposes.

*Hypothesis 1: GDP/capita*

Data Analysis for all of the variables began with a bi-variate analysis amongst all of the variables, independent and dependent, to determine the significance of each in relation not only to corruption, but also to one another. As we see in Table 1, GDP showed significance to the .01 level in all years of this study. Therefore, we can conclude that there is a strong relationship between the two. In addition, although not shown in the table, GDP showed a strong relationship to the .01 level with Fertility and Unemployment. This seems logical due to the fact that these were the three variables that showed significance in corruption.

In further study, the variable was placed into a year-by-year regression model that is displayed in Table 2. As it shows, the regression displayed a high  $R^2$  value as well as a significant F value for the model each year. While there is some fluctuation, this can be accounted for by the progression of time. Simply stated, some years will be slightly better or worse than others. The coefficient measures were also significant. This allows us, as researchers, to conclude that decreases in the level of political corruption had a causal relationship with increases in GDP during this five-year span. However, we should note that these figures only tell us that it happened each year. Consequently, the model could have shown no significance one year and still would not have refuted the fact that, in all other years, this trend was true. Possible explanations for this phenomenon are too numerous to comprehensively discuss here, but some include: more open economic systems due to the ability for greater competition, and less controlling laws delineated to aid one firm while hurting others. This meant that more research was necessary across the other variables to determine where other possible significances could be found. Therefore, the study progressed to its second hypothesis.

*Hypothesis 2: Debt*

As stated above, the analysis for all variables began with a bi-variate test to locate correlations. As Table 1 indicates, governmental debt was found to be insignificant with respect to corruption. In fact, governmental debt was found to have no

correlation to any of the other variables. The reader should note that the data is inconclusive in proving or disproving the hypothesis for debt. However, there does appear to be a trend forming as the variable has switched effects since 2001.

Due to its inability to present significance in the bi-variate tests, there was no regression run on the model. Therefore, the study was left with determining how to address the hypothesis. It concluded that the hypothesis was disproved based on a lack of relationship rather than an opposite relationship. This failed hypothesis does little to help explain the causal relationship in GDP. The only aid that the hypothesis provides is in showing that the relationship is not based on governmental spending. The third variable, however, displayed results that aided the study's explanation of the causal relationship.

### *Hypothesis 3: Long-Term Unemployment Rate*

In the bi-variate tests, the third hypothesis on unemployment rate returned a positive correlation with corruption each year. As Table 1 illustrates, the correlation's significance was to the .01 level. Just as with GDP, unemployment showed a strong correlation with GDP and Fertility. These three variables appeared to make up the bulk of the causal relationship at hand.

The variable was then run in a regression model across the five-year span. The regression model returned a causal relationship as well. Table 3 indicates the level of the findings. The reader will notice a high  $R^2$  value as well as strong significance for the F value of the model. This causal relationship gave the research insight into the potential reason for this relationship. If the nature was due to job increases (based upon the more open economic system allowed by a lack of potential bureaucratic holds placed on the economy by political corruption) then this would create more jobs, thus causing a decrease in the number of unemployed people and an increase in the GDP of the country due to increased production. The study has found that both are present within the literature. Increases in job-creation have been occurring across the European Union, especially in beginning years of the millennium (Economist 200, 53). Across the EMU, created jobs have lowered most countries unemployment



rates by nearly two points (Economist 2000). Whether this trend can be attributed to a fight against corruption, or corruption's role in job-creation, is still hypothetical. Lastly, it should be noted that this data shows a proof of the hypothesis proposed for unemployment. As the study continues, we approach the fourth variable— education.

#### *Hypothesis 4: Education Level*

Education level, as shown by Table 1, showed no significance to corruption over any year in the bi-variate analysis. The levels are high enough though that we can draw conclusions. Our hypothesis was that education would be positively correlated to the corruption variable. In the first two years this was shown. However, in the last three years there has been a shift to support the counter-claim. If we follow the logic of the causal relationship that has been presented then we must conclude that job availability pulled workers as well as students into the workforce and out of the educational system. If this were true there would have to be a correlation between education and unemployment. However, no relationship exists. How then can we determine the nature of this relationship? It may be that the information is not within our data to produce an answer or even a hypothetical answer to the question. We should remind ourselves that there is no significance to this relationship. It may be caused by chance. Further analysis of the final two variables could aid this procedure. If not, the study may be left with an unanswerable question. To further examine these variables, the study now turns to fertility, a variable already known to have relationships with both GDP and Unemployment.

#### *Hypothesis 5: Fertility Rate*

The variable fertility rate was by far the strangest result of this data analysis. When the bi-variate analysis was conducted, fertility not only registered significance each year, it also rivaled GDP and Unemployment as the top variable. As Table 1 illustrates, fertility is strongly correlated to corruption, but it is also, as stated above, correlated with GDP and Unemployment. When a year-by-year regression was run on the variable it displayed significance in every year. The model values displayed an  $R^2$  value that was high

as well as a strong F statistic and significance. Kaufmann et al. already discovered this relationship between GDP and fertility (Kaufmann et al. 1999); however, the finding of unemployment rate was undocumented in the past.

The question that remained was how job availability related to fertility. The original hypothesis was that corruption index levels would correlate positively with fertility, based on the replacement section. This was proven true. This research cannot provide an explanation for this occurrence related to the job creation explanation. The easiest assumption would be that these are two separate causal relationships, maybe interconnected due to the correlations between the three dependent variables, but fertility could not play a role in job creation. Though this hypothesis cannot be verified, it would explain all three causal relationships if shown to be true. Further research within job creation and fertility possibilities is needed before this relationship can be adequately understood.

#### *Hypothesis 6: Infant Mortality Rate*

This final variable was entered into the study as a correlation variable for economic development as a whole. The bivariate tests concluded that infant mortality rate was not correlated to corruption, or any other variable in the study. However, a small significance and correlation is present. For the purposes of our hypothesis we shall examine them. As Table 1 shows, the correlations are all negative. This finding agrees with our hypothesis. This means that as the corruption index increases, infant mortality rate decreases. The question is whether or not there is a causal relationship—the answer to this question is no. Corruption levels decreasing cannot affect how many children will die before the age of 1 without an intermediary variable. As we thought, this finding does little to aid our claim regarding job creation. However, it was a worthwhile variable given its place within the scope of economic development.

#### **Conclusions**

To conclude, the study found that all of its new hypotheses were correct except for the hypothesis concerning education. The

data results were confusing at first due to education's usually high role in determining the advancement of a state's economy. While the hypotheses proposed for this study did not adequately address this shift, further research could present a possible explanation.

Further conclusions were that gross domestic product as well as unemployment rate served as the two areas of greatest causation because of their close relation to job creation. The other two causal measures focused on areas of economic development that may not be as directly affected by corruption.

As for the corollary measures, fertility was found to be significant and the infant mortality rate was not. However, both followed their hypotheses, and this data allowed the study to determine that infant mortality rate does not represent an effective measure for economic development as it pertains to corruption. Further research could be conducted in the area of gender-specific job creation as it is affected by corruption. In addition, as this study was unable to incorporate data pertaining to either Malta or Cyprus, further research could be done upon those countries. Finally, the appearance of the shift in education poses questions that this research was not able to answer. Further research regarding the shift in education participation would be an interesting annex to the performed research.

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**Table 1**

Variable (N)	Pearson's Cor. Coeff:	Pearson's Significance
<b>Corruption vs. GDP</b>		
2004 (23)	.731**	.000
2003 (23)	.783**	.000
2002 (23)	.773**	.000
2001 (23)	.791**	.000
2000 (23)	.753**	.000
<b>Corruption vs. Debt</b>		
2004 (23)	-.041	.847
2003 (23)	-.001	.995
2002 (23)	-.026	.908
2001 (23)	.003	.987
2000 (23)	.014	.949
<b>Corruption vs. Unemployment</b>		
2004 (23)	-.727**	.000
2003 (23)	-.726**	.000
2002 (23)	-.747**	.000
2001 (23)	-.790**	.000
2000 (23)	-.840**	.000
<b>Corruption vs. Education</b>		
2004 (23)	-.188	.379
2003 (23)	-.261	.219
2002 (23)	-.175	.426
2001 (23)	.156	.478
2000 (23)	.145	.509
<b>Corruption vs. Fertility</b>		
2004 (23)	.754**	.000
2003 (23)	.781**	.000
2002 (23)	.720**	.000
2001 (23)	.746**	.000
2000 (23)	.691**	.000
<b>Corruption vs. Infant Mortality Rate</b>		
2004 (23)	-.122	.561
2003 (23)	-.221	.300
2002 (23)	-.216	.323
2001 (23)	-.289	.182
2000 (23)	-.280	.196

\*\* . Correlation is significant at the 0.01 level (2-tailed)

Table 2

RegressionGDP

'04		'03	
Adjusted R <sup>2</sup>	.535	Adjusted R <sup>2</sup>	.595
F Stat.	26.439	F Stat.	34.832
F Stat. Sig.	.000	F Stat. Sig.	.000
Unstnrd Beta	14.820	Unstnrd Beta	15.242
Stnrd Beta	.731	Stnrd Beta	.783
t	5.142	t	5.902
Stat. Sig.	.000	Stat. Sig.	.000
'02		'01	
Adjusted R <sup>2</sup>	.579	Adjusted R <sup>2</sup>	.608
F Stat.	31.236	F Stat.	35.100
F Stat. Sig.	.000	F Stat. Sig.	.000
Unstnrd Beta	15.312	Unstnrd Beta	16.364
Stnrd Beta	.773	Stnrd Beta	.791
t	5.589	t	5.925
Stat. Sig.	.000	Stat. Sig.	.000
'00			
Adjusted R <sup>2</sup>	.546		
F Stat.	27.438		
F Stat. Sig.	.000		
Unstnrd Beta	15.352		
Stnrd Beta	.753		
t	5.238		
Stat. Sig.	.000		



Table 3

RegressionUnemployment

'04		'03	
Adjusted R <sup>2</sup>	.507	Adjusted R <sup>2</sup>	.505
F Stat.	24.65	F Stat.	24.457
F Stat. Sig.	.000	F Stat. Sig.	.000
Unstnrd Beta	-.978	Unstnrd Beta	-1.013
Stnrd Beta	-.727	Stnrd Beta	-.726
t	-4.968	t	-4.945
Stat. Sig.	.000	Stat. Sig.	.000
'02		'01	
Adjusted R <sup>2</sup>	.537	Adjusted R <sup>2</sup>	.606
F Stat.	26.555	F Stat.	34.811
F Stat. Sig.	.000	F Stat. Sig.	.000
Unstnrd Beta	-1.122	Unstnrd Beta	-1.216
Stnrd Beta	-.747	Stnrd Beta	-7.90
t	-5.153	t	-5.900
Stat. Sig.	.000	Stat. Sig.	.000
'00			
Adjusted R <sup>2</sup>	.691		
F Stat.	50.249		
F Stat. Sig.	.000		
Unstnrd Beta	-1.104		
Stnrd Beta	-.840		
t	-7.089		
Stat. Sig.	.000		

Table 4

Regression  
Fertility

'04		'03	
Adjusted R <sup>2</sup>	.549	Adjusted R <sup>2</sup>	.593
F Stat.	30.261	F Stat.	34.473
F Stat. Sig.	.000	F Stat. Sig.	.000
Unstnrd Beta	.093	Unstnrd Beta	.095
Stnrd Beta	.754	Stnrd Beta	.781
t	5.501	t	5.871
Stat. Sig.	.000	Stat. Sig.	.000
'02		'01	
Adjusted R <sup>2</sup>	.495	Adjusted R <sup>2</sup>	.535
F Stat.	22.591	F Stat.	26.334
F Stat. Sig.	.000	F Stat. Sig.	.000
Unstnrd Beta	.086	Unstnrd Beta	.091
Stnrd Beta	.720	Stnrd Beta	.746
t	4.753	t	5.12
Stat. Sig.	.000	Stat. Sig.	.000
'00			
Adjusted R <sup>2</sup>	.453		
F Stat.	13.192		
F Stat. Sig.	.000		
Unstnrd Beta	.077		
Stnrd Beta	.691		
t	4.381		
Stat. Sig.	.000		