The Relationship between Effective Governance and the Informal Economy

Barry A. Friedman
Professor
Organizational Behavior and Human Resource Management
State University of New York at Oswego
247 Rich Hall
Oswego, New York 13126, USA
and
Suleyman Sah University
Istanbul, Turkey

Abstract

The informal economy constitutes a large portion of worldwide gross domestic product, but little empirical research exists that addresses this phenomena. This study explored the relationship between six dimensions of effective governance and the size of the informal economy across 149 countries over six years. The size of national informal economies (Schneider, Buehn & Montenegro, 2010) was regressed on six World Governance Indicators (World Bank, 2011). The perception of a country's population that the current regime is not stable, that regulatory quality is low, and that corruption is not controlled was associated with larger national informal economies. Conversely, higher perceived levels of political stability, regulatory quality, and corruption control were associated with smaller informal economies. Employment rate, manufacturing sector size, net immigration rate, and gross domestic product were held constant. These relationships were consistent from 2002-2007. Implications of these findings are discussed.

Keywords: Informal economy, governance, corruption

Introduction

The literature contains many references to the informal economy: black, hidden, underground, cash, and shadow economy (Schneider, Buehn & Montenegro, 2010; World Bank, 2005; Hart, 2005, 1990). The "informal economy" refers to market activities that are concealed from public authorities for such reasons as tax evasion, avoidance of labor regulations (e.g., minimum wages and safety standards), and to escape record keeping and other administrative requirements (Schneider et al, 2010; Smith, 1994). Feige (2005) and Vuletin (2008, 162) provide more insight into the informal economy by arguing that the informal economy "comprises those economic activities that circumvent the costs and are excluded from the benefits and rights incorporated in the laws and administrative rules covering property relationships, commercial licensing, labor contracts, torts, financial credit and social systems". Macias and Cazzavillan (2010, 346) defines the informal economy simply as "all the income and employment generating activities that are not regulated by the formal economic framework of a specific country."

A consensus is rapidly building that informal economies are prevalent in developed, developing, and transitional countries, and expanding worldwide (Schneider, 2005; Schneider & Enste, 2000; Feige, 1990). Kus (2010) notes that comparable international estimates provided by such sources as the World Bank (2004) and the OECD (2009)estimate that one-third of the developing world's GDP resides in the informal economy. Schneider et al (2010) reviewed the size of informal economies in 162 countries from 1999-2007, and observed that the informal economy is remarkably large in the majority of those countries (average of 33% of Gross National Product). These authors concluded that informal economies exist in developing, transitional, and developed countries, and that regional differences exist (e.g., compared to OECD countries, a greater percentage of Sub-Saharan Africa's GDP resides in the informal economy).

As informal economies constitute large portions of nations' GDP, more research is needed to identify variables associated with the informal economy. The aim of this study is to empirically explore the governance and informal economy nexus.

That is, what aspects of effective governance are related to the size of a country's informal economy? While past research addressed one or two governance dimensions (e.g., Sassen, 2000), this study is the first to explore the relationship between a comprehensive account of governance (World Governance Indicator) and the size of the informal economy across a large number of countries, while controlling for several variables known to be correlated with informal economics. I first review the literature related to governance, followed by a discussion of the informal economy. Hypotheses are then tested, results reported, and finally the implications of the findings are discussed.

Governance

Kaufmann, Kraay, and Mastruzzi (2008) define governance as traditions and institutions by which authority in a country is exercised, the ability of government to formulate and administer policy, and the respect the government receives from its citizens. Effective governance spurs economic growth and income (Kaufman and Kraay, 2002; Huynh and Jacho-Chaez, 2009).The relationship between effective governance and important outcomes are complex. For example, Friedman (2011) found a significant negative relationship between governance and entrepreneurship on a national level. However, this research did not differentiate between the formal and informal economy. The degree that a country imposes regulations on the business (and other) activities of its population is one dimension of governance. Kus (2010) tested the conventional wisdom that deregulation should increase activity in the formal economy and decrease activity in the informal economy as individuals are burdened less by regulation (Hossein, Kirkpatrick, and Parker. 2007). Instead, this author found a positive relationship between the degree of regulation and the size of the informal economy, but only for countries with effective rule enforcement. While not tested empirically, Looney (2006) argued that the degree of conflict in Iraq was related to an increase in the country's informal economy, and that improved governance in the form of increased rule of law and implementation of anti-corruption measures would decrease the informal economy. Regulation, rule of law, and control of corruption are aspects of effective governance, but governance is multidimensional, and its relationship to the informal economy needs further study.

The World Bank provides among the most comprehensive definitions (World Governance Indicators, 2011; Kelly, Bosma and Amorós, 2011; Kaufmann, Kraay and Mastruzzi, 2008). The World Bank Project identified the following six World Governance Indicators:

1. *Voice and Accountability (VA)*: perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association and a free media.
2. *Political Stability and Absence of Violence (PS)*: perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically motivated violence or terrorism.
3. *Government Effectiveness(GE):* perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, and the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
4. *Regulatory Quality (RQ)*: perceptions of the ability of the government to formulate and implement sound policies and regulations that permits and promotes private sector development.
5. *Rule of Law (RL):* perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular, the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
6. *Control of Corruption (CC):* perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Summarizing information from 30 existing data sources, the World Bank has maintained data on the previously defined six dimensions of governance since 1996. These sources include the views and experiences of citizens (e.g., Gallup World Poll), commercial business information providers (e.g., Economist Intelligence Unit and Global Insight), entrepreneurs, and experts in the public (e.g., World Bank and regional development banks), private, and NGO sectors from around the world (e.g., Global Integrity and Freedom House), on the quality of various aspects of governance (World Governance Indicators, 2011).

The WGI research dataset is jointly produced by the Brookings Institution, the World Bank Development Research Group, and the World Bank Institute. The six WGI measures are an aggregate (average) of the underlying data sources. The individual items are rescaled from 0 to 1 (higher numbers indicate better governance). A weighted average of the data from each source for each country is then computed. The resultant estimate of each governance indictor is a weighted average of the data from each source. The weights reflect the pattern of correlation among data sources; that is, larger weights are assigned to sources that are strongly correlated. The composite measures of governance are in units of a standard normal distribution, with mean zero, standard deviation of one, and a range from -2.5 to +2.5, with higher scores assigned to better governance (World Governance Indicators, 2011, Kaufmann et al, 2008).

The Informal Economy

As previously defined, informal economies constitute business activities not part of the formal economy: that is, activities not controlled, reviewed, taxed, regulated, or otherwise subject to procedural requirements set forth by prevailing authorities. Research has demonstrated the relationship between several economic and demographical variables and the informal economy: employment rate, proportion of economy attributable to the manufacturing sector, net immigration, and GDP growth. *Employment rate* is the "proportion of the population (aged 15 or older) that supplies labor for the production of goods" (World Bank, 2011). The employment rate is an indicator of economic development in that informal economies expand in the absence of economic growth and as employment opportunities diminish (Kus, 2010). Sassen (2002) argues that informal economies flourish with the fall of the *manufacturing sector*. Kus (2010) points out that one would expect less informal economic activity in countries with larger manufacturing sectors. *Net immigration* is the "The number of immigrants minus the number of emigrants over a period, divided by the person-years lived by the population of the receiving country over that period. It is expressed as net number of migrants per 1,000 population," and is provided by the United Nations Population Division (United Nations, 2010). Informal economies also are associated with large immigrant populations, as vulnerable populations such as immigrants work for lower wages, and taxes and other legal requirements are avoided (Kus, 2010; Raijman, 2001; Raijman & Tienda, 2000; Sassen, 1989). Gaughan and Ferman (1987) argue that the informal economy provides a nexus for immigrant groups that are disproportionally excluded from job opportunities, serving as the social glue that binds immigrants together. The United Nations collects the data in five year interval, and the 2000-2005 data was used in the present study. As a result, the values across the years studied presently do not vary. *GDP growth* is the annual percentage at market prices based on constant currency, and is the sum of gross value added by all producers, plus product taxes and minus subsidies not included (World Bank, 2011; Kus, 2010).

Alternative methods of estimating the size of the informal economy exist (Schneider and Enste, 2000; OECD Handbook, 2002). Some methods ask survey respondents to estimate the magnitude of the informal economy. Other methods estimate the size of the informal economy using an indirect approach that measure economic or labor discrepancies (Vuletin, 2008). For example, the informal economy may be measured using the discrepancy between national income and national expenditures, or the difference between the official and the actual labor force.

Another approach uses models that link unobserved (latent) variables to observed causes and indicators of the informal economy. Macias and Cazzavillan (2010) argue that the Multiple Indicators Multiple Causes (MIMIC) (Schneider (2002) model is the preferred model to measure the informal economy used in recent research, and the model constitutes the most comprehensive set of international data using a unified method that is readily available (Kus, 2010, 497).

In this paper, the informal economy is measured using the MIMIC model, which uses structural equation modelling (SEM) to confirm and estimate the hypothesized relationships between the informal economy (the latent variable) and its causes and indicators. As described Macias and Cazzavillan (2010), SEM captures the relationships between latent unobserved variables and observed indicators and causes. Frey and Weck-Hannemann (1984), Loayza (1997) and Vuletin (2008) were among the first studies that estimated the informal economy using the MIMIC model. On the Latin American scenario, developed the most representative studies using this method. Macias and Cazzavillan (2010) concluded that the MIMIC model is favored because it relied on more variables in addition to monetary variables (reduces bias caused by differential inflation rates across countries), and treated the concept as a latent variable with a more comprehensive list of explanatory variables.

As summarized by Macias and Cazzavillan (2010, 348-350), "the MIMIC has two main components, a measurement equation, and a structural equation. The measurement equation corresponds to a set of observable indicators:

$Y1 = \lambda 11\eta + u1$, $Y2 = \lambda 21\eta + u2$, $Yq = \lambda q1\eta + uq$(1)

where, $Y1$, $Y2$, and Yq represent the possible observable indicators of the informal economy (i.e. real GDP, currency held by the public or labor force participation ratio) and η corresponds to the latent variable (in our case, the informal economy). Finally, u is just a random error term and λ stands for the structural parameters of the measurement model. Next, we have the structural equation component:

$\eta = \gamma 11x1 + \gamma 12x2 + \gamma 13x3 + \ldots + \gamma 1pxp + v$ (2)

with $x1$, $x2$, $x3$ and xp representing a set of observable causes, usually approximated by the tax burden (total tax revenue over GDP), unemployment, corruption, real salaries, inflation, confidence indexes, and so on. $\gamma 11$, $\gamma 12$, $\gamma 13$, and $\gamma 1p$ are the structural parameters of the model and v is the disturbance term. As in equation (1), in our model η corresponds to the latent variable (informal economy). Rewriting equations (1) and (2) we have:

$Y = \lambda\eta + u$ (3), and $\eta = \gamma' x + v$ (4)

where we are assuming independence between the errors and the disturbances, i.e. $E(uv') = 0'$, and defining $E(v2) = \sigma 2$ and $E(uu') = \Theta 2$, with Θ being the diagonal covariance matrix of the measurement errors. So, in order to solve our model, we can substitute (4) into (3) to obtain a function of observable variables, that is:
$y = \lambda(\gamma' x + v) + u$(5)

Furthermore, defining $\Pi = \gamma\lambda'$ and $w = \lambda v + u$ we can rewrite (5) so that we can get the reduced form of our MIMIC model:

$y = \Pi' x + w$ (6)"

The informal economy values range from +1 or -1.Schneider et al (2010) published estimates of the informal economy up to 2007. Complete data was obtained for 149 countries from 2002-2007. For the purposes of the present study, the informal economy dependent variable values were calculated using the formulas above (Schneider et al., 2010). For a more comprehensive account of the MIMIC model, the reader is referred to Schneider et al.(2010, 9-15).

Hypotheses

This study tests the hypothesis that the world governance indicators are negatively associated with the percentage of national GDP attributable to the informal economy. This means that as governance becomes more effective, then the size of the informal economy decreases.

Hypothesis: Voice and accountability, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption are negatively related to informal economy size.

It is hypothesized that each element of governance, as defined previously, is inversely related to the size of a nation's informal economy. Individuals' decisions whether to participate in the formal economy (e.g., report and pay taxes, comply with business, financial and workplace regulations) is, in part, related to their perception that a government infrastructure that is competent, fair, rationale, and enforced exists. A foundation for such an infrastructure is political stability; that is, a system of governance that exists long enough to develop systems that, in time, are perceived as competent by citizens. Portes and Centeno (2006) and Sassen (2000) argue that a nation's enforcement of rules that govern business and financial activities are related to the informal economy, and that enforcement may be more important than regulatory quality. Rule of law and regulatory quality may increase with effective governance, as political stability allows time for business systems, standards, and enforcement mechanisms to be established. Voice and accountability is likely to strengthen positive governance perceptions, assuming individuals act rationally and in their best interests. Voice and accountability in the way one is governed may result in business friendly policies and practices that expand the formal economy. Citizens' perceptions of that the government can be trusted to exercise power for the public good as opposed to the good of the elite only is hypothesized to be related to greater business activity in the formal economy and less in the informal economy. Citizens' perceptions of the general governance (e.g., public services, civil service, policy implementation, and commitment) are likely a lagging measure of several efforts to improve governance.

In the end, individuals are faced with a decision regarding the extent they will participate in the formal versus informal economy, and will make such decisions, in large part, on their assessment of the government quality and effectiveness. Relative to nations where citizens assess their governments as effective with favorable business environments, citizens in nations that have less confidence in their governments will gravitate to the informal economy. Citizens may choose to avoid interacting with the government (e.g., paying taxes, complying with regulations) if they expect to be treated unfairly or in a manner that benefits the elite at the expense of the majority.

It is hypothesized that government effectiveness is inversely related to informal economy size, after the influence of the four variables reviewed above are controlled: employment rate, the percent of the economy represented by the manufacturing sector, net immigration rate, and Gross Domestic Product growth.

Method

As mentioned previously, the World Governance Indicators, as measured by the World Bank serve as independent variables. The dependent variable, the size of the informal economy, was estimated using the MIMIC model (Schneider et al, 2008). Means, standard deviation, and univariate correlations among all variables were computed. Informal economy was regressed on the governance indicators with the four control variables described above. A pooled regression analysis across 2002-2007 was conducted. Separate regression analyses for each year may be obtained from the author. The control variables were first entered into the regression, followed by the governance indicators. The incremental variance accounted for in nations' informal economy size above that explained by the control variable was then assessed (i.e., R^2 change). Multicollinearity was assessed and addressed as needed.

Results

Table 1 contains the means, standard deviation, and correlations among the dependent, independent, and control variables. The average size of the informal economy across all the countries in the analysis as a percent of GDP was 32.36%.For example, Switzerland and the United States' informal economies were less than 9% in 2007. In contrast, the informal economies of Zimbabwe and Georgia exceeded 60%. The size of the informal economy remained somewhat stable over the six years studied. On average, 64.29% of the population was employed across all years in the analysis, with 30.27% in the manufacturing sector. The net immigration rate was .44 for each year, as the same five year average (2000-2005) provided by the United Nations Population Division was used in each year.

Table 1: Means, Standard Deviations and Correlations for Pooled 2002-2007 Dependent, Control, and Independent Variables

	Mean	s.d.	IE	ER	MS	NI	GG	VA	PS	GE	RQ	RL	CC
Informal Economy (IE)	32.36	12.55	1.00										
Employment Rate (ER)	64.29	9.93	.30**	1.00									
Manufacturing Sector (MS)	30.27	13.06	.01	-.10	1.00								
Net Immigration (NI)	.44	7.73	-.45**	.10	.23**	1.00							
GDP Growth (GG)	5.04	3.33	.09	.09	.34**	.19*	1.00						
Voice and Accountability (VA)	-.03	1.00	-.51**	-.18*	-.30**	.08	-.33**	1.00					
Political Stability (PS)	-.09	.97	-.55**	-.10	-.05	.28**	-.06	.67**	1.00				
Government Effectiveness (GE)	-.03	.99	-.72**	-.21**	-.09	.30**	-.18*	.79**	.74**	1.00			
Regulatory Quality (RQ)	-.03	.99	-.66**	-.19*	-.09	.29**	-.17*	.82**	.72**	.95**	1.00		
Rule of Law (RL)	-.05	.99	-.73**	-.18*	-.15	.33**	-.21**	.82**	.81**	.94**	.91**	1.00	
Control of Corruption (CC)	-.03	.99	-.71**	-.10*	-.15	.35**	-.23**	.78**	.77**	.95**	.90**	.95**	1.00

*$p \leq .05$, **$p \leq .01$, ***$p \leq .001$

The average annual GDP growth was 5.04%. While the control variable averages were stable from 2002-2007, there was considerable variance among the countries within each year. Contrary to previous research, nations' employment rate was positively related to the size of the informal economy, and net immigration was negatively related to the informal economy (Gaughan and Ferman, 1987. The governance indicators were highly inter-correlated. As hypothesized, each governance indicator was significantly and negatively related to the informal economy.

Table 2 contains the results of a pooled regression analyses across the six years studied. The high correlation among the world governance indicators presented multicollinearity issues for the initial separate year and pooled regression analyses. Log transformations were employed for the independent variables and the dependent variable, which reduced the multicollinearity to acceptable levels. Variables were excluded in the few instances where multicollinearity issues persisted (i.e., Variance Inflation Factors were greater than 4.00). Employment rate had a consistent positive but low relationship with the informal economy. Consistent with previous research (Raijman, 2001; Raijman & Tienda, 2000; Sassen, 1989), net immigration was negatively and significantly related to the informal economy. The amount of variance accounted for was moderate for the control variables (R^2= .23, $p\leq$ .01 in the pooled regression analysis).

Table 2: Informal Economy regressed on Governance Indicators and Control Variables: Pooled 2002-2007

Control Variables[1]	β	t	Variance Inflation Factor
Employment Rate	.57	9.69***	1.48
Manufacturing Share	.11	2.14*	1.19
Net Immigration	-.25	-3.41***	2.32
GDP Economic Growth	-.27	-4.12***	1.86
Governance Indicators[2]			
Voice and Accountability	.13	1.37	3.76
Political Stability	-.37	-6.46***	1.45
Government Effectiveness	+	+	
Regulatory Quality	-.26	-3.28**	2.75
Rule of Law	-.08	-.86	3.72
Control of Corruption	-.54	-6.02***	3.51

[1] R^2 = .23, $F_{(4, 47)}$ = 3.68,$p\leq$ .05
[2] R^2 = .88, $F_{(5, 42)}$ = 57.36,$p \leq$ .001
*$p\leq$ .05, **$p\leq$ .01, ***$p\leq$ .001
+ The Government Effectiveness Indicator was dropped from the regression analysis due to high multicollinearity (VIF = 6.37).

The governance indicators significantly added to the variance explained in the pooled regression (R^2change= $F_{(5, 52)}$ = 57.36, $p\leq$ .001), as well as each year from 2002 to 2007.The results supported the hypotheses that governance indicators are negatively related to the size of the informal economy. Referring to the pooled regression analysis, political stability, regulatory quality, and the control of corruption had significant standardized beta weights. It is worth noting that these findings were consistent over the years studied. Contrary to expectations, voice and accountability, and rule of law were not significantly weighted in the regression analysis (although their univariate relationships with the informal economy were significant). Government Effectiveness did not consistently predict the size of the informal economy, and was dropped from the pooled multiple regression analysis due to its high multicollinearity with the other independent variables.

Discussion

This study explored the relationship between governance and the size of the informal economy across 149 countries over six years. The findings suggest that the perception of a country's population that the prevailing political regime is stable (political stability), that their government can competently formulate and implement sound policies and regulations that permit and promote private sector development (regulatory quality), and that corruption is controlled is associated with smaller informal economies. These relationships held across the years studied (2002-2007). Conversely, lower political stability, lower regulatory quality, and less control of corruption were associated with larger informal economies.

These findings have implications for managing the transition of individuals from the informal into the formal economy. The data used presently do not indicate the nature of the corruption that needs to be controlled, but previous literature suggests areas for future research. For example, Becker (2004) suggested that the informal economy may stem from excessive costs and government regulation associated with areas such as business start-up, and the granting of business permits and land titles.

Of course, government corruption has wider implications, including decreased efficiency of government social expenditures that deprive the neediest elements of society income generating opportunities, as well as an increased income gap between the rich and poor (Timofeyev, 2011). Arndt & Oman (2006) argued that corruption decreased foreign investments. Reducing corruption is challenging, as evidenced by increased levels of corruption reported by Transparency International (2010). Etzioni (2011) argues that past efforts to control corruption were ineffective because they tried to change local cultures instead of building on existing culture and used vague goals. The best efforts to curb corruption may be in countries that are economically and politically developed (Etzioni, 2011), which attests to the high interdependencies between economic performance and effective governance. Future research should build on the present findings by exploring how corruption, regulate quality, and political stability are addressed, and the affect these change strategies have on the informal economy.

Political stability may be a prerequisite for building the formal economy. To be drawn from the informal to the formal economy, entrepreneurs must have confidence that the regulations by which business is conducted have some reasonable degree of stability, and that contracts signed today will have some meaning over time. Nations should make efforts to formulate regulations that encourage individuals to move into the formal economy. Examples of such efforts that promote private sector development include availability of capital, favorable interest rates, and attraction of foreign investments.

The present study has the following limitations. Other control variables such as GDP purchasing power parity (ppp) can be included in the analysis. Like Kus (2010), the GDP ppp resulted in excessive multicollinearity in the present research, but other control variables may be considered, such as the Corruption Perception Index (Transparency International, 2010). Future research should replicate the study with more recent data as it becomes available.

In summary, the three variables that were most highly related to the size of a nation's informal economies were control of corruption, regulatory quality, and political stability. Countries should place higher priority on efforts that move countries tow toward improving and strengthening these three means of creating governance that is more effective.

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