STATE AND ECONOMIC INFORMALITY IN A COMPARATIVE PERSPECTIVE

Abstract

This article undertakes an analysis of internationally comparable data to examine the relationship between state regulation and the informal economy at the macro level across a broad set of countries. The findings shed light on the question of why economic informality is more prevalent in some nations than others. The author shows that the regulatory environments within which economic activities operate vary across countries in terms of the degree of state's regulation of economic activities (low vs. high), and the quality of legal enforcement (effective vs. ineffective). The reason why some countries have less informality in their economies than others has much to do with the prevailing regulatory environment. It is in regulatory environments combining a low regulatory load with effective law enforcement institutions where we find the size of the informal economy to be smallest. Conversely, the highest levels of informality are found in countries that have a high degree of regulation in the economy coupled with ineffective enforcement. The results also provide insight as to why decreasing the degree of regulation cannot necessarily be expected to lead to formalization in the economy as the neoliberal orthodoxy has prescribed.

Key words: informal economy, regulation, deregulation, state, cross-national, neoliberal

I. INTRODUCTION

Economic modernization in the 20th century involved, as one of its core elements, formalization—the control of private economic activity through rules and regulations administered by national bureaucracies.[1] The prominence of economic practices that are outside of or hidden from state regulation in today's global economy presents an "antithetical" trend (Hart 2005). A phenomenon that was viewed in the early 1970s simply as a vestige of pre-capitalism and associated with the subsistence activities of the poor in underdeveloped nations, informality is now recognized as an integral element of contemporary market economies. It constitutes a common way of "doing business" not only in tiny enterprises, but also in many established companies employing thousands of people. According to an internationally comparable estimate provided by Schneider (2005), the aggregate value of informal economic activities amount to close to 40% of the official GNP in the developing countries, and 16% of the GDP in OECD countries.

Figure 1 here

Why do informal economic practices develop? Why are they more prevalent in some nations than others? Under what institutional conditions could we expect the economy's informality to decrease or increase? These are pressing questions. Their careful consideration is important not only because the informal economy involves substantial implications for a wide range of issues concerning economic policy and development, but also because it remains critical to our understandings of the workings of contemporary capitalism, and the limits and nature of state control.

[1] Encapsulated in the phrase "capitalism and bureaucracy have found each other and belong intimately together" (1968: 1395), it was the broad thrust of Weber's life's work that modern capitalism in order to function depended on clear, predictable and enforceable rules that only a bureaucratic state could provide.

This article attempts to contribute to a body of literature that has sought to specify the factors that play a role in the development of the informal economy. By undertaking an analysis of internationally comparable data, it examines the relationship between state regulation and the informal economy at the macro level across a broad set of countries.

Previous sociological analyses emphasized the role of various economic factors (e.g., underdevelopment; high unemployment; the decline of the manufacturing sector; competition resulting from economic openness) as well as non-economic factors (e.g., family and community needs; immigration) in the development of the informal economy. Systematic analyses of the role of the state in the informalization of economic processes have been relatively more limited. Moreover, most analyses of the state-informal economy nexus have focused primarily on one particular country. Even though most tend to then extrapolate to all similar countries, with "similar" defined at times as being in the same geographical region, or development level, their temporal and spatial limitations have hindered their ability to establish a general theoretical linkage between variations in informality outcomes on the one hand, and the structural, regulatory characteristics of states, on the other (Tabak 2000). This relative lack of systematic comparative analysis of larger institutional structures' effect on economic informalization—vis-à-vis the abundance of self-contained ethnographies on the subject—is why, as Sassen (2000) argues, informality is often understood simply as a form of urban marginality rather than as a significant aspect of the relationship between the state and the economy. In specifying and testing the often-insinuated relationship between the state and the informal economy across a broad set of countries this article represents a step forward.

I argue here that the development of the informal economy remains inherently linked to the state's regulatory intervention in the economy. All states intervene in the process and outcome of economic activities on the basis of a set of enforceable rules (Castells and Portes

1989). These rules lay out who can participate in economic life, what kinds of economic activities can be undertaken, and how. They create a structured environment within which economic actors operate.

Using internationally comparable data I show here that the regulatory environments within which economic activities operate vary across nations in terms of the *degree of state regulation* (high versus low), and the *quality of law enforcement* (effective versus ineffective) in the economic sphere. The reason why some nations have less informality in their economies has much to do with their prevailing regulatory environment. Speaking in average terms, the size of the informal economy tends to be largest in nations that have a high degree of regulation in the economy coupled with ineffective enforcement, and lowest in nations where regulatory load is limited and enforcement is effective. The size of the informal economy has a more significant association with the quality of enforcement than with the degree of regulation. Nations that have a high degree of regulation in the economy combined with effective enforcement seems to have less informality in their economies than nations where the degree of regulation is low but enforcement institutions remain ineffective.

The findings also suggest that contrary to what the neoliberal orthodoxy has prescribed over the past few decades, decreasing the degree of state regulation of the economy—that is, making economic actors subject to fewer rules—will not necessarily formalize the economy. The degree of state regulation does not have a significant association with the size of the informal economy except in nations that have effective legal enforcement. In other words, in nations that lack the institutions and tools necessary for effective law enforcement—which is the case with many of the world's developing nations—deregulatory policies are not likely to have a formalizing effect. After a few decades during which developing nations have been constantly told that they should deregulate in order to formalize their economies, these findings present a cautionary tale.

2. BACKGROUND AND THEORY

The informal economy has been studied extensively over the past few decades. Before exploring the state regulation-informal economy nexus, it might be helpful to review this existing literature. I should note, however, that what I provide here is a highly sterilized outline of the literature, focusing on certain aspects of the phenomenon, and leaving others out. More specifically, I zero in on the causal accounts of the development of the informal economy, and leave out, for the most part, normative discussions regarding its nature. I also leave out from my review the work on the informal economy in socialist nations (a.k.a. "the second economy"). These omissions inevitably lead to a rather simplified account of the literature—a shortcoming for which I hope to compensate by gaining in analytical clarity.

2.1. The Early Literature: Economic Informality as a Matter of Underdevelopment?

The first wave of research on what would eventually be called the "informal economy" emerged in the 1950s and 1960s as part of a series of studies in Africa which explored the conditions of low growth, unemployment and poverty. One of the major results of these early investigations was the characterization of African economies as comprising a dual structure. On the one hand, there was the "modern" economy involving large-scale enterprises combining skilled labor and technology. On the other hand, there was a prominent "traditional"[2] economy that consisted of agricultural day laborers, urban street vendors, domestic workers, and small producers of basic manufactured goods who typically relied on labor-intensive technology and indigenous resources for their operation. This so-called "traditional economy" was operated by the poor who remained at the margins of the official economy, and was neither regulated, nor supported by the state.

[2] The initial use of the term "traditional economy" in the modernization literature was in reference to the agricultural sector. It was later extended to include the self-employed and petty producers.

The early literature saw this "traditional" economy as a symptom of a nation's backwardness—as marginal activities not linked to the formal sector or modern capitalist development (Moser 1994). It was assumed that when growth rates increased, a sufficient industrial base developed, and modern jobs got created, the traditional economy would disappear, and be replaced by modern capitalist institutions.[3] By the late 1960s, however, as Chen et al. (2004) elaborate, the optimism about the prospects for economic growth in developing countries began to fade away. The rates of population growth and urbanization had far exceeded that of industrialization under the prevailing conditions of capitalist economic development (Moser 1994:13), and the resulting unemployment and poverty constituted a severe challenge for which mainstream development recipes did not seem to work. The activities classified as belonging to the traditional economy had not disappeared as expected, but had indeed multiplied. These developments prompted a re-assessment on the part of international organizations such as the ILO and the World Bank of the conditions of growth, poverty and unemployment in less developed countries. It is in this context, out of a need to better understand the causes, dynamics and outcomes of the so-called "traditional" realm of economy that scholars and policymakers began to talk about the "informality" of economic life in the Third World.

The notion of "informality" pertaining to economic activities was first used in ILO's (1972) report on incomes and equality in Kenya, and Keith Hart's (1973) work on urban employment in Ghana. Both Hart and the ILO maintained the dualistic standpoint found in the earlier development literature in their portrayal of Third World economies as consisting of two distinct sectors, a formal and an informal one—the formal economy being the sphere of large,

[3] Both the Marxist and neo-classical theories of development agreed on this view. For a short but very nice discussion about this, see Portes and Sassen's 1987 AJS article "Making It Underground."

regulated enterprises with skilled labor, and the informal economy being the sphere of the self-employed and of small-scale enterprises. They also maintained that this dualistic structure was largely linked to the conditions of underdevelopment. In a marked departure from the earlier development studies that had portrayed the so-called traditional sector as non-productive, however, they argued that the activities that make up the informal economy could play a significant role in generating growth and bringing prosperity to large masses in underdeveloped nations.

In short, the period from the 1950s through the 1970s, while it witnessed some disagreement among scholars regarding the role the informal economy could play in the development process, was generally characterized by a consensus that the informal economy was an underdevelopment-related phenomenon, involved the survival activities of the unemployed and the poor, and would become extinct once capitalist economic growth has taken off.

2.2 The Study of the Informal Economy in Advanced Nations

Further research on the subject in the late 1970s and 1980s cast doubt on the view that the informal economy was an outcome of underdevelopment, and not compatible with modern capitalism. First of all, the growth experience of many developing economies has demonstrated that informal activities can continue to exist and sustain themselves during times of high growth and employment in the formal economy (Heinz and Pollin 2003). More importantly, a series of ethnographic research have shown that informal activities exist, albeit to a lesser extent, in the highly advanced circumstances of the US and Europe as well (Stack 1974; Lowenthal 1975; Dow 1977; Henry 1978; Gershuny 1983; Pahl 1984; Gaughan and Ferman 1987; Portes and Sassen 1987; Castells and Portes 1989; Fernandez-Kelly 1989; Stepcik 1989). In an influential 1987 article Portes and Sassen thus argued: “This neat division between Third

World countries in which the informal sector is large, and advanced countries from which it has nearly disappeared is wrong. There are indeed major differences between the levels of development, but they do not include the absence of an informal economy in the developed countries (1987:41)."

The study of the informal economy in advanced nations took place around two main research programs.[4] One line of research, relying primarily on ethnographic methods, focused on the income-generating activities of the urban poor (Ferman and Ferman 1973; Stack 1974; Lowenthal 1975; Dow 1977; Henry 1978; Gershuny 1983; Pahl 1984). Many of these studies portrayed informal activities as a fundamental part of human life—"a manifestation of disposition toward reciprocity and cooperation rather than pursuit of financial gain" (Gaughan and Ferman 1987:25). According to these studies, the informal economy allowed participants to marshal resources that served as an economic safety net. It provided "a nexus of social glue" in a sense that made the maintenance of social life possible in a modern world dominated by the market logic (Gaughan and Ferman 1987:25).

A major portion of ethnographic research on the informal economy conducted in the US has focused on the participation of immigrants in the informal economy (Portes, Castells and Benton 1989; Portes and Sassen 1987; Sassen 1988, 1989; Stepcik 1989; Bailey and Waldinger 1991; Zhou 1992; Portes and Stepick 1993). Some scholars noted immigrants' lack of legal work permits as a factor that makes them vulnerable to finding themselves in informal work arrangements with less pay and no security benefits (Raijman 2001). Others have argued that the informal economy provides employment opportunities for immigrants who often face difficulties getting access to regular jobs, hence representing an important albeit extra-legal

[4]As noted before, the list of theories discussed here is by no means exhaustive. The two broad categories listed here may not cover the entirety of the research on the subject.

entry into the urban labor market. The portrayal of immigration as a substantial cause of informality in advanced nations was challenged on several fronts, however. Sassen argued that, "insofar as they tend to form communities, immigrants may be in a favorable position to seize the opportunities represented by informalization but they are not responsible for creating the opportunities" (1997:3). A number of scholars have shown, also, that informal economic activities are present in communities with low numbers of immigrants as well (Sable 1982; Benton 1986).

Dissatisfied with early studies that focused exclusively on Third World contexts, as well as with the limitations of localized work on poor and immigrant communities in uncovering the larger structures that are at play in the growth of the informal economy, another group of scholars began to focus on the linkage between informality and the structures of capitalism (Portes and Sassen 1987; Portes, Castells and Benton 1989; Sassen 1994, 2002). These scholars rejected the prevailing notion of the informal economy as incompatible with modern capitalism. They argued that by way of providing firms with an opportunity to attain flexible production, profit generation and cost reduction, the informal economy constituted "an integral feature of advanced capitalism rather than a marginal appendix to it" (Castells and Portes 1989:12). According to this view, informalization would be more likely in the context of falling profits brought about by increasing labor costs and competition from cheaper foreign goods (Portes and Sassen 1987:54).

In her later work, Sassen further elaborated how dynamics of contemporary capitalism fostered informalization. She argued that the decline of the manufacturing-dominated industrial complex of the postwar era and the rise of a new service-dominated economic complex remained the critical factor in the rise of informalization. This shift, according to Sassen, contributed to "the demise of the broader institutional arrangements that defined the

employment relation in the postwar period" (2002:5). The service industries that became the driving economic force in the 1980s remained characterized, she noted, by "greater earnings and occupational dispersion, weak unions, and mostly unsheltered jobs in the lower-paying echelons" (2002:5).

2.3 The State–Informal Economy Nexus

The relationship of the state to economic informalization had remained a largely neglected area of inquiry until the end of the 1980s. Since then, however, a wave of sociological studies has begun to examine this relationship from a variety of angles. In their study of Hispanic women home-workers in the garment and electronics industries in California and Florida, Fernandez-Kelly and Garcia (1989), for instance, showed how informalization might take place under the auspices of the state which, through the actions of local and federal agencies, may tolerate, or even stimulate informal economies in order to resolve potential conflict or promote social patronage. Grossman (1989) in his analysis of incomes and outlays of Soviet urban population provided parallel findings. He showed how the tolerant political climate that manifested itself in the halfhearted enforcement of the law in the later years of Brezhnev's rule has led to a burgeoning informal (second) economy. Standing's (1989) analysis displayed how the reversal of the state's full employment policy towards a supply side strategy under Thatcher administration resulted in the disenfranchisement and unemployment of a large section of the traditional working class and indirectly contributed to the informalization of the British labor market. Cross (1993) in his study of street vending in Mexico not only showed how the state might allow or fail to control informal economic activity, but also shed light on the political capacity of informal economic actors themselves. His analysis uncovered the conditions under which informal actors—in this case, street vendors—are able to thwart state attempts to limit or eliminate them. In a similar vein, Tripp's

(1997) research in Tanzania showed how urban dwellers' refusal to comply with regulations that interfered with their survival was instrumental in changing the state's policies in the 1980s and 1990s. And finally, Jose Itzigsohn (2000) examined the role of state policies in the growth and organization of informal labor markets in Costa Rica and the Dominican Republic.

These studies have advanced our knowledge of the state–informal economy relationship in important ways. Nevertheless, most of these studies focused primarily on one or two particular contexts. Although they provided rich, in-depth accounts of the ways in which the states shape the growth of the informal economy, they have not formulated a generalizable theoretical linkage between variations in informality outcomes on the one hand, and the structural, regulatory characteristics of states on the other.

At the opposite end one finds economic analyses which do provide a general theory of the state–informal economy relationship. Nevertheless, the general theory in question hardly goes beyond acknowledging the utilitarian calculations of individuals in the emergence of informal practices.

In economic accounts, formality and informality are portrayed as decisions that economic actors make after evaluating the relative costs and benefits of being in the formal regulatory system. It is argued that it constitutes a "rational" action for economic actors to resort to informality in a context where the state imposes high costs to entering and remaining in the formal realm through license fees, registration requirements, taxes, red tape, labor, environment and various other regulations. In other words, economic accounts often describe informalization as a rational response to the "big state."

In his widely acclaimed book *The Other Path* (1989), whereby he analyzes Peru's informal economy, the economist Hernando De Soto provides a popular application of this view. He describes how the small and medium-sized entrepreneurs who migrated to towns and

cities from rural areas in the second half of the 20th century to work in Peru's fragmented market economy rapidly became extralegal, as a result of the country's institutional arrangements that inhibit entrepreneurial activity and make it costly for economic actors to enter and remain in the formal realm (De Soto 1989: xvii). The underlying idea and policy recommendation in this study, as well as others that follow its footsteps[5], is that deregulation would eliminate the cost of operating within the legal system and hence decrease the informality level of the overall economy. The idea that informality is simply an outcome of state regulation and that it would go away with deregulation, does not seem to hold against historical evidence, however. As Heintz and Pollin point out, "in many developing countries, government regulations have been declining over the past two decades as informalization has risen" (Heintz and Pollin 2003:6). Moreover, empirical evidence points to countries with a relatively limited regulatory burden but sizeable informal economies. There are also countries with heavy regulations but relatively modest informal activity.

In recent years, in view of the obvious shortcomings of the existing research on the state–informal economy nexus, a consensus has begun to emerge among scholars from different disciplinary backgrounds that the regulatory character of the state should be made central to the study of the informal economy. Sassen, one of the earlier and prominent voices in the literature, for instance, emphasized the need to look more closely at state regulation, arguing, "While there are certain activities that lend themselves more to informalization than others, it is not the intrinsic characteristics of activities that determine informalization but rather the boundaries of state regulation" (2000:13). In a recent article, Portes and Centeno

[5] *The Other Path* is often credited for making the most explicit case for the role of the "big state" in the growth of the informal economy. De Soto's theory has enjoyed an intellectually dominant position in the prevailing understandings of economic informality–especially in the policy-oriented international organizations such as the World Bank.

emphasized the state's strength and regulatory intent as significant determinants of the informal economy's development across nations (2006).

A similar change of tide is observed in recent economic analyses also. In contrast to earlier works that reduced state regulation merely to a "cost," that rational economic actors tend to avoid, recent studies have begun to develop more nuanced understandings of the ways in which state regulation affects economic processes. Several economists have argued, for instance, that "in assessing the impact of state regulation on economic processes it is essential to consider that this impact is likely to depend not only on the quantity of regulation, but also on its quality"—different types of regulations affect economic processes and growth dynamics in different ways (Loayza, Oviedo and Serven 2005). Others have noted that the impact of regulations is mediated by the context within which they are imposed (Johnson, Kaufmann and Shleifer 1997; Loayza, Oviedo and Serven 2005). In addition, some scholars have pointed to the distinction between *de jure* and *de facto* regulation arguing that what matters is not the written law but its actual implementation and enforcement (Johnson, Kaufmann and Zoido-Lobaton 1998; Ihrig and Moe 2003; Loayza, Oviedo and Serven 2005; Almeida and Carneiro 2006;). Along these lines, Almeida et al. (2006) explored how enforcement of labor regulations affects the firm's use of informal labor, firm size and firm performance and showed that the enhancement of the enforcement mechanisms would positively affect law-abiding behavior since employers would then be facing a higher possibility of being caught and having to pay a fine. Ihrig and Moe (2001) explored tax compliance and showed that while tax rates also affect the degree of an economy's informality, it is primarily the effectiveness of enforcement that matters.

This study contributes to this more recent body of work on the relationship between state regulation and the informal economy. The objective here is quite modest in one sense. I

attempt to systematize and make explicit what others have also argued: namely, that state regulation matters. At the same time, however, by using comparable cross-national data, I show how it does so specifically, thereby contributing to our knowledge of the state-informal economy nexus.

3. STATE REGULATION AND THE INFORMAL ECONOMY

Regulation can be defined as public control over private sector behavior (Vogel 1996). All states intervene in the process and outcome of economic activities on the basis of a set of enforceable rules (Castells and Portes 1989). These rules lay out who can participate in economic life, what kinds of economic activities can be undertaken, and how. They create a structured environment—a regulatory order—within which economic actors operate. This space embodies various opportunities or barriers for the emergence of informal practices. As Portes and Centeno put it, informal activities develop when and where they can but the "degrees of freedom" for their development remain affected by "the regulatory capacity of state agents and the scope of regulation they are expected to enforce (2006:28)."

Building on Portes and Centeno's theoretical framework, I emphasize two dimensions as key to the state's regulatory relationship with the economy. The first dimension concerns the degree to which the state, through its various rules and laws, restraints the operation of private economic initiative. While some states impose heavy and complicated rules on economic agents, significantly restricting who can participate in economic life and what kinds of economic activities can be undertaken, others might make them subject to a considerably lighter regulatory load. The degree of state regulation in the economy reflects how state actors view markets. Commitment to economic liberalism on the part of state actors, for instance, might result in limited intervention in economic life. These state actors might see the market as the best mechanism for maximizing social and economic welfare, and treat with suspicion the

motives and capabilities of bureaucratic agencies. On the other hand, concerns over the ability of the markets to serve interests of the people might result in a high degree of intervention in economic life. Such states might require numerous qualifications and licenses to enter a certain market; establish rigid production standards; or impose price controls with the objective of improving economic efficiency, protecting social values and correcting market imperfections.

The second aspect of the state's regulatory relationship with the economy concerns the degree to which the state actually remains able and committed to uphold the law. As Weber argued, rules constitute a social order only if and when they are "endowed with certain specific guarantees" of their validity (1978:313). In other words, without a mechanism that in a given situation "will enforce compliance with the rules" one cannot talk about the presence of a social order but only its absence (Weber 1978:312). In his discussion of legal orders, Weber makes the distinction between "guaranteed" and "unguaranteed" law to specifically underline the significance of the enforcement aspect (Weber 1978:313). While some states have the institutional capacity, and the political will to ensure regularized and consistent implementation and enforcement of the existing laws, others might lack either of these factors resulting in poor enforcement outcomes.

Variations along these two dimensions might manifest themselves in the form of different regulatory orders across nations, as presented in Figure 2. In some nations economic actors operate in regulatory orders which are characterized by a low degree of state regulation in the economy coupled with effective enforcement. Such nations, where rules are "minimum but dependable," to use Portes and Centeno's phrase (2006), can be described as pro-market/pro-control regulatory orders. In other nations, laws regulating economic life remain extensive, but the tools and mechanisms for implementing and enforcing the laws do not work effectively. The reason for this might be institutional, a matter of lack of institutional capacity

on the part of the state or ideological, a matter of lack of political will to enforce the rules. Yet other nations might combine a high degree of regulation with effective enforcement, embodying what I call a "coercive" regulatory order. These regulatory environments are "coercive" because by effectively enforcing what remains an extensive set of rules they substantially limit the degrees of freedom for the operation of private economic enterprise. Finally, some nations embody what I call a "chaotic" regulatory environment—one that combines a low regulatory load with ineffective enforcement. In such nations where rules are few and are not well applied, it remains near impossible to talk about the presence of a regulatory "order" in the Weberian sense.

Figure 2 here.

4. DATA and METHOD

In this article I use regression techniques to examine whether and how the state's regulatory intervention in the economy remains associated with the size of the informal economy. This requires, of course, controlling for other characteristics of countries that might also be associated with the size of the informal economy. Hence, I simultaneously include in the analysis a variety of variables including, o*penness to trade*; *rate of unemployment*; *economic growth performance*; *percentage of immigrants in the population*, and share *of the manufacturing sector in the total value-added*. Each of these factors is derived from the literature that has been reviewed in the previous pages.

Since the data used in this analysis is cross-sectional and not time-series, the regression analysis here must be treated as a way of suggesting patterns in the data, rather than a method for rigorous hypothesis testing and causal inference. Time-series data would have surely permitted greater sophistication and the making of causal inferences. Nevertheless, in an attempt to partially remedy for lack of time-series data, I used lagged regressors whenever

possible. The data on the size of the informal economy, the dependent variable, is from 2003/2004 whereas all the explanatory variables used in the analysis are from 2000. The only exception to this is the data used to construct the degree of regulation in the economy, which is from 2004 since this is the earliest date this data was collected by the World Bank. Sample statistics including the bivariate correlations between the explanatory variables and the dependent variable (the size of the informal economy as % of GDP) are provided in Table 1.

Variance inflation factors (VIF), also reported in Table 1, were used to detect the presence of multicollinearity among variables. VIF values indicate how much the variances of the estimated regression coefficients are inflated in comparison to when the regressors are not linearly related. VIF value in excess of 10 is often regarded as an indication of presence of multicollinearity. The VIF values in this case are all quite moderate (the largest is 2.23), hence, it can be safely concluded that there is no evidence of multicollinearity among variables.

Table 1 here

4.1. Dependent Variable: *The size of the informal economy as a % of GDP*

It is common knowledge that estimates of the size of the informal economy must be treated with great caution, as the measurement of the informal economy is problematic in several ways. Besides the obvious fact that it remains a difficult task to accurately measure a phenomenon whose very goal and nature is to escape detection, the varied nature of the informal economy makes it hard for researchers to agree on a given indicator and measurement technique (Feige and Urban 2003). Depending on *what* exactly it is that is being measured, and *how* it is being measured, the results vary. The available techniques for measuring the size of the informal economy are broadly classified in two categories as direct (micro), and indirect (macro) approaches. Direct approaches involve collecting data on informal activities through administering surveys, auditing tax returns or reviewing census reports. Indirect (macro)

techniques, also known as discrepancy measures, on the other hand, follow the footprints that informal economic activities leave behind in the labor, money and product markets, such as the difference between spending and savings accounts, the dissonance between official labor participation rates and the general growth trend, or the amount of currency in circulation above and beyond what is used in official transactions. Indirect techniques since they yield quantitative estimates of the size of the informal economy as a ratio of GDP, which can be computed for each nation and year, make it possible to draw systematic comparisons across-nations and over-time. On the down side, since they are based on a number of priori assumptions regarding the relationship between certain macroeconomic indicators (such as labor market or monetary market measures) and informal economic activity, their robustness depends on the reasonableness of the assumptions that underlie them of course (Feige and Urban 2003). In other words, these estimates hardly provide a fully accurate measure of the size of the informal economy in a given context. Furthermore, although they provide an estimate for the aggregate size of the informal economy, they do not provide information on the actual activities that comprise it. Nevertheless, if we are to move "beyond merely describing instances of informal work in various settings" towards providing generalizable theories and explanations, as Sassen (2000:18) puts it, we have to accept working with a certain margin of error. As long as comparative cross-national analyses rely on estimates derived from a unified technique, I would argue, problems concerning the accuracy of measurement become somewhat less of an issue.

In this analysis I primarily rely on Schneider's (2005) estimations of the size of the informal economy across 145 nations. As far as indirect/macro estimates of the informal economy are concerned, Schneider's data constitutes the most comprehensive set of international data using a unified method that is readily available. To give more information

about this particular data, Schneider assumes that the informal economy comprises non-criminal economic activities that go undeclared. He uses a dynamic multiple-indicators-multiple-causes (DYMIMIC) method to estimate the size of the informal economy as a latent variable. This technique allows for measuring only the relatively estimated sizes of the shadow economy however. In order to calculate absolute figures of the size of the shadow economies from these DYMIMIC estimation results, Schneider uses the already available estimations, from previous studies, based on the currency demand approach for Australia, Austria, Germany, Hungary, Italy, India, Peru, Russia and the United States. Using absolute values of the size of the informal economy (in % of GDP) for these countries, Schneider then applies a benchmark procedure to transform the index of the shadow economy from the DYMIMIC estimations into absolute values.

Although I primarily rely on Schneider's estimates, I use an additional set of cross-national data on the size of the informal economy which I obtained from the World Economic Forum. This data is based on the Forum's Global Competitiveness Survey—an executive opinion survey which collects information from a representative sample of business leaders across nations. One of the survey questions asks respondents: "What percentage of businesses in your country would you guess are unofficial or not registered? (1=less than 5%; 2=6-10%; 3=11-20%; 4=21-30% ...9= more than 70%)." I used this data, from 2002, as an alternative measure of the size of the informal economy to cross validate the results.

4.2. Independent Variables

Degree of Economic Regulation and Effectiveness of Law Enforcement Institutions

Problems concerning the availability and comparability of data are of concern for cross-national analyses of state regulation also. As is the case with the informal economy, state regulation is a multifaceted phenomenon which involves specific laws and policies, as well as

the agencies that implement these laws and policies, all of which vary dramatically across nations.

In order to capture the *degree of state regulation of the economy*, I primarily rely on the World Bank's *Doing Business* dataset. *Doing Business* is one of World Bank's major cross-national research initiatives, which has yielded to compilation of a substantial amount of data on various aspects of state regulation of economic activity across the world.

Doing Business[6] captures information on the state's regulation of the economy across nations in two steps. First, laws and regulations concerning economic activity in a given nation are thoroughly reviewed by the relevant members of the *Doing Business* team. Then, through standardized surveys more detailed input is sought from local government officials, lawyers, business consultants, and other professionals with hands-on experience with administering or advising on legal and regulatory requirements for verification purposes. As a result, the Doing Business data reflects the actual requirements and costs that businesses face, rather than a simple description of written laws and regulations.

Doing Business contains the most detailed and comprehensive data of its kind. It provides information on the overall degree of state regulation, as well as its particular types. In this study I use *Doing Business* data from 2004 to measure state regulation of economic activity in four areas: market entry; paying taxes; employment of workers, and property registration.

With regards to "market entry" and "property registration" regulations *Doing Business* provides three kinds of information for each nation in the data set: the number of procedures to be completed, the cost of completing the necessary procedures, and the time it takes to complete them. Since these are in different units, I first converted them into standardized z-

[6] The information here is incorporated from the World Bank's Cost of Doing Business website.

scores. I then computed indexes for "regulation of market entry," and "regulation of property registration" in each nation by taking an average of their standardized components.

With regards to regulations administering the payment of taxes, also, *Doing Business* provides three kinds of information for each nation: total tax rate, number of tax payments, and the time it takes to complete the tax payments. Once again, I first converted each of these separate measures, which were in different units, into standardized z-scores. Then I computed an index of "regulation of taxation" for each nation by taking an average of the three related standardized components (tax rate, number of tax payments, and the time it takes to complete the tax payments).

The "employing workers" index is an average of three components: "difficulty of hiring," "difficulty of firing," and "rigidity of hours." The same procedures of standardizing and averaging were followed as described above.

By taking an average of these four standardized regulatory indices—namely, "regulation of market entry," "regulation of property registration," "regulation of employment," and "regulation of taxation," I computed an aggregate index for the overall *degree of state regulation of the economy* (DR) for each nation. The index for the overall degree of state regulation in the economy ranges from -1.18 to 1.76 with higher scores indicating more extensive and rigid rules and laws regulating private economic activities.

To measure the effectiveness of nations' law-enforcement institutions, I rely primarily on the World Bank's *Governance Matters* dataset from 2000. *Governance Matters*[7] is based on several hundred individual variables measuring perceptions of governance drawn from 37 separate data sources constructed by 31 different organizations—mostly business risk and

[7] The information here is incorporated from Kaufmann, Daniel; Aart Kraay and Massimo Mastruzzi (2005), "Governance Matters IV: Governance Indicators for 1996-2004," World Bank Policy Research Working Paper No. 3630, available at SSRN: http://ssrn.com/abstract=718081

economic forecasting organizations. One of the governance indicators measured by the Bank is the "rule of law," which concerns the quality of contract enforcement, the police, and the courts (fairness, independence, and speediness of judiciary). I use this data to measure the *effectiveness of law enforcement* (LE) across nations. *Governance Matters* provides point estimates for the quality of the rule of law in each nation. These estimates are normally distributed with a mean of zero and a standard deviation of one. The law enforcement index for our sample ranges from -2.03 to 1.92, with higher scores corresponding to higher effectiveness of law-enforcement institutions.

I use additional data from the 2000 Global Competitiveness Survey of the World Economic Forum to cross-validate the results. One of the questions in the 2000 survey asks respondents "how burdensome" regulations are in their respective countries (1=burdensome; 7=not burdensome). Another question asks respondents whether "starting a new business" in their country is "generally easy or difficult" (1=extremely difficult and time consuming; 7= easy). By taking the average of these two measures, I created an alternative index for degree of regulation in the economy. Higher scores on this index indicate less burdensome regulation. To measure the quality of legal enforcement, I relied on two separate questions from the Global Competitiveness Survey as well. One of these questions measures the quality of the judiciary by asking respondents "whether irregular payments to judges, court personnel, or other official are very rare" (1=strongly disagree; 7= strongly agree). The second question asks respondents "whether private businesses can rely on police for protection" (1=strongly disagree; 7= strongly agree). Again, by taking an average of these two measures I created an alternative quality of enforcement index, with higher scores indicating more effective enforcement.

4.3. Control Variables

I include in the analysis five socio-economic variables, which I believe constitute theoretically plausible determinants of the size of the informal economy, to reduce the omitted variable bias. These control variables are derived from the literature on the informal economy reviewed in the previous pages.

First, to examine the argument that the prominence of informal economic practices in advanced nations results from the economic restructuring brought about by the fall of the manufacturing sector in these nations (Sassen 2000, 2002), I include a variable measuring *the share of manufacturing in the total value-added* (SM) in the analysis. The data for the share of manufacturing sector in the value-added is from 2000, and is provided by the United Nations Statistics Division. Following Sassen's thesis, we would expect to see smaller-sized informal economies in nations where manufacturing has a higher share in the total value-added.

I also include the log of *openness to trade* (OT). As discussed earlier, one of the arguments in the literature is that competition from foreign products (in domestic or export markets) could play a role in fostering informalization as a mechanism to reduce costs of production (Sassen and Portes 1987; Castells and Portes 1989). Following this argument, one would expect to see more informal activity in nations that are open to trade. To measure a nation's openness to trade, I use the trade-to-GDP-ratio, which is the sum of exports and imports as a ratio of GDP. The data on exports, imports and GDP is from 2000, and is provided by the Political Risk Services Group (PRS) Country Data.

A third variable that I included in the analysis is the s*hare of immigrants in a country's population* (IM). Inclusion of this variable is in consideration of a considerable number of studies in the literature that have emphasized the role of immigrants in driving the informal economy especially in metropolitan areas. Here, I use data from 2000 made available by the

United Nations Population Division Unit which measures the "international migrants as a percentage of the population." International migrants are defined as persons born in a country other than that in which they reside.

Another explanation that can be derived from the literature concerning the cross-national variation in the size of the informal economy is the countries' varying levels of development, which is often measured by their per capita GDPs. It would have made sense theoretically, for that matter, to include per capita GDP in the analysis as a control variable. I have decided to leave it out, however. This is for two reasons. First, per capita GDP remains highly correlated with many other country characteristics that I control for, particularly with the effectiveness of enforcement (.87). Including it in the analysis in this case would have created serious multicollinearity concerns. And second, I am more interested in finding out which of these country traits, all of which remain significantly correlated with the per capita GDP, is more strongly associated with the size of the informal economy.

Although I left the per capita GDP out, I included two other control variables that stem from the theoretical literature framing informality as a matter of economic development. These are *the rate of unemployment* (UN), and *economic growth performance* (EG). According to the literature, informal economic activities develop in countries with poor growth performance and limited job opportunities in the formal economy. In such contexts, the argument goes, people resort to the informal economy to make the living that they are not able to make through formal means. The rate of unemployment data that I use to examine whether this is the case is from 2000, and is provided by the PRS Country Data. As a measure of economic growth performance, I use average GDP growth over a span of five years from 1998 to 2002. The data for this also comes from the PRS.

Finally, I include dummy variables for different regions including Middle East and North Africa (MENA), Western Europe, Africa, Post-Soviet, Latin America, Central and Eastern Europe, and East and South East Asia.

5. Results

I start with a three-dimensional graph, presented in Figure 3, which displays the distribution of the size of nations' informal economies along the two regulatory variables of interest—the degree of state regulation in the economy and the effectiveness of legal enforcement institutions. The size of the bubbles indicates the size of the informal economy as a percentage of GDP. The graph shows that it is in regulatory environments combining a low regulatory load with effective law enforcement institutions where we find the size of the informal economy to be smallest. Most OECD countries are in this category—with the US, UK, Australia, Singapore, Hong Kong, Denmark, Switzerland, New Zealand and Canada standing closer to the ideal type. Conversely, the highest levels of informality in the economy seem to exist in regulatory environments where rules and laws organizing the economy remain restrictive and burdensome while enforcement of the rules remains ineffective. Majority of Sub-Saharan Africa and Latin American nations are in this group, the most ideal typical examples being Angola, Burundi, Democratic Republic of Congo, Sierra Leone and Venezuela. The graph also shows high degrees of informality associated with what I deem "chaotic" regulatory environments. Armenia, Albania, Kazakhstan, Serbia, Fiji, Solomon Islands, Vietnam, Jamaica, Papua New Guinea are the ideal-typical examples in this category. Coercive regulatory orders, as I call them, seem to be associated with lower degrees of informality than chaotic regimes, and higher degrees of informality than liberal regimes. Although there is no country that stands close to an ideal type here, France, Greece, Portugal Slovenia, Spain and Morocco are in this group.

Figure 3
Table 2

In Tables 3, 4, and 5 below I provide the regressions on which the present analysis rests. Depending on the number of missing cases, the sample size in a given exercise ranges from 47 to 135.

The regression results of the first model in Table 3 show the size of the informal economy to be significantly associated both with the degree of regulation in the economy (p=0.03) and the quality of law enforcement (p=0.00). On average, a one-point increase in the degree of state economic regulation is associated with a 3.7% increase in the size of the informal economy, whereas a one-point increase in the effectiveness of law enforcement institutions is associated with a 8.9% decrease in the size of the informal economy.

The argument of the paper is focused on the interrelationship between the degree of regulation and the extent of its enforcement. Hence, in Model 2, I check whether the effect of the degree of state regulation on the size of the informal economy varies by the effectiveness of nations' law enforcement institutions. The interaction term *DR x EL* is found positive and statistically significant at p=0.03 level. This indicates that the degree of state regulation is more strongly associated with the size of the informal economy in nations with higher levels of effectiveness in law enforcement.

Table 3

Figure 4[8] below shows this more clearly. The first plot shows the relationship between the degree of state regulation and the size of the informal economy across nations with effective enforcement, while the second one plots the relationship in nations where law

[8]I split the whole sample into two roughly equal sized samples as "nations with effective law enforcement" and "nations with ineffective law enforcement" to plot the relationship between degree of regulation and the size of the informal economy.

enforcement is ineffective. In the former, the correlation between the size of the informal economy and the degree of regulation is .55, whereas in the latter, it is .21.

Figure 4

Model 3 in Table 4 examines the association between state regulation and the size of the informal economy by controlling for a range of socio-economic variables. As noted before, each of these factors is derived from the literature on the informal economy. Quality of law enforcement variable remained highly significant (p=0.000) even when controlling for these variables, while the degree of regulation in the economy turned insignificant. Model 4, which uses the World Economic Forum data to examine the same hypotheses provide consistent results. Quality of legal enforcement variable again achieves significance at p=0.000 level, while all the other variables, including the degree of regulation remains insignificant.

Table 4

Model 5 includes dummy variables for region in the analysis to explore whether some of the variation across the nations can be explained by the various historical and cultural factors that may be associated with a nation's particular regional context. The effectiveness of law enforcement variable remains highly significant (p=0.000) after dummy variables for region were included in the model as well. The regional dummies for Latin America and former-Soviet nation also obtained significance, both at p=0.06 level, with substantially large coefficients. This suggests that there are certain historical or cultural circumstances[9] that affect the growth of the informal economy in these two regions, which are not captured by any of the regulatory or socio-economic variables specified in the model. A nation's being from these regions seems to make it more likely for it to have a larger-sized informal economy regardless

[9] The present analysis cannot capture what those factors are. Given the findings, it is clear that this is a question that is worth being researched further.

of its regulatory environment, unemployment rate, its degree of openness to trade, the size of its immigrant population, its economic growth performance, or the composition of its value-added.

These results, however preliminary, provide some insight into the question of why the past two decades' market-oriented policies that sought to reduce the regulatory costs on economic enterprises have not led to a decrease in the size of the informal economy across the developing nations, as neoliberal institutions and policymakers predicted that they would. First of all, although the degree of state regulation overall has a significant positive correlation with the size of the informal economy, the correlation between the two seems to be substantially weaker in the case of nations with ineffective legal enforcement mechanisms. A majority of the world's developing nations are of course in this category. More to the point, in order to be able to say that a nation could decrease the size of its informal economy by decreasing its degree of state regulation in the economy, one would have to show not only that there is a significant relationship between these two variables but that this relationship holds when controlling for other characteristics of countries as well. This does not seem to be the case, however. It should be no surprise in this sense why deregulatory policies have not brought about a decrease in the size of the informal economy.

A few words must be said with respect to the robustness of the results. An important issue to take into consideration is the problem of endogeneity between the size of the informal economy, and the effectiveness of law enforcement. It needs to be tested whether quality of law enforcement is an independent determinant of the size of the informal economy, and is not simply the consequence of higher levels of informality in the economy. The standard technique to test for endogeneity is by using instrumental variables and two-stage least squares. Identification of suitable instruments poses the main challenge here. A good instrumental

variable should both be highly correlated with the endogenous independent variable, in this case effectiveness of law enforcement, and should not directly influence the dependent variable, which here is the size of the informal economy. I used *latitude* (a country's distance from the equator) as an instrument. This variable seems to have become a conventional instrument for variables concerning governance and institutional quality in the economics literature (Hall and Jones 1999; La Porta et al. 1999; Sachs 2000). The Durbin-Wu-Hausman test was performed to detect endogeneity. Table 5 presents results from two-stage least square (2SLS) using the instrument variable. DWH test fails to reject the null hypothesis that quality of enforcement is exogenous to the size of the informal economy.

Table 5

6. Conclusion

The objective of this article was to provide some additional insight into the question of cross-national variation in the size of the informal economy by specifically probing the state regulation-informality nexus. As previously discussed, one of the predominant views in the literature explains this variation as a result of the differences in nations' development levels. This view, however, cannot explain why nations with the same level of development would have different levels of informality in their economies. Second, it cannot account for the fact that the size of the informal economy has not declined but has actually increased in many developing nations with periods of increased growth (Portes and Sassen 1987; Rogerson 1985). And more importantly, it does not specify, which of the many factors associated with development plays a more significant role in determining the size of the informal economy. Another position, what we may call the neoliberal view, holds that the informal economy is an outcome of the "regulatory burden" nations impose on economic actors. According to this

perspective, nations that impose heavy rules on economic actors operating within their borders are bound to end up with high levels of informality in their economies than nations with less burdensome regulations. Deregulation is portrayed as a policy tool that would bring about formalization in the economy. This perspective cannot explain how is it that nations with comparable levels of regulatory burden have different degrees of informality in their economies, and why is it that in many developing countries, the size of the informal economy has expanded over the past few decades during what was a period of intensive deregulation (Heintz and Pollin 2003:6).

Other studies, yet, emphasize a wide range of socio-economic factors including immigration, unemployment, low growth rates, and competition from foreign products. The findings of the present analysis challenge and contribute to these explanations.

While the complexity of the issues and the limitations of data make it necessary to be cautious, overall findings of this analysis present support for the argument the reason why some nations have more informality in their economies has much to do with their regulatory environment. Speaking in average terms, nations with lower degrees of state regulation in the economy combined with effective enforcement mechanisms tend to have the smallest degrees of informality in their economies; whereas nations with higher degrees of state regulation in the economy, combined with ineffective enforcement mechanisms have the highest levels of informality. The nations that combine lower degrees of state regulation with ineffective enforcement mechanisms tend to have higher levels of informality than nations with higher degrees of state regulation in the economy combined with effective enforcement mechanisms.

The effectiveness of law enforcement seems to be a particularly significant factor here. This variable has consistently obtained high levels of statistical and substantial significance even when controlled for a range of socio-economic factors as well as region-specific effects.

The relationship between the degree of state regulation and the informal economy, on the other hand, does not seem to be straightforwardly causal, as it is often suggested. Although, there is a significant positive correlation between the degree of regulation and the size of the informal economy, this relationship does not hold when controlling for the socio-economic and region-specific characteristics of countries. This finding has important implications for economic policy. It first of all disputes the neoliberal argument that the informal economy develops as an outcome of the "regulatory burden" nations impose on economic actors. Although deregulation has often been portrayed, by the neoliberal orthodoxy, as a facilitative tool to attract economic actors out of informality into the formal realm, the reality is much more complex and varied. The regression results presented here, although they do not allow us to discern these relations over time, imply that it makes little sense to argue that getting rid of regulations would make economies more formal. As a matter of fact, the degree of state regulation does not have a significant association with the size of the informal economy in nations which do not have effective enforcement mechanisms. This applies to most of the world's developing nations. Having said that, deregulatory policies taking place simultaneously with, or subsequently following, institutional reforms that seek to improve the effectiveness of law enforcement institutions and mechanisms may possibly yield that effect, since, judging by the data, the size of the informal economy has a stronger relationship with the degree of state regulation in nations with more effective law enforcement systems. More research, involving specific cases is needed, of course, to look into these relations more carefully. This article only provides a bird's view of the state regulation-informal economy nexus.

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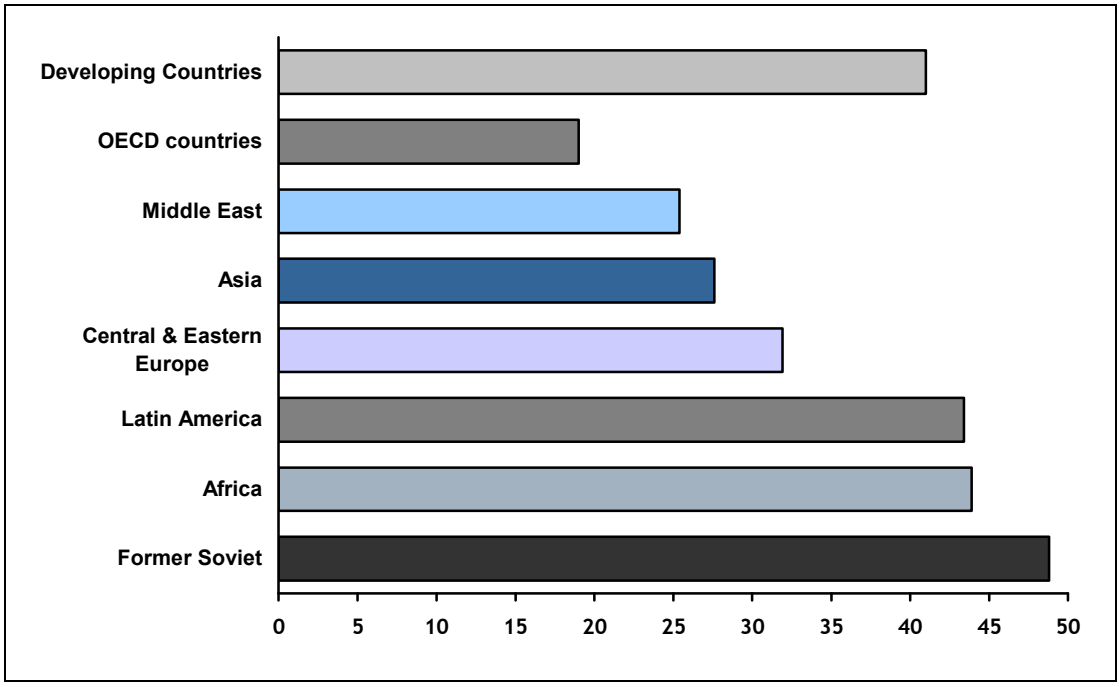
TABLES AND FIGURES

Figure 1: The size of the informal economy across the world (% GDP)



Source: Schneider, 2004

Figure 2: Regulatory Orders

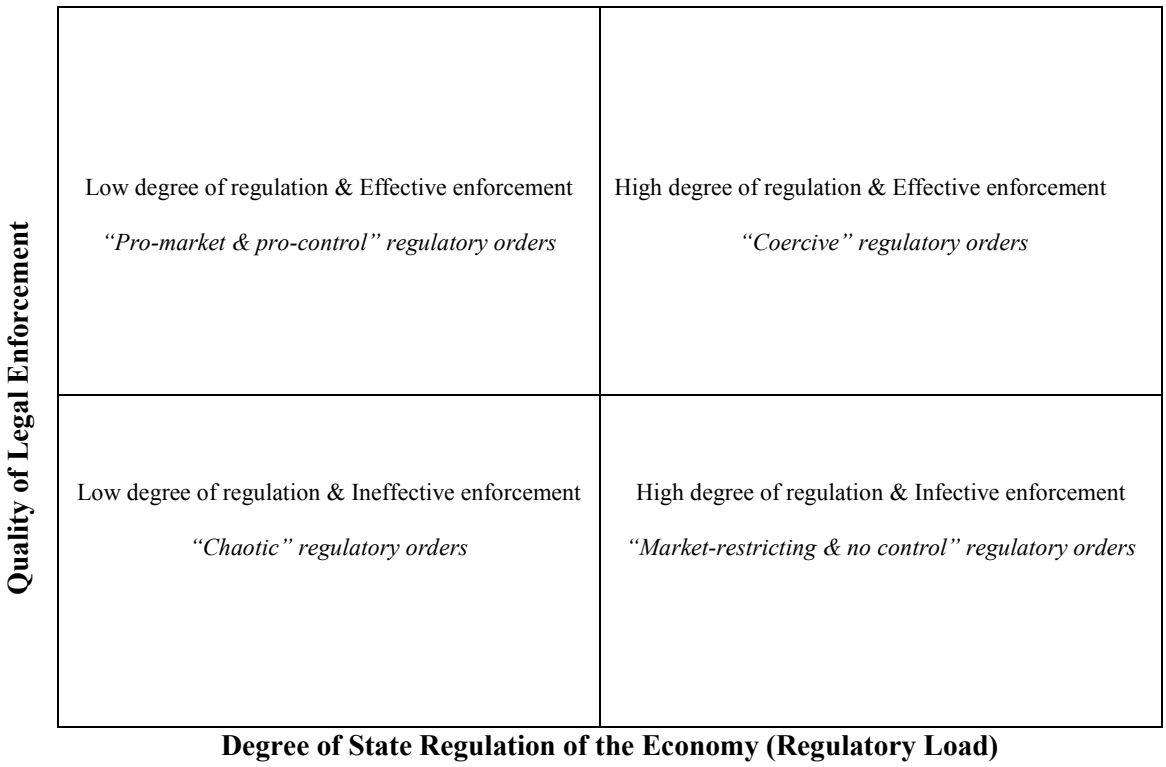


Table 1: Sample Statistics

	IE	DR	LE	UN	EG	SM	IM	OT (log)	*VIF score*
Mean	35.03	-0.03	-0.08	12.50	2.50	15.02	6.72	4.07	
Max	68.30	1.76	1.92	50	7.40	42.00	70.40	5.75	
Min	8.70	-1.18	-2.03	1.20	-5.00	1.00	0.00	2.56	
Std. Deviation	13.40	0.54	0.97	9.57	1.82	7.60	10.90	0.59	
N	140	150	151	89	90	148	148	89	
Correlation Matrix									
IE	1.00								-
DR	0.53	1.00							2.23
LE	-0.72	-0.57	1.00						2.18
UN	0.37	0.45	-0.56	1.00					1.56
EG	-0.13	-0.19	0.07	-0.20	1.00				1.25
SM	-0.19	-0.21	0.35	-0.26	-0.01	1.00			1.32
IM	-0.35	-0.36	0.36	-0.27	-0.10	0.04	1.00	0.28	1.83
OT (log)	-0.04	-0.24	0.09	-0.12	0.09	0.08	0.28	1.00	1.24

IE, the size of the informal economy as % of GDP; DR, degree of state regulation; LE, quality of law enforcement; UN, unemployment rate; EG, average economic growth (1998-2002); SM, share of manufacturing in total value-added; IM, % immigrants in total population; OT (log), openness to foreign trade

Figure 3: Regulatory orders and the Size of the Informal Economy

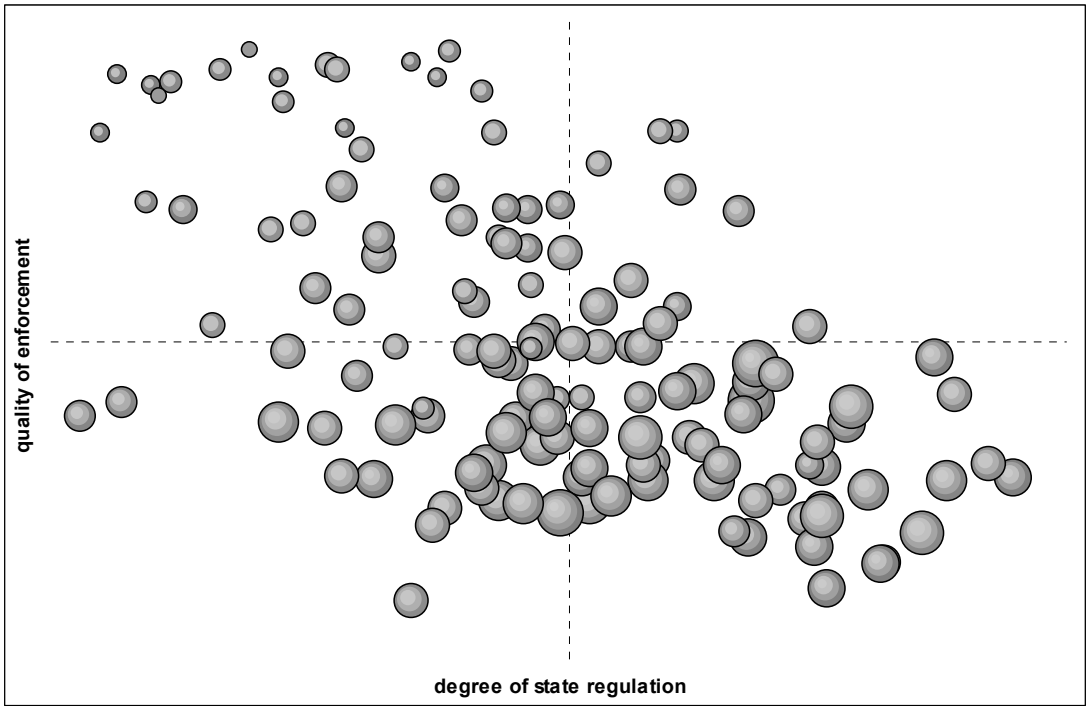


Table 2: List of countries by regulatory order

Low Degrees of Regulation & Effective Enforcement			High Degrees of Regulation &Effective Enforcement		
Australia	Hungary	Samoa	Croatia	Kiribati	Slovenia
Austria	Ireland	Saudi Arabia	France	Latvia	Spain
Belgium	Japan	Singapore	Greece	Morocco	
Bhutan	Jordan	Slovakia	India	Portugal	
Botswana	Korea	South Africa			
Canada	Kuwait	Sweden			
Chile	Malaysia	Switzerland			
Costa Rica	Namibia	Taiwan,			
Czech R.	Netherlands	Thailand			
Denmark	New Zealand	UAE			
Estonia	Norway	United Kingdom			
Finland	Oman	United States			
Germany	Poland	Uruguay			
Hong Kong	Puerto Rico				
Average size of the informal economy: *23.1*			***Average size of the informal economy*****:** *29.15*		
Low Degrees of Regulation & Ineffective Enforcement			**High Degrees of Regulation & Ineffective Enforcement**		
Albania	Kazakhstan	Philippines	Algeria	El Salvador	Paraguay
Armenia	Kenya	Russian	Angola	Ethiopia	Peru
Belarus	Lebanon	Serbia	Argentin	Ghana	Philippines
Bulgaria	Lesotho	Solomon Islands	Azerbaij	Guinea	Romania
Dominican R.	Macedonia	Tonga	Banglade	Honduras	Russia
El Salvador	Marshall	Turkey	Benin	Indonesia	Rwanda
Fiji	Micronesia	Uganda	Bolivia	Iran	São Tomé
Georgia	Moldova	Vanuatu	Bosnia	Kyrgyz Republic	Senegal
Guatemala	Mongolia	Vietnam	Brazil	Macedonia	Sierra Leone
Iran	Nepal	Zambia	Burkina	Madagascar	Syria
Jamaica	Papua New G.	China	Burundi	Malawi	Tanzania
			Cambodia	Mali	Togo
			Cameroon	Mauritania	Tunisia
			Central	Mexico	Ukraine
			Chad	Mozambique	Uzbekistan
			Colombia	Nicaragua	Venezuela
			Congo, Republic	Niger	Yemen
			Congo Democ. R.	Nigeria	Zimbabwe
			Ecuador	Pakistan	
			Egypt	Panama	
Average size of the informal economy: *38.5*			***Average size of the informal economy:*** *43.7*		

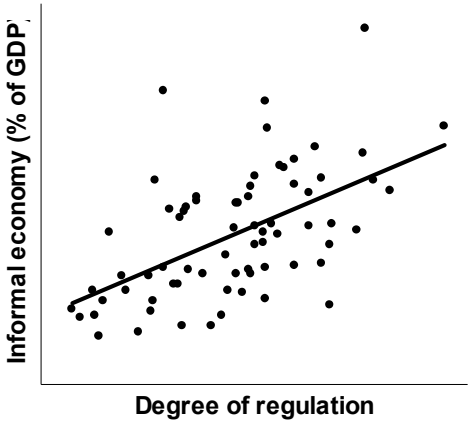
Table 3. OLS Results; Regulatory Variables

	Model 1	**Model 2**
Constant	34.660 (.785)***	35.664 (.900)***
Regulatory Variables		
Degree of regulation in the economy (DR)	3.730 (1.756)**	4.964 (1.825)***
Effectiveness of legal enforcement (LE)	-8.857 (1.007)***	-8.144 (1.048)***
DR x LE		2.975 (1.381)**
Observations	138	138
R-squared	.54	.55

Dependent variable: Size of the informal economy (as a % of GNP); standard errors in parentheses;
*** Significant at 99% confidence level; **significant at 95% level; * significant at 90% level

Figure 4: Degree of regulation and the size of the informal economy (% of GDP)

Nations with effective enforcement
N=70



Nations with ineffective enforcement
N=69

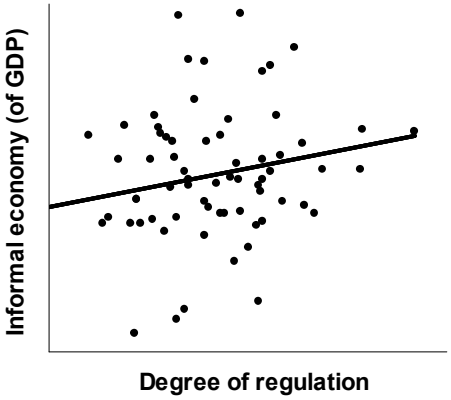


Table 4. OLS Results; Regulatory Variables, Socio-economic Variables, Regions

	Model 3	Model 4	Model 5
Constant	30.575 (8.687)***	8.347 (.955)***	21.058 (9.341)**
Regulatory Variables			
Degree of regulation in the economy	3.672 (3.321)	-.127 (.187)	3.181 (3.239)
Effectiveness of legal enforcement	-9.881 (1.637)***	-.766 (.098)***	-7.002 (2.304)***
Socioeconomic Variables			
Unemployment	-.127 (.155)	.001 (.015)	-.053 (.171)
Openness to trade (log)	2.229 (2.127)	-.095 (.211)	3.618 (2.233)
Share of manufacturing	-.115 (.199)	-.027 (.022)	-.052 (.198)
Economic growth	-.480 (.670)	-.071 (.062)	-.274 (.644)
Immigrant population	-.095 (.120)	.004 (.018)	-.098 (.126)
Regional Dummies			
Middle East and North Africa			-2.433 (4.693)
Central and Eastern Europe			-3.169 (5.346)
East and Southeast Asia			-7.736 (4.798)
Latin America			8.278 (4.317)*
Western Europe			-3.354 (4.393)
Africa			4.509 (4.753)
Post Soviet			13.580 (7.045)*
Observations	78	48	78
R-squared	.59	.77	.70

Dependent variable: Size of the informal economy (as a % of GNP); standard errors in parentheses; *** Significant at 99% confidence level; ** significant at 95% level; * significant at 90% level. ***Note:*** Model 4 uses World Economic Forum Data for the size of the informal economy, degree of regulation, and quality of law enforcement. Higher scores on the degree of regulation data in Model 4 indicate lower degrees of regulation in the economy.

Table 5. 2SLS Estimates

	2SLS Estimates
Constant	30.809 (8.850)***
Regulatory Variables	
Degree of regulation in the economy	3.256 (4.462)
Effectiveness of legal enforcement	-10.273 (3.249)***
Socioeconomic Variables	
Unemployment	-.138 (.175)
Openness to trade (log)	2.175 (2.162)
Share of manufacturing	-.105 (.214)
Economic growth	-.494 (.678)
Immigrant population	-.093 (.121)
Observations	78
Instrument	Latitude
DWH: -0.14 *Fail to reject the null; OLS estimate is consistent*	

Dependent variable: Size of the informal economy (as a % of GNP);
Standard errors in parentheses; ** *Significant at 99% confidence level