Regulation and Informality

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Background

- The definition of informal activities can be both varied and quite specific.
- populist interpretation in terms of activities that are illegal, or at least extra-legal often amounting to criminal activities, highlighting tax evasion and/or undocumented production-employment relations
- In a broader context unregistered firms escaping tax payments, labour regulations, and environmental strictures or indulging deliberately in unrecorded activities, are treated as operating in informal sector

Literature

- Hernando De Soto (2000) and Avinash Dixit (2004) set the stage for such discussion

- Two recent studies by Marjit, Mukherjee and Kolmar (2006) and Dasgupta and Marjit (2006) provide political rational on the part of the state to perpetuate informal arrangements.

- For economies characterized by high unemployment, high inequality and poverty, the government may choose a lower level of 'good' governance

- The extra legal occupations work as substitutes for social security and emerge as an innovative and effective re-distributive strategy

Lack of regulation

○ Dasgupta and Marjit (2006) -- given both unionised labour and informal workers, the state may undermine strength of trade unions and stealthily promote culture of informal sector to push forward liberal policies

○ Marjit, Ghosh and Biswas (2007) shows that tariff reduction and capital market reform (lower interest rates) may have conflicting effects on the size of the informal sector (Colombia and Brazil, cases which are opposite and left unexplained in Pavcnik and Goldberg, 2003)

○ Non-adherence to labor laws – state level amendments of Industrial Disputes Act of India (1947) – major instrument categorizing pro-employer/pro-worker states – Besley and Burgess (2004).

○ Still does not explain high incidence of unorganized activities in Andhra Pradesh and Tamil Nadu (pro-employer) AND does not explain high formal industrial and service sector growth in Maharashtra and Gujarat (pro-worker).

○ West Bengal fits IDA description quite well. So, are there competing explanations?
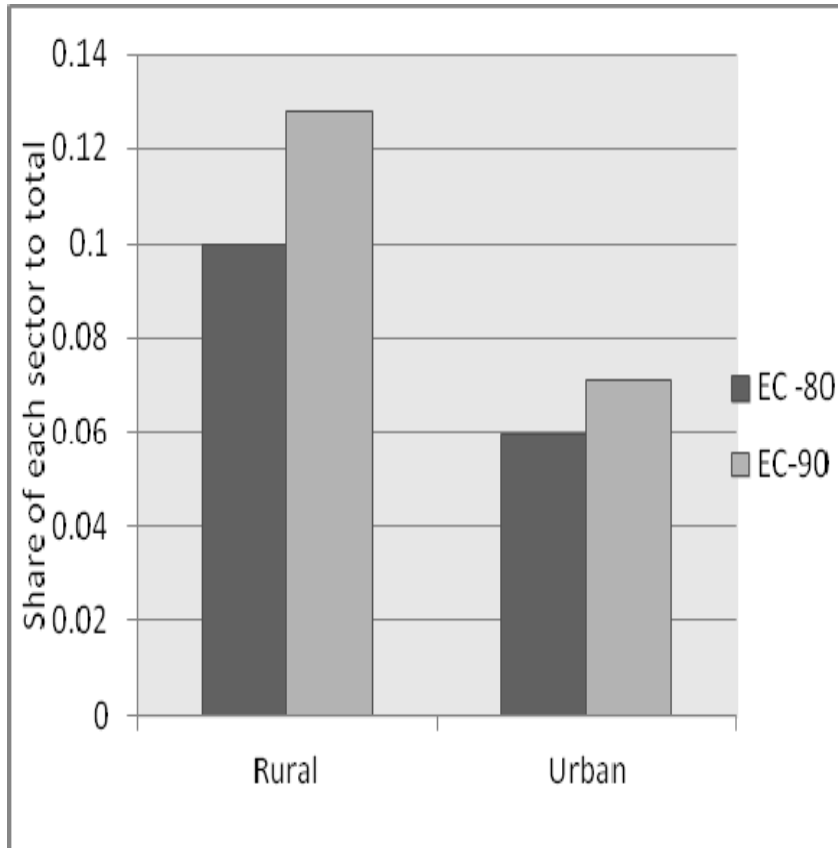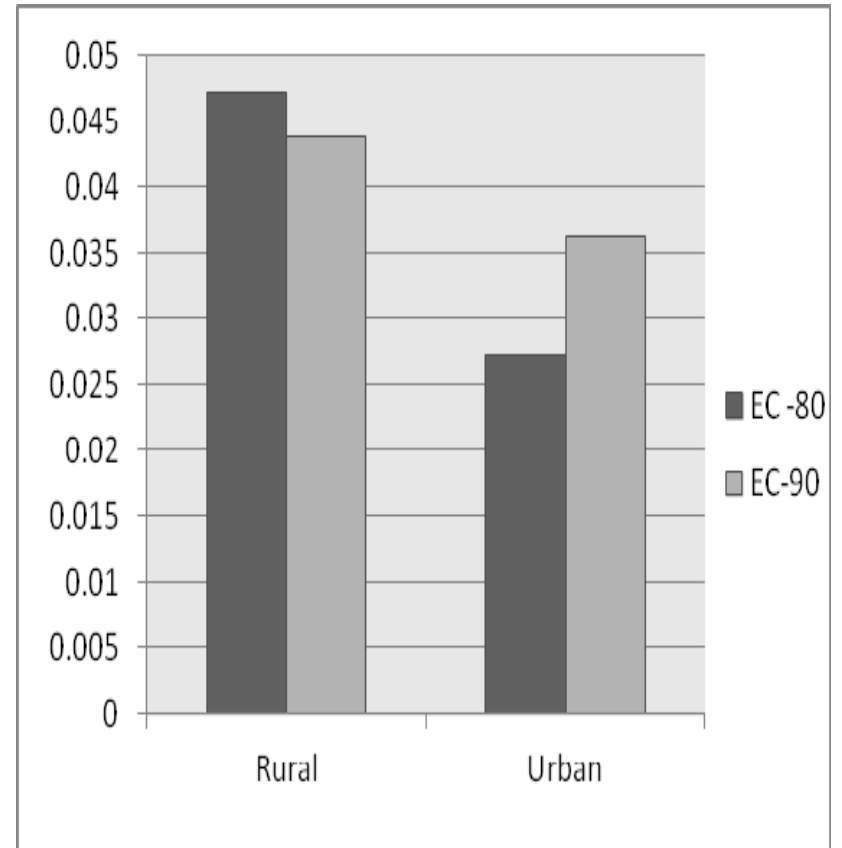
State-wise Comparisons
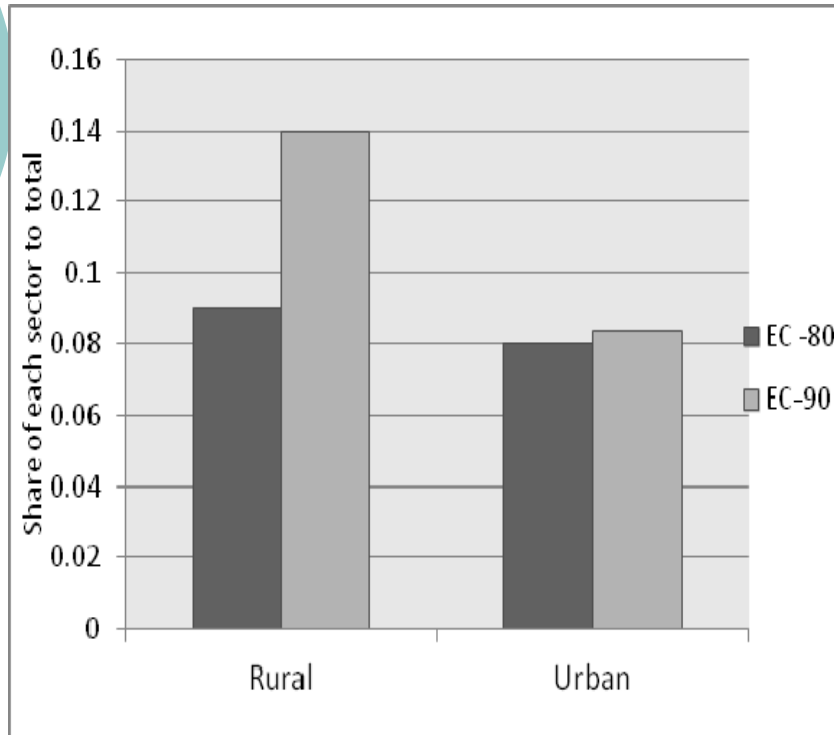
West Bengal
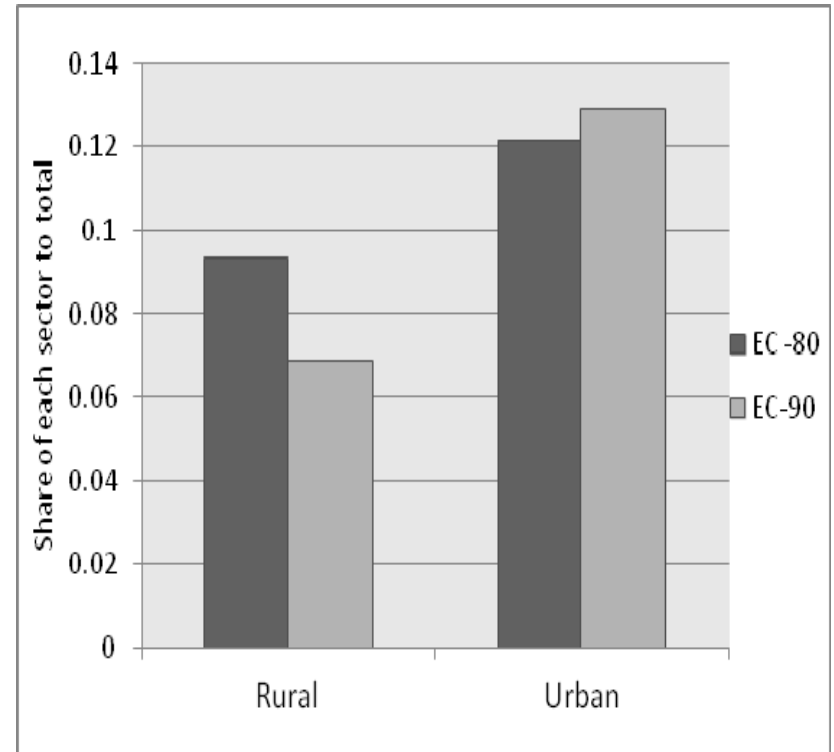
Maharashtra

Share of Unorganized Manufacturing Enterprises to Total (India) Unorganized Manufacturing Enterprises in four states of India in 1980 and 1990

States…..

Andhra Pradesh

Kerala

New Questions and Data Sources

- Could corruption at the state level explain poor regulatory activities and hence proliferation of Informality?

- Dependent variable, level of employment in the informal sector, is taken from the Ministry of Statistics and Program Implementation (MOSPI)'s National Data Warehouse of Official Statistics

- Publication titled "Informal Sector and Conditions of Employment in India", 2004-05

- Comparable with Transparency International (2004)

- largest survey study on corruption level across states. It includes 14,405 respondents spread over 151 cities and 306 villages of 20 states

- The data on state domestic product (SDP) is taken from the Central Statistic Organization (CSO, GoI)

Econometrics

○ Econometric specification

$$Informal_i = \alpha_1 + \alpha_2 Corruption_i + \alpha_3 SDP_i + \alpha_4 SDP_i^2 + \alpha_5 Inter_i + \varepsilon_i$$

○ $Inter_i$ is the interactive impact of corruption and SDP on the level of employment in the informal sector

○ In order to fully understand the impact of corruption on the informal sector, we need to consider the following partial derivative

$$\frac{\delta Informal_i}{\delta Corruption_i} = \alpha_2 + \alpha_5 SDP_i$$

Model and Results

○ It is possible to define a threshold level of SDP* for

$$\frac{\delta Informal_i}{\delta Corruption_i} = 0$$

○ SDP and Informality show a concave relationship

○ $SDP* = $ INR 65814 at the state level

○ Taking the average levels of SDP and corruption for our sample $\frac{\delta Informal_i}{\delta SDP_i} \approx 0.01$

○ This implies that an unit rise in SDP leads to an increase in the size of the informal sector by 0.01 unit

Analysis

- Novelty of the result lies in the fact that for a given level of corruption, a rising SDP holds the key to a shrinking informal sector in the economy

- <u>Endogeneity Issues</u>

- Corruption is an important determinant of the size of the informal sector in each state. But, it is also plausible that the presence of informal sector generates corruption in a state

- To overcome this problem we run Two Stage Least Square (2SLS) specifications – using both IV and GMM approaches

- With IV as *literacy levels* and *population data* for the period 2000-01 across states

Results

- That Corruption at the state level leads to emergence and sustainability of informal activities is robust for all specifications (also after addressing endogeneity)
- Sector-wise analysis conducted
- Corruption in sectors like Municipal services, PDS/ Ration and Government Hospitals, lead to a larger informal sector
- To our knowledge, this is the first empirical investigation on the corruption-informality linkage on India
- Results show that a higher level of corruption leads to a larger informal sector and account for a high level of employment
- Also verifies and turns around previously unaccounted for explanations on state characteristics (such as implementation of labor laws and industrial laws) and the existence of informal sector in India

Tables

Independent Variables	(1) Rural + Urban	(2) Urban	(3) Rural
Corruption	0.283*	0.562***	0.207
	(0.153)	(0.179)	(0.174)
SDP	0.00605***	0.00836***	0.00598***
	(0.00154)	(0.00218)	(0.00169)
SDP sq	-1.67e-08***	-1.79e-08***	-1.89e-08***
	(2.75e-09)	(3.56e-09)	(2.88e-09)
SDP*Corruption	-4.30e-06	-8.27e-06**	-3.10e-06
	(2.77e-06)	(3.58e-06)	(2.94e-06)
Constant	444.7***	233.0**	499.8***
	(82.09)	(98.85)	(99.03)
Observations	20	20	20
R-squared	0.564	0.678	0.630

Table 1: Impact of Corruption on Informal Sector

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Tables

Independent Variables	(1) Rural + Urban	(2) Urban	(3) Rural
Corruption	0.240	0.562**	0.197
	(0.157)	(0.190)	(0.178)
SDP	0.00667***	0.00837***	0.00612***
	(0.00162)	(0.00220)	(0.00167)
SDP sq	-1.76e-08***	-1.79e-08***	-1.91e-08***
	(2.88e-09)	(3.61e-09)	(2.92e-09)
SDP*Corruption	-5.22e-06*	-8.28e-06**	-3.31e-06
	(2.91e-06)	(3.61e-06)	(2.96e-06)
HDI	-195.1	-2.427	-43.87
	(178.0)	(172.4)	(131.0)
Constant	540.7***	234.2	521.4***
	(116.0)	(138.2)	(124.4)
Observations	20	20	20
R-squared	0.594	0.678	0.631

Table 2: Impact of Corruption on Informal Sector – Inclusion of HDI, *** p<0.01, ** p<0.05, * p<0.1

IV and GMM

	IV			GMM		
	(1) Rural + Urban	(2) Urban	(3) Rural	(4) Rural + Urban	(5) Urban	(6) Rural
	0.523	0.569*	0.598	0.433	0.575*	0.478
	(0.350)	(0.300)	(0.407)	(0.341)	(0.300)	(0.378)
	0.00879***	0.00843***	0.00914***	-8.39e-06	-8.75e-06**	-7.47e-06
	(0.00302)	(0.00246)	(0.00333)	(5.74e-06)	(4.46e-06)	(6.21e-06)
	-1.87e-08***	-1.80e-08***	-2.07e-08***	0.00830***	0.00853***	0.00825***
	(2.73e-09)	(3.00e-09)	(2.81e-09)	(0.00299)	(0.00246)	(0.00313)
tion	--0.00001	-0.00001*	--0.00001	-1.89e-08***	-1.80e-08***	-2.06e-08***
	(0.00001)	(0.000004)	(0.00001)	(2.73e-09)	(3.00e-09)	(2.81e-09)
	-164.7	-1.635	-0.713	-218.5	-46.22	-40.81
	(182.3)	(150.1)	(159.6)	(176.2)	(147.0)	(151.4)
	387.7*	230.2	304.2	460.1**	250.8	388.5
	(228.2)	(186.9)	(263.7)	(219.4)	(186.3)	(241.3)
s	20	20	20	20	20	20
	0.564	0.678	0.575	0.574	0.674	0.598
stic	1.16	2.29	0.49	---	---	---
	(p = 0.28)	(p = 0.13)	(p = 0.48)			
tistic	---	---	---	1.33	2.17	0.63
				(p = 0.25)	(p = 0.14)	(p = 0.43)

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Sector-wise Corruption and Informality

	Need Based						Basic				
	Rural Financial Services	Income Tax	Municipal Services	Judiciary	Land Administration	Police	School	Water Supply	PDS/Ration	Electricity	Government Hospitals
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	0.00404***	0.00420**	0.00521***	0.00573***	0.00456	0.00258	0.00417***	0.00489***	0.00596***	0.00387***	0.00573***
	(0.00107)	(0.00149)	(0.000675)	(0.00165)	(0.00275)	(0.00419)	(0.000933)	(0.00112)	(0.00113)	(0.00102)	(0.00119)
	-1.48e-08***	-1.58e-08***	-1.41e-08***	-1.68e-08***	-1.57e-08**	-1.46e-08***	-1.50e-08***	-1.67e-08***	-1.93e-08***	-1.53e-08***	-1.52e-08***
	(3.26e-09)	(3.92e-09)	(2.81e-09)	(3.27e-09)	(5.39e-09)	(4.00e-09)	(3.09e-09)	(3.33e-09)	(2.84e-09)	(2.83e-09)	(3.13e-09)
on	1.063	0.790	2.633***	2.101	1.771	-0.181	2.733	1.214	2.145**	1.393	4.196**
	(2.889)	(1.920)	(0.852)	(1.504)	(2.296)	(4.143)	(2.658)	(1.641)	(0.866)	(1.617)	(1.564)
on	-1.32e-05	-8.43e-06	-3.12e-05***	-2.73e-05	-1.11e-05	1.77e-05	-1.92e-05	-2.35e-05	-4.53e-05*	-1.74e-06	-5.40e-05**
	(3.55e-05)	(2.11e-05)	(9.55e-06)	(1.98e-05)	(2.97e-05)	(5.78e-05)	(3.56e-05)	(1.48e-05)	(2.21e-05)	(1.98e-05)	(2.34e-05)
	560.7***	553.3***	456.4***	444.3***	471.0**	596.9*	525.1***	535.1***	495.4***	530.5***	438.2***
	(88.37)	(94.53)	(53.19)	(120.4)	(171.2)	(295.4)	(69.27)	(76.82)	(50.51)	(72.68)	(48.41)
tions	20	20	20	20	20	20	20	20	20	20	20
ed	0.537	0.538	0.594	0.556	0.556	0.538	0.566	0.569	0.576	0.563	0.588

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