

Discussion Papers in Economics

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Discussion Paper 04-20

August 2003



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August, 2003.

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Abstract

Most developing countries are characterized by large informal sectors, which are plagued by low productivity and other serious problems. This paper suggests a three-fold remedy for formalizing the large informal sector: formalization of property rights, alleviation of corruption and deregulation. In the case of India, which is studied in the paper, it is seen that the first two channels are more promising than the third one. The paper also rejects the notion of discontinuation of informal business activity by force.

Introduction

A large informal sector is considered a drawback in an economy. There are several reasons for this, not all of which are justified. For the rest of this paper we shall consider the informal sector as that part of the economy which is not regulated by the government. In India this is often referred to as the unorganized sector.

One reason why a large informal sector is considered a drawback is the low productivity of the informal sector. In India the informal sector accounts for 90% of the total employment and 60% of the gross domestic product. Thus, the average product of labour is six times higher in the formal sector than in the informal sector. All other things remaining constant, a higher share of the formal sector in total employment should result in higher national income.

Another justification given for the reduction of the informal sector is less convincing. The informal and formal sector not only compete with each other in selling their products but also for space. The informal milk vendor competes with formal milk processing companies in the consumer market. Rickshaws and cars compete for the same space on streets. This hampers the speed of cars, results in traffic jams and increases fuel

consumption.² Vendors and hawkers crowd the streets, disrupting business activity. Informal sector manufacturing enterprises belch smoke and pollutants make it difficult for the formal city dweller. In recent years in many developing countries the formal sector lobby has emerged much stronger than the informal sector lobby. As a result many measures have been taken to limit the size of the informal sector. For example, the licensing of cycle rickshaws and vendors is one such measure. In the city of Delhi unlicensed cycle rickshaws have been even seized by the authorities and vendors have been forced to discontinue their business.

A large informal sector implies that policies of liberalization and globalization are less effective. When an economy liberalizes it is only the formal sector that comes into contact with the rest of the world. Foreign economies consider it too risky to transact with the informal sector. Because the gains from liberalization are confined only to the formal sector a larger informal sector implies smaller gains.

Entrepreneurs operating in the informal sector are often excluded from policymaking or law making processes (Kuchta-Helbling-2000). This arrangement weakens check and balance mechanisms, potential opposition to the government and government accountability vis a vis the general public, thereby jeopardizing democracy (Louw, 1996).

The production structure of informal activity weakens the power and influence of trade unions. Informal sector activity is characterized by heterogeneous and loosely linked production units with multiple intermediaries between workers and capital (Kuchta-Helbling, 2002). This is not very conducive for the formation of trade unions. A large informal working force waiting in the wings dilutes the bargaining power of formal sector workers with their employers. As a result countries with large informal sectors are characterized by poor working conditions in general.

² On the other hand it must be pointed out that cars do nothing to add to the average vehicular speed in crowded areas.

The discussion in the preceding paragraphs suggests two methods for controlling the size of the informal sector. One of them is formalization, which is motivated by the poor productivity of the informal sector. There are many aspects to formalization. A necessary condition for formal production is formal property rights on the land on which the production unit operates. The only exception to these is mobile service units providing services to consumers. An example of such mobile units is “vendors”. These use public property such as roads and parks even if they are formalized. All business units, which are fixed in geographical space have to have formal property rights on the land that they occupy if they are to be classified as formal units. Thus, one way in which formalization of business and production activity can be achieved is the formalization of informal property rights.. However, even though formal property rights are a necessary condition for being classified as formal business enterprises these are not sufficient conditions for enterprises becoming formal. A large number of regulations have to be met by a formal sector unit. Sufficient proof has to be given that the production/business unit is well equipped to meet these regulations. Officially, if such proof is given then the relevant government authorities should be compelled to provide the necessary permits which pave the way for formalization. However, in practice this does not happen in many developing countries where officials have to be bribed to grant the necessary permits. The number of regulations is also an increasing function of the time lost in getting the necessary clearances. Thus, it seems that corruption and regulation are stumbling blocks to formalization. Any process of formalization is therefore dependent on processes of alleviation of corruption and deregulation for its success.

The other method for containing the size of the informal sector is forcible discontinuation of informal business, which is motivated by the conflict between formal and informal business activity.

The rest of the paper is structured as follows. In Section I we evaluate the forcible discontinuation of informal business activity. In Section II we look at formalization. Section III analyses the Indian case. Section IV concludes.

I. Forcible discontinuation of informal business activity

In spite of the conflict between the formal sector and the informal sector the informal sector serves two important objectives:

- (i) The employment objective: It provides employment to millions of persons, mostly migrants. Only a small proportion of informal workers displaced by forcible discontinuation of informal business can be accommodated by the formal sector and the corresponding expansion of markets for formal sector products, given that the labour output ratio in the formal sector is much lower. In other words, the forcible discontinuation of informal business will result in growing unemployment. Forcible discontinuation of any specific informal sector activity (such as rickshaw pulling) may not result in a decrease in the overall size of the urban informal sector. The displaced workers will turn to low productivity occupations within the city. Return migration from the city to the rural areas will not be an outcome because
 - (a) Return migration costs are quite significant given the low level of incomes.
 - (b) The rural areas are in a state of stagnation and will be unable to generate any additional family income from the return of the displaced workers to their homes. (See Mitra, 2002 for details.)
- (ii) The remittance objective: Earnings from the informal sector are remitted to the rural sector. In one survey remittances from informal sector workers actually amount to around 20% of their incomes and are used for agricultural improvements, rural improvements and consumption.

- (iii) In certain sectors like transport, the informal sector (e.g. cycle rickshaws) offer a pollution free alternative.

Below we analyse the remittance behaviour of individuals. Our ultimate objective in this case is to look at the effectiveness of measures to control the size of the informal sector. But for that we have to look at the micro-economic analysis of the remittance behaviour of individuals.

Micro-economic analysis of remittance behaviour of individuals

I assume that the individual working in the informal sector not only cares about himself but also his family at home, though not to the same extent. To make matters simple assume that the informal sector worker only has one family member in the rural area. The utility function of the individual is given by

$$U_1(w - r) + \alpha U_2(Y_A + r); 0 \leq \alpha \leq 1$$

where w denotes the informal sector wage and Y_A denotes the income of the family member from agriculture. The level of remittances is denoted by r . Thus, $w - r$ represents his own consumption and $Y_A + r$ represents his rural family member's consumption.

Maximizing this utility function with respect to r yields the following condition

$$\alpha U_2'(Y_A + r) = U_1'(w - r)$$

Taking the total differential with respect to Y_A and r yields

$$\frac{dr}{dY_A} = \frac{-\alpha U_2''(Y_A + r)}{\alpha U_2''(Y_A + r) + U_1''(w - r)} < 0$$

This implies that as agricultural income of the family member increases the remittance to the family member decreases. In other words the remittance objective gets diluted.

What happens if the wage income decreases? A practical example is limiting areas in which rickshaws and cycle vendors can operate, leading to the diminution of their incomes. Taking total differential with respect to w and r yields

$$\frac{dr}{dw} = \frac{U_1''(w-r)}{\alpha U_2''(Y_A+r) + U_1''(w-r)} > 0$$

This implies that the amount of remittances made decrease as the informal wage decreases.

As we have seen that remittances are used for agricultural improvements. This results in growth of agricultural incomes. With growth in agricultural incomes, the remittance objective gets diluted. The resulting increase in post remittance income increases the prospects for entering the formal sector. Note that formalization has its costs in the form of fees for permits and investment in quality capital. Thus, there is a natural process of formalization. Now if the wage income in the informal sector decreases, remittances go down. Agricultural improvements slow down. Slower growth of agricultural incomes implies slower decrease in remittances, slower increase in post remittance incomes and therefore slower formalization.

Thus, the basic conclusion of this section is that restricting the scope of informal business activity results in slower formalization.

II. Formalization

Formalization of property

As we have mentioned before, formal property rights over land is a precondition for entering the formal business sector except in the case of mobile business. An important fact is that the people in the informal sector mostly do not have formal, legally recognized rights over the property they own: their land, their buildings and their businesses. In Delhi, the

capital of India, you see food kiosks and vendors and motor garages cropping up all over the place. The people operating these businesses do not have legal rights over the land capital and the business. In Latin America the property informally held by the poor informal citizens has reached a bank value of U.S. \$ 500 billion. Note that property rights are formalized when they are embodied in universally obtainable standardized instruments that are registered and governed by legal rules. These instruments provide indisputable proof of ownership which informal rights do not provide. Hernando de Soto (read his articles mentioned in the references for a good insight into the informal property rights problem) estimates that around 75% of real estate parcels in developing countries do not have formalized titles. The assets held in the informal sector are dead capital. Because creditors do not have indisputable proof as to who owns them and therefore, they are not acceptable collateral for creditors. Thus, these cannot be used to obtain credit. Thus, the economy is denied a major source of credit. The enormity of this denial is illustrated by the fact that \$ 4 trillion dollars of credit is owed against formal property rights in the U.S. How can this dismal picture of most of the population having informal property rights be reversed? The answer of course is formalization of property rights. Once people gain legal control over their property they gain the security to improve and develop the land. The capital value of the property increases, further enhancing the value of such property as collateral. The lack of formal property rights and the resulting accountability problem implies that infrastructure suppliers are very cautious about supplying electricity and water to people with informal property rights. Indeed their attempts to supply electricity to such people have led to huge losses because of fraud, theft and lack of information about users. The very process of formalizing property rights generates information that can be fed into computers and utilized later for security and development. The existence of informal rights in a large part of the economy limits the influence of computerization. Finally, the lack of security and

facilities which people with informal rights can avail implies that they are unwilling to undertake a great deal of improvement or development of their property.

Without formal property rights people cannot enter the formal production sector. Because the informal production sector is both limited in its consumer and credit base, the formal sector has an advantage over the informal sector. One must realise though that formal property rights are necessary but not sufficient for entering the formal production/business sector. Once formal property rights exist, entry into the formal production/business sector is facilitated by a low level of corruption and the absence of excessive regulation.

How should the government aid the formalization of property? When squatters occupy a piece of land they arrive at private agreements as to how the land is to be divided and used. Government laws in developing countries often run counter to these agreements. What is required is that the government should pass laws that mimic these agreements so as to facilitate formalization. This was done in 19th Century America. Migrants to the U.S. settled on vacant lands without government permission and established squatter colonies. In order to maintain peace and order they invented their own species of extralegal property rights such as “tomahawk rights”, “cabin rights” and “corn rights”. Tomahawk rights could be acquired by a person who had improved the land. These were displayed by deadening a few trees near the head of a spring and marking the bark of one or more trees with the initials of the person who made the improvement. Cabin rights or corn rights could be acquired by raising a crop or building a log cabin. These extralegal rights could be bought sold and transferred just like official rights. The squatters fought many a battle with the government, which was officially opposed, to their illegal occupation of land. In their struggles they were supported by politicians who genuinely sympathised with them or wanted to use them to meet their political ends. The long and bitter struggle culminated with the General Preemption Act of 1930 and its subsequent refinements. Land, which had been

improved by the squatter, was to be provided at a nominal rate (\$ 1.25 per acre) to him. Only if he refused to purchase the land was a public auction to be conducted. Note that the Act mimicked the “Tomahawk rights”, “cabin rights” or “corn rights”.

Politicians and legislators in developing countries should try to acquire a knowledge of the informal property rights in operation in colonies of squatters and holders of property (which is not officially recognized as belonging to them). They should know how these rights are acquired and protected. Official laws should then be passed which try to mimic these informal property rights to the extent possible.

Other road blocks to formality

Acquiring formal property rights over the land on which they operate do not assure individuals of the tag of formality in business. A large number of other steps have to be obtained before an entrepreneur can enter the formal sector.

Entrepreneurs operating in the informal sector view the costs of entering the formal sector as prohibitive. A large numbers of procedures have to be gone through and permits obtained for entry into the informal sector. These require direct costs to be borne in the form of fees and bribes and indirect costs in terms of time. The time red tape costs are illustrated by the following example (Al Ahram Weekly, 2000)

Ahmed Abdel-Latif, a 24-year-old university graduate who lives in Heliopolis decided to put his savings in a private business and he chose to operate in a garage.

Abdel-Latif who opted for private business rather than standing in long queues waiting for a vacancy in a state body, was even more frustrated by the long procedures to obtain the long authorization to operate the garage. The long process involves obtaining permits and going through red tape in eight government departments. The lengthy process took him 223 days during which he made 77 visits to government offices and received government officers from the Environmental Affairs Agency, health ministry departments, civil defense department and other government offices.

Abdel Latif points out with an informal calculation of the time red tape costs, he has lost around LE 9000, a very high figure if compared to the total capital of LE 5,500 he has put up as capital in the project.

Abdel Latif's cost is just one of thousands that take place every day in Egypt and that ultimately lead people searching to make new business to prefer to go illegal and join the informal sector than go through all the lengthy procedures and costly steps of formalizing their business or their property holdings.

In the above example we just talked explicitly about the time costs of entry into the formal sector. Regulation or the need for obtaining government approvals or permits also provides scope for corruption. Many people are unable to pay the bribes resulting from such corruption.

The table in Appendix A provides data on informality (defined as the proportion of employment provided by the informal sector), the average number of procedures for entry into the informal sector and the Transparency international Index of corruption. The TI index of corruption ranges from zero (most corrupt) to ten (least corrupt). It is called the Corruption Perceptions Index (CPI). The degree of informality in Azerbaijan is 50.7%, the number of procedures is 15 and the corruption index is 1.7. Czech Republic has a much smaller informal sector which could possibly be attributed to its lower number of procedures (10) and a much cleaner government (TI index of 4.6). However, mere speculation or intuition is not enough. In the next sub-section we construct a theoretical model which looks at the impact of corruption and regulation on the size of the informal sector. This also helps us to develop insights that would not be possible through verbal analysis. In the following sub-section we check the validity and significance of the theoretical results through regression analysis.

A. A Theoretical model

Why would somebody desire to enter the formal sector instead of the informal sector when people in the formal sector have to pay taxes and those in the informal sector do not? This is because it is mostly the formal sector which has access to government and private sector services: credit, infrastructure services, trade fairs, employee training e.t .c. The informal sector has no recourse to the law and justice system to enforce contracts and defend their property rights. Employees in the informal sector do not have a safety net in the form of employee insurance and pension systems.

By classifying a particular enterprise as formal the government also gives it its seal of approval. This seal of approval is a great advantage in negotiating contracts. Below I describe a model of entry into the formal sector with specific consideration given to the roadblocks presented by the involved government servants.

Assumptions of the model

- 1) There are N identical entrepreneurs in the economy.
- 2) Each entrepreneur has two options – to enter the informal sector or the formal sector.
- 3) Entry into the formal sector requires r permits, each issued by a government official. No requirement has to be met for entering the informal sector.
- 4) The proportion of government officials that are corrupt is c .
- 5) The sample of government officials met by any potential entrant into the informal sector is representative of the entire population of government officials. Thus, the proportion of corrupt government officials in the sample is also c .

Deriving the demand curve for entry into the formal sector

Let n denote the number of entrepreneurs that enter the formal sector. Then $N-n$ denotes the total number of entrepreneurs that enter the informal sector.

Let $\pi(n)$ denoted the maximized profit of an entrepreneur in the formal sector. Assuming that the law of demand applies and the marginal cost of production in the formal sector is

lower than that in the informal sector at all levels of output, it can be shown that the profit is decreasing in n for an oligopoly (see appendix for proof). Let $\Phi(N-n)$ denote the profit of an entrepreneur in the informal sector. It can be shown that Φ is decreasing in $N-n$ under the same assumptions as above. The proof is exactly similar to that for $\pi(n)$.

The difference in profits between an entrepreneur in the formal sector and its counterpart in the informal sector is given by

$$D(n) = \pi(n) - \Phi(N - n)$$

Let $\pi'(n)$ denote the derivative of π with respect to n and Φ' denote the derivative of Φ with respect to $N-n$. The derivative of the profit differential is given by

$$D'(n) = \pi' + \Phi' < 0$$

Given the price of entry firms will enter the sector as long as the profit differential is greater than the price of entry. Given that $D(n)$ is decreasing in n , it follows that in equilibrium

$$D(n) = p$$

where p is the price of entry. Since we can read off the number of entrepreneurs entering the formal sector from this equation given the price of entry this equation is the inverse demand curve for entry into the formal sector. And given the fact that $D(n)$ is decreasing in n we can say that lower the price of entry greater the number of firms entering the formal sector. Thus, the demand curve for entry into the formal sector is downward sloping.

Corruption, regulation and size of the informal sector

Given the number of regulations, the number of corrupt bureaucrats that the entrepreneur encounters in seeking the necessary permits is rc . The marginal revenue curve corresponding to the demand curve for entry into the formal sector is also downward sloping. Let this be denoted by $MR(n)$. For the corrupt bureaucrat the marginal revenue

curve that he faces is $MR(n)/rc$. If $C(n)$ is his cost of providing permits then the number of permits provided by him and therefore the number of firms entering the formal sector would be

$$\frac{MR(n)}{rc} = C'(n)$$

that is the bureaucrat's marginal revenue is equated to his marginal cost. If either r or c increases the bureaucrat's marginal revenue curve shifts to the left (see figure where the marginal revenue curve shifts from MR/rc_1 to MR/rc_2). This leads to a decrease in n or the number of firms entering the formal sector. That is, an increase in the degree of corruption or regulation leads to a larger informal sector.

Empirical Analysis

We now examine whether the empirical influence of regulation and corruption on informality is significant and consistent with our theoretical model. Corruption is measured by the corruption perception index (CPI) and regulation is measured by the average number of procedures needed to register a business. The CPI varies from 0 to 10 and is decreasing in the level of corruption. First we look at the partial correlation coefficients.

Figure: Formal Sector Size under Different Levels of Corruption

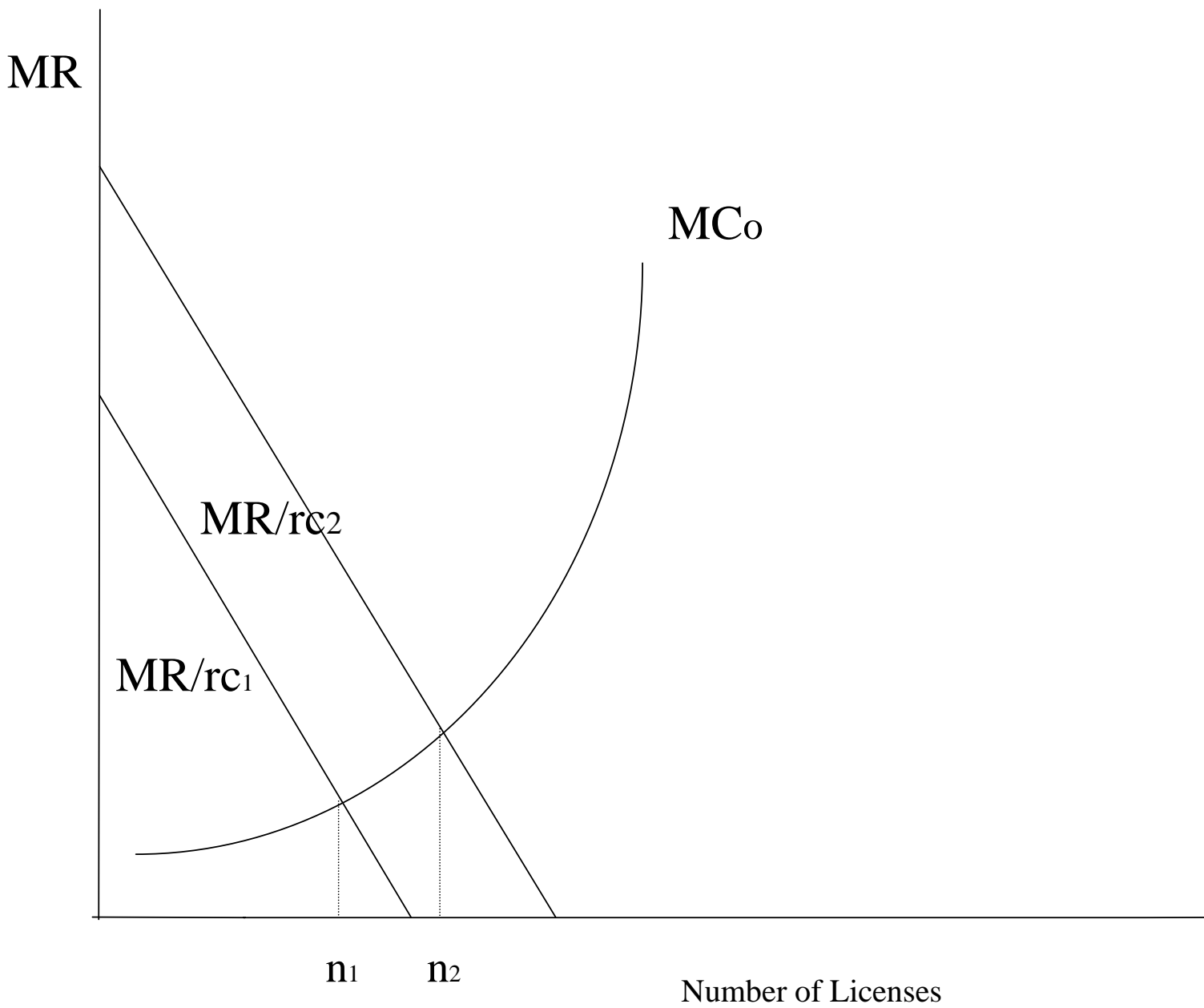


Table 1: Partial Correlation Coefficients

	Informality	Procedures	CPI
Informality		0.44	-0.64
Procedures			-.2496
CPI			

Our results imply that informality is positively correlated with the number of procedures (extent of regulation) and the degree of corruption. (Observe the negative correlation with the CPI, which is an inverse measure of corruption.). This is quite consistent with the results of our theoretical model.. However, we get some additional insights. Further the number of procedures (extent of regulation) is negatively correlated with the CPI and therefore positively correlated with the level of corruption. The logic is simple. Regulation provides bureaucrats opportunities for corruption. Lower the level of regulation, lower the opportunities for corruption. This is the direct effect. Further, lower the opportunities for corruption, lower is the incentive for corrupt people to enter the government service. This further improves the integrity of government servants. This is the indirect effect of deregulation on corruption and it takes place through a signaling mechanism.

We now look at the results of a regression of informality on (a) the numbers of procedures and (b) CPI. The regression results are summarized in the table given below.

Table 2: Regression Results

Statistics

R-square: 0.50

Adjusted R-square: 0.43

Number of observations: 19

Dependant Variable: Informality (proportion of employment provided by the informal sector)

Variable	Coefficient	t statistic
Procedures	1.02	1.68*
CPI	-5.89	-3.1**

Note: * denotes significance at 12 % level and ** at 1% level.

The results are extremely encouraging. The number of procedures has a significant positive effect on informality. A reduction in the number of procedures by 1 results in a decrease in the level of informality by 1.02%. Consider an economy like Belarus, which has a level of informality of around 40% and 20 procedures. If Belarus were to reduce its level of procedures to that of Hungary (7) then its informality would be reduced to 27%. Now consider the results for CPI. CPI has a negative and extremely significant effect on informality. In other words corruption has a positive and significant effect on informality. The results imply that an increase in CPI by one reduces informality by 5.89%. In other words, India which has a level of informality of 90% and a CPI of 2.7 would see informality fall to 61% if the CPI is raised to 7.7, the level of Hong Kong. This is far below the level of 9 and above enjoyed by some of the Western countries. Continuing with our Belarus story,

if it supplemented the reduction of procedures to 7 with an increase in CPI by 4 points (3.4 to 7.4) then it would reduce informality to the level of 3%.

III. The Indian Case

We now apply our findings in Section II to the Indian case. What is the extent of informal property in India? To my knowledge no survey has been conducted to assess the magnitude of informal property in India. But dribblets of information seem to suggest that a large amount of land, residential and business property is informally/illegally held:

- a) 15 to 25 percent tenancies in the country are illegal and concealed (Deshpande).
- b) Estimates of illegal encroachment upon private and public land run into thousands of acres across the country (Agrawal,2002)
- c) In Bombay there are 32,000 families living in illegal hutments close to the railway lines just because of a lack of an alternative place to live (Marquand, 2000). The Borivali National Park has around 70,000 illegal worker dwellings. Given that 55 percent of Bombay's thirteen million populations lives in slums (many of which are illegal), even if we assume that only half of them are squatters then we arrive at a figure of 3.5 million living in illegal dwellings. In 2000 tens of thousands of huts were bulldozed. According to reliable estimates the average equity lost when a hut is bulldozed is 1100 dollars (55, 000 rupees). If in a year ten thousand huts are bulldozed a total of 55 crores in equity is destroyed in the city of Bombay alone. In Delhi around 30% (which is a conservative estimate) of the population has only informal rights over the land which they inhabit. (Figure derived from proceedings of the seminar on "Sustainable Development of Delhi", 2003.) How can this woeful state of affairs be changed?

The answer is twofold:

- a) Legalize informal property in places where they do not pose a nuisance to public life and a threat to the lives of dwellers themselves. In allocating formal property rights the system

of informal property rights already in place should be mimicked so as to minimize displacement.

- b) In places where the above stated conditions for formalization are not met, resettlement policies (as advocated by the World Bank) with suitable resettlement policies should be avoided.

Combating Corruption

Our theoretical model has established that corruption is an important factor that encourages informality? What then can be done to tackle the corruption problem? One approach is to try to solve the signalling problem that attracts corrupt people to government service. A reduction in regulation reduces the potential opportunities for corruption in government. The consequence is that many corrupt people will no longer be attracted to government service. The second signalling problem is corruption at the entry points of the government service. People often have to pay hefty amounts to get a job (as illustrated by the Punjab Public Service Commission Scandal). Often this implies that debts have to be incurred which have to be paid back through corrupt practices (N. Narayanaswamy et. al, 2000). Again this implies that potentially corrupt applicants enter the government service. Thus, it is very necessary that the officials who determine entry into the government service are clean. This can be done by careful scrutiny of their records before choosing them and having monitoring mechanisms in place. Ensuring that the entry points into the government service are clean will lower the level of corruption in the entire government service. It is also more cost effective than the method of policing all government servants.

A Transparency International report says that the cause of corruption in India is definitely not the low salary of government officials. Rather it is the lack of effective deterrence in the form of punishment. Sondhi (2000) says that the corrupt are rarely caught and even if caught are let off with minor penalties. The inordinate delays in corruption cases imply that punishment is often never meted out. The conviction rate in Indian courts is 6%.

There are three crore cases pending in the Indian courts and average time taken for disposal of cases varies from 10 to 20 years.

Another reason for lack of effective punishment in corruption cases is that in the initial stages it is the government officials themselves who decide whether the corruption case against their fellow government officials will be pursued or not. Solidarity among government officials ensures that these cases are often dropped.

In order to ensure effective punishment in corruption cases judicial judgements should be speeded up and the initial groundwork in assessing a corruption case should be done by an independent body.

The development of civil society can act as an effective tool against corruption. Civil society is considered as the realm of association between the government and the state and consists of professional organizations, formal and informal non-profit associations. They are a useful means for aggregating societal interests, ensuring social participation in state governance and the promotion of democratic values. They can help in combating corruption by creating pressure for improved governance, exposing corruption and monitoring the state's actions for fighting corruption and abuse.

Box 1: Suggested Measures for Reducing Corruption in India

- Reduce Regulation
- Make entry points into the government service clean
- Resolution of corruption cases by independent body
- Speeding up judicial judgements
- Encouraging civil society
- Increasing the use of e-governance

One of the major contributions of the civil society is to create public awareness about corruption. Bhatia and Dreze (1998) describe one such attempt by a civil organization called Mazdoor Kisan Shakti Sangsthan (MKSS) to expose corruption in rural Rajasthan. In one day in a public hearing in Surajpara village corruption worth Rs 5 lakhs was exposed. The hearing was marked by its constructive and orderly tone. Some of the officials involved in the corruption cases accepted blame. There were even some who promised to refund the corruption proceeds. This public hearing by MKSS highlights the important role that the civil society can play in combating corruption.

The role of the civil society is just not restricted to organizing public hearings. For example, the Public Affairs Centre in Bangalore has developed the “Report Card Methodology” to track down and expose corruption in public services. This methodology provides a report on the state of corruption in various sectors of government at regular intervals. Each survey is followed by extensive dissemination and discussion. Transparency International India has played a significant role in fighting corruption through Gandhian methods of non-violent mass mobilization.

Our interest is in combating corruption at the entry points to the formal sector. The success of civil society organizations in exposing and checking corruption in other fields implies that they can be useful in checking corruption in the provision of licenses and permits for formal businesses. Civil society organizations in India are at the moment scattered and not linked by a network. An increase in the number of civil society organizations and good networking by them is desirable. Worldwide organizations like Transparency International can help in this regard.

Another new method of reducing corruption is e-governance. Under e-governance people can get their forms cleared or permits issued on the internet and the chance of suffering at the hands of corrupt government officials can be reduced. It would also mean that project proposals of applicants to the formal sector would be displayed in a web-site.

Any corruption or abuse can therefore be detected. E-governance has had outstanding success in a village called Bellandur in Karnataka. Computerization has reportedly reduced corruption and reduced delays. Revenue loopholes have been plugged as all the records are available at the click of a button. People are getting their land registered in record time. While we are interested in eliminating corruption at the entry points to the formal sector the success of Bellandur's experience with e-governance implies that such methods can be used in determining the entry of firms into the formal sector.

Another contribution of e-governance is making the Central Vigilance Commission more accessible to the public. The development and use of an interactive web-site is a step in the right direction. The interaction between the network of civil society organizations and the NGO could be an important mechanism for detecting and punishing corruption.

Regular surveys and estimates of corruption are an important input into programmes for combating corruption. An approach in this regard has been developed by Kaufmann, Pradhan and Rytermann of the World Bank (1998). The methodology consists of directly surveying customers of public services to obtain estimates of bribery in various government departments. The social and economic costs of corruption in each department are then computed. A priority list of departments for the reduction of corruption is constructed. For the problem of concern in our paper, an estimate of bribery by the Industries Centres can be made by surveying the people who have applied for starting a formal business in the recent past. This would enable to construct a priority list of regions for tackling the problem of corruption.

Case study of registration of small businesses in India

We now look at the procedures involved in starting a small formal business in India. This will throw some light on the existing road blocks to formalization given that people in the informal sector mostly endeavour to enter the small formal sector. Small formal businesses are selected because they are potential absorbers of previously informal entrepreneurs and

work force. This case study is based on a note by Indian Institute of Technology, Kanpur and Small Industries Development Bank of India (2003). A small scale industry is defined as one in which the investment in plant and machinery is less than one crore. When investment is less than Rs 25 lakhs it qualifies as a “Tiny Sector” SSI. An industry can be started by the entrepreneur at either his own place/ own shed or rented place/ rented shed. This suggests that formally held residential property can be used to start SSIs. Thus, formalization of residential land and residential property discussed above can give an impetus to industrialization. An industry can also be located at an industrial estate.

The procedures involved in setting up a small scale industry are as follows:

- a) Issue of a provisional registration certificate (PRC) by the District or Tehsil Industries Sector: In order to get a PRC the following information has to be provided in the form of a short project report: background of the entrepreneur, plant and machinery to be bought and its value. Details of where the product would sell and at what price and sources of funds have to be included.
- b) Permission of local authority to set up the industry
- c) Trade License
- d) Power Sanction
- e) Pollution clearance
- f) Clearance of inspector of Boilers
- g) Registration of Commercial taxes
- h) Permanent Registration Certificate (PMT): Having set up the unit and achieved trial production the entrepreneur has to get the PMT. In order to get the PMT copies of all the clearances stated above along with a lease/rental agreement and affidavit are required.

There might be some procedures that are not listed by the study. However, the number of listed procedures is 8 that compares quite favourably with those required in the transition economies where Hungary has the minimum of seven procedures. There is,

however, a room for reduction of procedures. The local body should respect the PRC so that procedure (b) can be done away with. Pollution clearance and clearance of inspector of boilers can be merged into one. Once the PRC is issued there should be no need for applying afresh for a power sanction and a trade license. The information provided for the power sanction and trade license could be included in the application for PRC.

Thus, the number of procedures can be reduced by 4. Given the results of the empirical study this implies that the level of informality reduces by 4 percentage points. The requirement that a rental/lease agreement has to be produced for the issue of a PMT stresses the importance of formalization of property. However, a reduction by four percentage points is totally inadequate for India where the level of informality is around 90%. Thus, it seems that reduction of corruption and formalization of property rights should be the main vehicles of formalization of business in India.

IV. Conclusion

A large informal sector is often considered a drawback in an economy. The productivity of the informal sector is mostly much lower than that of the formal sector. In India formal productivity is six times that of informal productivity. Therefore, formalization (conversion of parts of the informal sector into formal production units) can increase the level of national product as well as speed up the rate of economic growth. There are other reasons why a large informal sector may not be desirable. The informal sector often competes with the formal sector both in terms of business activity and space. Informal units in many sectors are heavily polluting and are a major health hazard. The impact of globalization and liberalization gets diluted in the presence of a large informal sector as this sector is virtually untouched by these policies. The success of democratic institutions and policy making gets hindered in the presence of a large informal sector.

One way to reduce the size of the informal sector is through physical controls- banning certain kinds of informal activity or limiting their area of operation. For example, the government might ban street vending in a city or limit the areas in which cycle rickshaws operate. Banning certain types of informal activity will not usually result in a smaller overall size of the informal sector. The banned workers usually take recourse to lower productivity occupations because of high return migration costs and stagnation of economic activity in their native villages. These villages therefore cannot accommodate them. Limiting the sphere of certain types of informal activity actually hinders the process of natural formalization. The workers who are so restricted experience a decline in their wage. Any decline in wage results in a decline in remittance income. Because much of the remittance income is used for agricultural improvement a decline in remittances will result in a decline in agricultural growth. This implies that families of migrants who find work in the informal sector might be dependent on remittances for a longer period of time. This tendency hurts of formalization which might result from the process of natural accumulation of savings and human capital formation.

Given that physical controls might not be successful in limiting the size of the informal sector this paper suggests certain measures for formalization. It is seen that an increase in the level of regulation (and therefore the number of regulating bureaucrats that the potential entrant into the formal sector has to tackle) and the degree of corruption leads to an increase in the number of claimants for bribes for entry into the formal sector. For a given willingness to pay an increase in the number of claimants would mean smaller bribe income for each claimant. Because of this fact the number of entrants into the formal sector is restricted.

Our empirical analysis shows that corruption and regulation are indeed significant determinants of informal sector size. An increase in the Corruption Perception Index (CPI) by one point (which results in a cleaner bureaucracy) reduces informality (the share of the

informal sector in total employment) by 5.89%. Similarly, a decline in the number of procedures by one reduces informality by 1.02%.

A reduction in the extent of regulation/ procedures requires legislative changes. As seen in the case study on small scale industries in India the number of procedures is already quite small. A reduction by 4 procedures is possible which will reduce informality by 4%. However, the level of corruption is very high. If it is raised from its current level of 2.7 to 7.7 (the level of Hong Kong) then our empirical analysis predicts that the level of informality will decline by as much as 29%. Thus it seems that alleviation of corruption might be more important than further deregulation in India in the context of formalization.

Several methods have been recommended in the literature for reducing corruption. This paper suggests a few methods that are suitable for India. One is to ensure that the people manning the entry points into government service are clean. This is a good signal for clean people to enter government service as they do not have to pay bribes, which have to be recovered later through corrupt bureaucratic action. Setting up an independent body (which is not influenced by bureaucrats) to pursue corruption cases is another suggestion. Speedy resolution of corruption cases can also act as a deterrent. The development of civil society can serve as an effective tool against corruption. The civil society can help in combating corruption by creating pressure for improved governance, exposing corruption and monitoring the state's actions for fighting corruption and abuse. Finally, e-governance can reduce the chances of applicants to the formal sector suffering at the hands of bureaucrats by introducing transparency and reducing bureaucratic discretion.

While it might be necessary to reduce corruption and regulation to promote formalization, a necessary condition for entry into the formal sector is the possession of formal property rights. Anecdotal evidence suggests that much of the population is tied to their property by just informal property rights. The lack of formal property rights is a stumbling block to entry into the formal production sector. The formalization of property rights is a major

challenge before the government and has to take place if we are to bring about a major increase in the size of the Indian formal economy. A significant lesson is to be learnt from the United States where formal property rights were given by mimicking informal property rights.

Box 2: Recommended methods for formalization

- Decrease regulation through legislative changes
- Reduce Corruption (see Box 1)
- Formalization of property rights

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Appendix A

Table: Informality, procedures and corruption

	Informality	Procedures	Corruption
Armenia	40.3	11	2.5
Azerbaijan	50.7	15	1.7
Belarus	40.9	20	3.4
Bulgaria	30.4	10	3.3
Croatia	27.4	13	2.7
Czech Rep	12.6	10	4.6
Georgia	53.2	12	2.3
Kazakhstan	20.9	12	2.3
Kyrgyzstan	33.6	9	2.2
Latvia	29.4	7	3.4
Lithuania	29.6	11	3.8
Moldavia	35.1	11	2.6
Poland	20.9	11	4.2
Romania	24.3	11	3.3
Russia	40.9	18	2.4
Slovakia	16.3	11	3.7
Slovenia	21.6	8	6
Ukraine	41.2	13	2.6
Uzbekistan	33.2	7	1.8

Source: Informal Economy Round Table, Sofia (2002).

Note: Data on informality and corruption is for 1999. Data on procedures is current data.

Appendix B

Proposition: Assume that the law of demand applies and that all firms in the formal (informal) sector are identical. Further, assume that the marginal cost of production in the formal sector is lower than that in the informal sector at all levels of output. Then, the maximized profit of a typical firm in the formal sector is decreasing in the number of firms in that sector.

Proof: The profit of a typical firm i in the formal sector is given by

$$\pi_i = P(Q)q_i - c(q_i) \quad (i)$$

where Q is the total industry output, P denotes price of output and q_i denotes output of firm i . By the law of demand, $P'(Q)$ is negative. Firm i chooses output q_i to maximize profits. Because all firms in the formal sector are assumed to be identical, q^* can denote the profit maximizing quantity of any firm in the formal sector where the total output is $Q = [nq^* + (N - n)\hat{q}]$ and \hat{q} is the profit maximizing output in the informal sector. The first order condition can therefore be expressed as

$$P'(Q)q^* + P(Q) - c'(q^*) = 0. \quad (ii)$$

Differentiating equation (ii) with respect to n yields

$$P''(Q)q^* \frac{dQ}{dn} + P'(Q) \frac{dq^*}{dn} + P'(Q) \frac{dQ}{dn} - c''(q^*) \frac{dq^*}{dn} = 0. \quad (iii)$$

Equation (iii) can be rearranged to yield

$$[P''(Q)q^* + P'(Q)] \frac{dQ}{dn} = [c''(q^*) - P'(Q)] \frac{dq^*}{dn}. \quad (iv)$$

If $P''(Q)$ is negative then the term in square brackets on the left hand side is negative. To determine the sign of this term when $P''(Q)$ is positive, note that the total revenue of the entire industry is given by

$$TR=P(Q)Q \quad (v)$$

and marginal revenue is

$$MR = \frac{d(TR)}{dQ} = P'(Q)Q + P(Q). \quad (vi)$$

The derivative of marginal revenue with respect to Q is given by

$$\frac{d(MR)}{dQ} = 2 \left[\frac{P''(Q)Q}{2} + P'(Q) \right]. \quad (vii)$$

It is a well-known result that $d(MR)/dQ$ is negative. Therefore, the term in brackets in equation (vii) is also negative. For positive $P''(Q)$, both $P''(Q)Q/2$ and $P''(Q)q^*$ are positive. Moreover, $P''(Q)Q/2$ is larger in magnitude than $P''(Q)q^*$ for $n \geq 2$. Given that the term in brackets in (vii) is negative it follows that $P''(Q)q^* + P'(Q)$ is also negative.

To summarize, $P''(Q)q^* + P'(Q)$ is negative irrespective of the sign of $P''(Q)$. Because the term in brackets in the right hand side of (iv) is positive, it follows that dq^*/dn and dQ/dn are of opposite signs.

Given that the marginal cost of production in the formal sector is lower than in the informal sector at all quantities, it follows that \hat{q} is less than q^* . The proof that $d\hat{q}/dn$ and dQ/dn are of opposite signs is exactly similar to the proof that dq^*/dn and dQ/dn are of opposite signs.

Given that the signs of both $d\hat{q}/dn$ and dq^*/dn are opposite to the sign of dQ/dn , it can be inferred that $d\hat{q}/dn$ and dq^*/dn are of the same sign. Differentiating $Q = nq^* + (N - n)\hat{q}$ with respect to n yields

$$\frac{dQ}{dn} = (q^* - \hat{q}) + n \frac{dq^*}{dn} + (N - n) \frac{d\hat{q}}{dn}. \quad (viii)$$

If $d\hat{q}/dn$ and dq^*/dn are of positive sign then by (viii) dQ/dn is also positive. However, this contradicts the finding that the signs of $d\hat{q}/dn$ and dq^*/dn are opposite to the sign of dQ/dn .

Let us now examine the possibility that at least one out of $d\hat{q}/dn$, dq^*/dn and dQ/dn is equal to zero. From (iv) if dq^*/dn is zero then dQ/dn is zero and vice-versa. Similarly, if $d\hat{q}/dn$ is zero then dQ/dn is zero and vice-versa. Thus, if one out of $d\hat{q}/dn$, dq^*/dn and dQ/dn is equal to zero then all three are zero. However, this finding and equation (viii) implies that $(q^* - \hat{q})$ is zero when at least one out of $d\hat{q}/dn$, dq^*/dn and dQ/dn is zero. This contradicts our earlier finding that $(q^* - \hat{q})$ is positive. Thus, the case that at least one out of $d\hat{q}/dn$, dq^*/dn and dQ/dn is zero is ruled out.

Given three facts, (i) $d\hat{q}/dn$ and dq^*/dn have the same sign, which is opposite to the sign of dQ/dn , (ii) the case that at least one out of $d\hat{q}/dn$, dq^*/dn and dQ/dn is zero is ruled out and (iii) the case that $d\hat{q}/dn$ and dq^*/dn are of positive sign is ruled out, it follows that both $d\hat{q}/dn$ and dq^*/dn have negative signs and dQ/dn has a positive sign.

The maximized profit of a firm in the formal sector is given by

$$\pi^* = P(Q)q^* - c(q^*). \quad (ix)$$

The derivative of π^* with respect to n is given by

$$\frac{d\pi^*}{dn} = P'(Q)q^* \frac{dQ}{dn} + P(Q) \frac{dq^*}{dn} - c'(q^*) \frac{dq^*}{dn}. \quad (x)$$

Adding and subtracting $P'(Q)q^*(dq^*/dn)$ from the right hand side of (x) and rearranging yields

$$\frac{d\pi^*}{dn} = P'(Q)q^* \left[\frac{dQ}{dn} - \frac{dq^*}{dn} \right] + \left[P'(Q) \frac{dq^*}{dn} q^* + P(Q) \frac{dq^*}{dn} - c'(q^*) \frac{dq^*}{dn} \right]. \quad (xi)$$

The second term in square brackets vanishes because of the first order condition in equation (ii). Thus,

$$\frac{d\pi^*}{dn} = P'(Q)q^* \left[\frac{dQ}{dn} - \frac{dq^*}{dn} \right]. \quad (xii)$$

Here, $P'(Q)$ and dq^/dn are negative whereas dQ/dn is positive. Therefore, $d\pi^*/dn$ is negative. In other words, the maximized profit of a typical firm in the formal sector is decreasing in the number of firms in that sector.*