Factors Influencing Unincorporated Enterprises to Register under Value Added Tax (VAT): An Analysis with Enterprises Survey Data

Sacchidananda Mukherjee and R. Kavita Rao

Working Paper No. 2015-145

April 2015

National Institute of Public Finance and Policy
New Delhi
http://www.nipfp.org.in

Factors influencing unincorporated enterprises to register under Value Added Tax (VAT): An analysis with enterprises survey data*

Sacchidananda Mukherjee[1] and R. Kavita Rao[2]

1 *Associate Professor, National Institute of Public Finance and Policy (NIPFP), 18/2, Satsang Vihar Marg, Special Institutional Area, New Delhi – 110 067, India. Telephone: +91 11 2656 9780; +91 11 2696 3421; Mobile: +91 9868421239; Fax: +91 11 2685 2548. E-mail: sachs.mse@gmail.com / sacchidananda.mukherjee@nipfp.org.in*

2 *Professor, National Institute of Public Finance and Policy (NIPFP), 18/2, Satsang Vihar Marg, Special Institutional Area, New Delhi – 110 067, India. E-mail: kavita.rao@nipfp.org.in*

Abstract

Unincorporated enterprises often bypass formal regulations in general and taxation in particular. However, escaping formal regulations does not always favour business of unincorporated enterprises and attracts multiple sources of exploitation (e.g., paying bribe to local administration, police and politicians). In other words, the benefits of that enterprises could reap by becoming part of the formal regulatory system often exceeds the costs of becoming a formal entity. Bringing unincorporated enterprises under taxation system is a challenge often faces by tax administrators and it is in this regard the present study explores the factors which influence decision of unincorporated enterprises to get registered with State tax authority. However, registration with State tax authority does not imply that the enterprises have to pay taxes and/or file return if they are not active or annual turnover does not exceed the threshold level. The study throws up interesting results for policy makers and tax administrators.

Key Words: *Tax Registration, Indirect Tax, Unincorporated Enterprises, State Sales Tax/ VAT Registration, Partnership Firms, Proprietary Enterprises, Probit Model, India.*

** - Earlier version of this paper has been presented at the conference on Papers in Public Economics and Policy, 12-13 March 2015 at NIPFP. Comments and suggestions received from the discussant and participants helped us to improve the paper substantially. Research assistance provided by Mr. Satadru Sikdar is gratefully acknowledged. Usual disclaimer nevertheless applies.*

Factors influencing unincorporated enterprises to register with State Tax Authority: An analysis with enterprises survey data

Introduction

The proposed transition to Goods and Services Tax (GST) regime in the near future is expected to bring in a significant change in the economic environment of the country. With a reduction in the extent of cascading in the tax regime, it is argued by some, that move to GST would result in expansion of economic activity. Since this new tax regime works through more integrated and redefined supply chains, for units to benefit from this new tax regime and for the success of the new regime, it is important that more and more firms find it useful to be a part of the GST regime. While firms and enterprises in the organized sector do participate in the GST regime, those in the unorganized sector may not be as well integrated. This poses a problem both for the units and the tax administration. For the former, apart from being unable to benefit from the growth enhancing processes in the economy, these units may also be subject to irregular visits by various authorities often associated with the payment of bribes. For the tax department, non-participation by a segment of the economy can induce lower confidence in the tax regime resulting in higher non-compliance even among segments which would normally pay taxes.

It is often argued that tax laws tend to be complex and impose high compliance cost on the firms which then seek to remain out of the tax regimes to avoid such costs (Barbone et al., 2012). Bringing unincorporated enterprises under the tax regime is an area of concern not only in India but for other countries as well (Joshi et al., 2014). To counter such issues, the tax systems do include special compounding rates for small tax payers to reduce such costs. It is the purpose of this paper to examine within the space of unincorporated sector, the extent of participation in the tax regime and then to identify characteristics of firms which could be playing a role in explaining non-participation. The focus in the present exercise is not on the amount of taxes paid but on whether the enterprise is registered with the tax department or not. This exercise can provide some inputs for designing policies to bring these enterprises into the mainstream.

The paper is organized as follows: the following section presents some trends observed in the data with respect to compliance as reflected in registration. This is followed by an attempt to econometrically understand the differences in behavior across enterprises – more specifically, binary choice Probit models are estimated to explore factors that influence the decision of enterprises to register with the VAT department. The final section provides some concluding observations.

1. Broad trends

This paper is based on unit level data of the 67th round survey of National Sample Survey Office (NSSO) (NSSO 2012).[1] Table 1 shows that in the survey a large number of enterprises do not reveal their tax registration status. Overall 61.3 percent of sample enterprises do not state their tax registration status. 62.6 percent of sample proprietary enterprises and 35.9 percent of sample partnership firms do not disclose their tax registration status in the NSS survey. Since there are no alternative sources to verify the tax registration status of the sample enterprises, we had to drop them from our analysis. This shows the reluctance of the enterprises not only to register under sales tax act but also to reveal the same to the surveyors. Excluding the firms which have not revealed their tax registration status, here on in this paper the phrase "percentage of registered enterprises" would be used to refer to enterprises registered under VAT as percentage of total number of enterprises which have revealed their registration status.

The first startling observation emerging from this survey is that from 3.34 lakh enterprises surveyed, only 17 thousand enterprises are registered under State sales tax act/ Value Added Tax (VAT) Act, i.e., only 13.3 percent of the total enterprises surveyed, are registered under VAT (Table 1). The survey classifies enterprises into proprietorship, partnership, trusts, self-help groups and others. Of these categories, the first and second together account for over 98 percent of the total number of sample enterprises. Since the tax status of these other categories are not clear, and the decision making process too is not clear, we focus our analysis on the first two categories, i.e., proprietorship enterprises and partnership firms. Table 1 also shows that proprietorship and partnership are the predominant forms of organizing business for unincorporated enterprises.

[1] According to NSSO (2012a), unincorporated enterprises imply not registered under the Companies Act, 1956. Further the domain of 'unincorporated enterprises' excluded (a) enterprises registered under Sections 2m(i) and 2m(ii) of the Factories Act, 1948 or bidi and cigar manufacturing enterprises registered under bidi and cigar workers (condition of employment) Act, 1966, (b) government/public sector enterprises and (c) cooperatives. Thus the coverage was restricted primarily to all household proprietary and partnership enterprises. In addition, Self Help groups (SHGs), Private Non-Profit institutions (NPIs) including Non-Profit Institutions Serving Households (NPISH) and Trusts .

Table 1: Distribution of Enterprises registered with VAT/ Sales Tax Act by Ownership

Ownership Category	Status of Registration under State Tax Act/ VAT						Total No. of Samples
	Registered (A)		Unregistered (B)	Total (C)=(A+B)	Not Specified (D)		(E)=(C+D)
Proprietary (male)	14,777	(13.1)	97,916	1,12,693	1,65,531	[59.5]	2,78,224
Proprietary (female)	671	(10.0)	6,007	6,678	34,573	[83.8]	41,251
Proprietary (male + female)	**15,448**	**(12.9)**	**1,03,923**	**1,19,371**	**2,00,104**	**[62.6]**	**3,19,475**
Partnership Firm (members from the same household)	1,012	(30.1)	2,350	3,362	2,119	[38.7]	5,481
Partnership Firm (all members are not from the same household)	654	(33.2)	1,316	1,970	866	[30.5]	2,836
Partnership Firms (all)	**1,666**	**(31.2)**	**3,666**	**5,332**	**2,985**	**[35.9]**	**8,317**
Self-help groups	13	(0.5)	2,805	2,818	1,726	[38.0]	4,544
Trusts	47	(3.8)	1,195	1,242	96	[7.2]	1,338
Others	33	(5.3)	592	625	174	[21.8]	799
All	**17,207**	**(13.3)**	**1,12,181**	**1,29,388**	**2,05,085**	**[61.3]**	**3,34,473**

Notes: Figures in the parenthesis show the percentage share of Total (Col. C)
Figures in the bracket show the percentage share in Total No. of Samples (Col. E)
Source: Computed by authors from NSSO (2012c)

The present system of taxation limits the liability of tax mostly to sale of goods.[2] Hence it is expected that that percentage of registered firms will be larger within the categories of manufacturing and trading activities. Table 2 shows that a majority of enterprises (proprietary enterprises and partnership firms) having registration with VAT/ sales tax act are in manufacturing and trading activities. However, interestingly, all firms in manufacturing and/or trading are not registered under the State sales tax authority. Table 2 also shows that 40.5 percent of sample manufacturing firms and 43 percent of trading firms under partnership are registered under VAT. Similarly, among proprietorship enterprises, only 13.2 percent of manufacturing enterprises and 22.8 percent trading enterprises are registered under VAT.

[2] Some of the services enterprises too are required to register with the State sales tax / VAT departments since they could be providing some goods in addition to their primary activity of providing services. Further, in some cases, the firms seek to register themselves with the tax department to avail of concessional imports of goods into the state under the Central Sales Tax (CST) Act.

Table 2: Activity-wise VAT/ Sales Tax Registration Status of Partnership Firms and Proprietary Enterprises

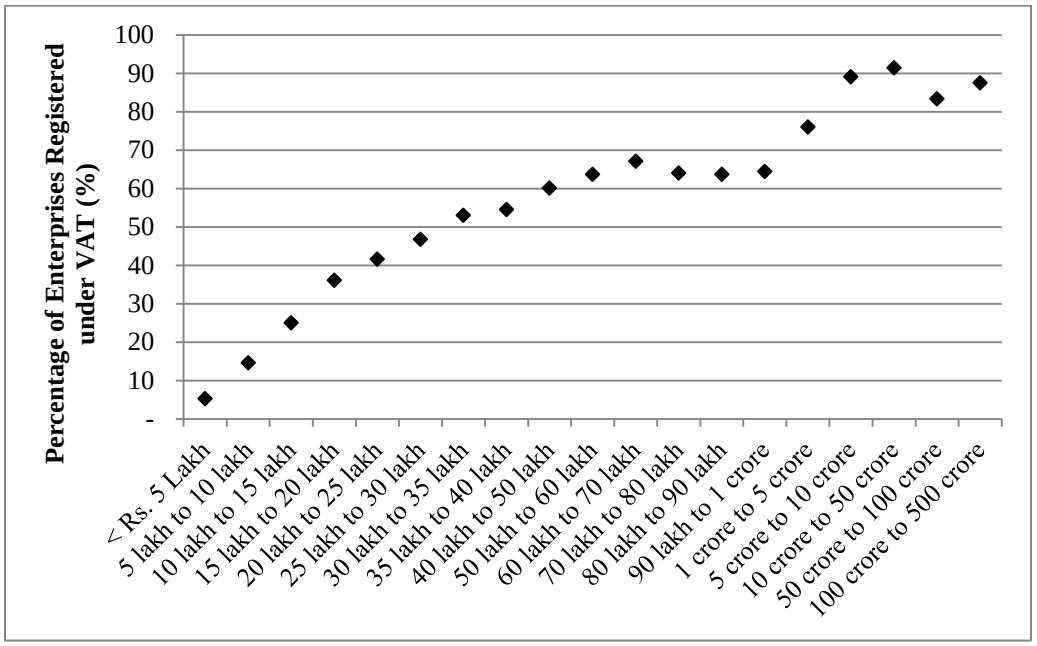
Activity Description	Partnership Firms			Proprietary Enterprises		
	Registered		Total	Registered		Total
Manufacturing activity	625	(40.5)	1,543	3,362	(13.2)	25,423
Trading activity	801	(43.0)	1,864	9,957	(22.8)	43,756
Transportation and storage activities	20	(10.2)	197	327	(2.0)	16,364
Postal and courier activities	3	(23.1)	13	33	(15.6)	212
Accommodation and food service activities	122	(21.6)	564	846	(9.2)	9,148
Information and communications	14	(14.0)	100	138	(7.5)	1,852
Financial and insurance activities	2	(6.3)	32	50	(3.6)	1,377
Real estate activities	9	(18)	50	43	(6.9)	625
Educational activity	3	(0.9)	324	59	(1.8)	3,363
Human health and social work activity	21	(15)	140	177	(3.3)	5,289
Other activities	36	(9.3)	389	404	(3.6)	11,292
Not mentioned	10	(8.6)	116	52	(7.8)	670
All	**1,666**	**(31.2)**	**5,332**	**15,448**	**(12.9)**	**1,19,371**

Note: Figures in the parenthesis show the percentage share of Total (Registered + Unregistered) Enterprises
Source: Computed by authors from NSSO (2012c)

Annual turnover is the criteria on which enterprises are required to register with the State sales tax authority.[3] There are two noteworthy observations in Figure 1: first, the percentage of registered enterprises increases with increase in the turnover. Second, even with the increase, not all enterprises are registered. Even with turnover between Rs. 1 crore and 5 crore, about 24 percent of enterprises are not registered under VAT. It is useful to note that in most of the States VAT/sales tax laws require mandatory VAT/ sales tax registration at turnover above Rs. 50 lakh.

[3] Since all the enterprises are not operating throughout the year, we have estimated annual turnover by multiplying the monthly total receipts by number of months operated during the last 365 days (as reported in the survey).

Figure 1: Turnover-wise VAT Registration Status of Enterprises (Partnership Firms and Proprietary Enterprises) engaged in Manufacturing and Trading Activities



Source: Computed by authors from NSSO (2012c)

Location of the enterprises also plays an important role to get registered with State sales tax authority. Enterprises which are located outside the households (in permanent establishments) are easy to identify and could potentially attract inspection from State tax administration and therefore they are more likely to take registration. Data suggests that while enterprises with a permanent establishment outside the household are more likely to register for VAT, even in this category, considerably large percentage of firms choose not to register.

Table 3: Distribution of Enterprises registered under VAT/ Sales Tax Act by Location

Location of Enterprises	Partnership Firms			Proprietary Enterprises		
	Registered		Total	Registered		Total
Location - within household premises	74	(11.9)	624	1,833	(7.9)	23,180
Location - outside household premises (permanent location)	1,591	(34.3)	4,634	13,478	(15.7)	85,682
Mobile Market	1	(8.3)	12	30	(1.2)	2,424
Street vendors	--	--	62	107	(1.3)	8,084
Total	**1,666**	(31.2)	**5,332**	**15,448**	**(12.9)**	**1,19,370**

Note: Figures in the parenthesis show the percentage share of Total (Registered + Unregistered)
Source: Computed by authors from NSSO (2012c)

Except for a few activities, the ratio of average annual Gross Value Added (GVA) to turnover (i.e., GVATURNOVER) is lower for registered (Sales tax/ VAT) enterprises as compared to their unregistered counterparts (Appendix Table A1).[4] It implies that registered enterprises have higher cost of inputs (as a share of annual turnover) as compared to their unregistered counterparts. In other words, registered enterprises have higher input tax credit that they could potentially claim and therefore they are registered with State sales tax authority. It is often argued that enterprises having large backward and forward linkages are more likely to be integrated with the supply chains and also likely to take tax registration. Self-enforcing nature of VAT system appears to induce firms to take part in the tax system.

Both access to formal credit market and cost of credit could be constraints for unincorporated enterprises. We have estimated the cost of credit by taking the ratio of monthly interest payment on outstanding loan and total outstanding loan of the year. Further, since enterprises might borrow from both formal and informal sources of credit, an attempt is made to analyse the impact of the source of credit as well. We have considered item no. 1101 to 1106 of Table A2 in Appendix as sources of formal credit and item no. 1107 to 1111 as informal sources of credit. Table 4 shows that the cost of credit from informal sources is higher for enterprises which are not registered under VAT. Across status of registration, monthly average interest paid on outstanding loan is

[4] GVA = Total Receipts or Turnover (TR) – Total Operating Expenses (TOE) – Distributive Expenses (DE). Annual GVA = Months of Operation in a Year* Monthly GVA. Annual TR = Months of Operation in a Year* Monthly Total Receipts (TR). 1-GVATURNOVER=(Annual TOE + Annual DE)/Annual TR

higher for informal sources of credits as compared to formal sources.[5] Average size of the outstanding loan is higher for registered enterprises as compared to unregistered enterprises. Irrespective of registration, the size of loan outstanding is higher for formal sources of credit.[6] It implies that formal sources of credits are the major sources of credits for the unincorporated enterprises. Among formal sources, commercial banks are the major lenders and among informal sources, business partners provide majority of loans (Table A2 in Appendix).

Table 4: Cost of credit by Registration under VAT/ Sales Tax Act

Sources of Credit	Monthly Interest Rate Paid (percent)			Average Size of the Loan (in Rs. Lakh)		
	Registered	Unregistered	Welch F-test Stat	Registered	Unregistered	Welch F-test Stat
Formal	1.49	1.56	1.96	10.84	2.39	159.76 *
Informal	2.43	2.99	21.00 *	6.58	0.87	65.56 *

Note: * - implies Welch F-test for mean equality is significant at 0.01 level.
Source: Computed by authors from NSSO (2012c)

While in the GST regime, the tax would apply to the supply of almost all goods and services, since we are attempting to identify the characteristics of firms which are not choosing to register; it is useful to limit the present exercise to manufacturing and trading activities which are currently subject to tax. Since we are interested to understand the factors influencing registration of firms and enterprises, we have dropped the sample firms / enterprises who do not specify their VAT registration status in the survey. There are 72,586 enterprises (3,407 partnership firms and 69,179 proprietary enterprises) which form our sample size for further analysis (see Table 2).

Before discussing the regression results, we present the differences in mean between registered and unregistered enterprises for basic scale indicators (Table 5). This table highlights the fact that on all these scale variables, the registered firms show a high a scale of operation than unregistered firms. In annual average turnover, the registered firms report a turnover of over Rs 80 lakh as compared to less than Rs 12 lakh for unregistered firms. Annual net surplus is a measure of profitability and Table 5 shows that difference in average profitability between registered and unregistered enterprises is Rs. 3.25 lakh. Similar differences also hold for other indicators as well.

[5] For registered enterprises, Welch F-test Statistic for mean equality (between formal and informal sources of credit) is 88.746 ($p<0.001$) and for unregistered enterprises, it is 474.608 ($p<0.001$).

[6] For registered enterprises, Welch F-test Statistic for mean equality is 81.845 ($p<0.001$) and for unregistered enterprises, it is 259.335 ($p<0.001$).

Table 5: Mean Equality Tests for Basic Scale Indicators by VAT Registration

Variable Descriptions	Registered under VAT (A)	Unregistered (B)	A-B	Welch F-test Stat
Annual Average Turnover (Rs. Lakh)	80.73	11.70	69.03	240.98 *
Annual Average Net Surplus (Rs. Lakh)	4.60	1.35	3.25	307.21 *
Annual Average Investment (Rs. Lakh)	2.25	0.64	1.61	34.95 *
Average Market Value of Total Asset (Rs. Lakh)	27.56	6.04	21.52	18.79 *
Average Number of Total Workers (Nos.)	7.10	2.78	4.32	822.44 *
Average GVATURNOVER	0.24	0.37	-0.13	82.71 *
Average Year of Operation (Year)	13.42	11.88	1.54	205.97 *

Note: *- implies mean equality test (Welch F-test) is significant at 0.01 level
Source: Estimated by authors

2. Multivariate Analysis

We run the following binary choice Probit model to understand the factors influencing enterprises' decision to register under the VAT/ Sales Tax Act (*REGVATACT*):

$$Prob(REGVATACT = 1) = \Phi(x'\beta) \qquad (1)$$

where, Φ is the cumulative distribution function of the standard normal distribution, and

$$x'\beta = \beta_0 + \beta_1 Scale\ Indicator + \beta_2 LTOTWORKER + \beta_3 LGVATURNOVER + \beta_4 LYEAROOP + \beta_5 LOCATIONOUT + \beta_7 GOVTASSIST + \beta_7 MFG + \beta_8 RURAL + \beta_9 OAE + \beta_{10} State\ Dummy$$

REGVATACT = 1 if the enterprise registered under VAT/Sales Tax Act, 0 otherwise

Scale Indicators:

LTURNOVER – log of annual value of total receipts (in Rs.) (per month total receipt x no. of months operated in last 365 days)

LANNETSURPLUS – log of annual Net Surplus (in Rs.)[7]

[7] Net Surplus = Total Receipts – Total Operating Expenses – Distributive Expenses – Total Emoluments – Rent Payable – Interest Payable.

LANNUALINV – log of annual investment (net addition of fixed asset, in Rs)

LMKTVALTOTAST – log of market value of total (own and hired) asset (in Rs.)

LTOTWORKER – log of total worker (full time and part time, male and female)

LGVATURNOVER - log of ratio of Annual Gross Value Added and Turnover

LYEAROOP – log of year of operation (as on 2011)

LOCATIONOUT = 1 if location of the enterprise outside the household premises (permanent location), 0 otherwise

GOVTASSIST = 1 if the enterprise received government assistance, 0 otherwise.

MFG – 1 if the enterprise is engaged in manufacturing only, 0 otherwise

RURAL – 1 if the enterprise is located in rural area, 0 otherwise

OAE – 1 if the enterprise is Own Account Enterprise, 0 otherwise[8]

PROP – 1 if Proprietary Enterprises, 0 otherwise

State Dummy – 1 for the Concerned State, 0 otherwise[9]

We have corrected the basic Probit model (equation 1) for the presence of heteroskedasticity. The results are reported in Table 6 and we also report the scale variables that were used to correct for the presence of heteroskedasticity of the models in Table 6 itself. The estimated probability of dependent variable is reported for each of the models.

We have introduced different measures (indicators) of scale of operation of enterprises (*LTURNOVER, LANNETSURPLUS, LANNUALINV, and LMKTVALTOTAST)* one at a time in our regression models to avoid the problem of multicollinearity (Table 6). We have estimated different models keeping a few scale variables and basic characteristics variables common across models. To capture the characteristics specific to States, we include State dummies and selected them depending on their level of significance in the selected model. Though, *LTOTWORKER* is also a measure of size of the firms, we have kept the variable common in all our regression models, as number of workers form the basis for registration for various other authorities (e.g. Employees State Insurance Act, Provident Fund Act). In addition, we have introduced a couple of variables to capture the characteristics and location of the enterprises – viz., *MFG*,

[8] Enterprises are classified into two categories - Own Account Enterprise (OAE) and Establishment. OAE is an enterprise which is run by members of the household without hiring any worker on a fairly regular basis. Establishment is run by employing at least one hired worker on a fairly regular.

[9] We have considered only Non Special Category States and States having observations above 100.

RURAL and OAE. Table 6 shows that all the scale variables have positive and significant impact on registration, as expected. Table 6 shows that there is negative and significant relationship between LGVATURNOVER and registration. The result is as per our expectation. Firms which are operating for longer time (LYEAROOP) are more likely will register. Those enterprises located outside the household premises (in permanent location) are more likely to register. Enterprises which have received government assistance are more likely to register. Table 6 also shows that enterprises located in rural areas and own account enterprises are less likely to register. Given all other factors, proprietary enterprises are less likely to register. Registration of enterprises under VAT varies across States and for a set of States (Uttar Pradesh, Gujarat, Punjab, Haryana, Delhi, Rajasthan, Odisha, Karnataka, Madhya Pradesh, and Jharkhand), enterprises are more likely to register as compared to other States (West Bengal, Maharashtra, Andhra Pradesh, Kerala, Tamil Nadu, Assam, and Chhattisgarh). Results show that tax compliance, in terms of VAT registration of enterprises, varies across the States and there is scope for improving VAT compliance of unincorporated enterprises for individual States. Except in Chhattisgarh, tax compliance of enterprises is comparatively better in Central and North Indian States (Delhi, Haryana, Madhya Pradesh, Punjab and Uttar Pradesh) as compared to other regions. Many of the low per capita income States (e.g., Uttar Pradesh, Madhya Pradesh, Jharkhand, Odisha, Rajasthan) and high income States (e.g., Delhi, Haryana, Gujarat) have better tax compliance as compared to middle income States (e.g., Kerala, Andhra Pradesh, West Bengal).

Table 6: Regression Results for Partnership Firms and Proprietary Enterprises having Manufacturing and Trading Activities

Independent Variables	Model 1			Model 2			Model 3			Model 4		
LTURNOVER	0.433	(0.013)	***									
LANNETSURPLUS				0.285	(0.029)	***						
LANNUALINV							0.102	(0.013)	***			
LMKTVALTOTAST										0.643	(0.089)	***
LTOTWORKER	0.211	(0.014)	***	0.300	(0.047)	***	0.657	(0.09)	***	1.067	(0.196)	***
LGVATURNOVER				-0.326	(0.042)	***	-0.493	(0.066)	***	-1.004	(0.166)	***
LYEAROOP	0.029	(0.01)	***	0.017	(0.009)	**	0.167	(0.025)	***	0.109	(0.030)	***
LOCATIONOUT	0.100	(0.018)	***	0.118	(0.02)	***	0.248	(0.061)	***	0.144	(0.103)	
GOVTASSIST	0.206	(0.035)	***	0.181	(0.035)	***	0.203	(0.081)	**	0.509	(0.161)	***
MFG	-0.360	(0.019)	***	-0.273	(0.037)	***	-0.488	(0.074)	***	-1.146	(0.199)	***
RURAL	-0.184	(0.014)	***	-0.161	(0.023)	***	-0.430	(0.066)	***	-0.195	(0.061)	***
OAE	-0.198	(0.017)	***	-0.223	(0.034)	***	-0.431	(0.07)	***	-0.675	(0.13)	***
PROP	-0.240	(0.028)	***	-0.184	(0.032)	***	-0.468	(0.089)	***	-0.548	(0.131)	***
Uttar Pradesh	0.549	(0.030)	***	0.412	(0.054)	***	0.464	(0.087)	***	1.292	(0.224)	***
West Bengal	-0.447	(0.028)	***	-0.381	(0.052)	***	-0.658	(0.108)	***	-0.558	(0.129)	***
Gujarat	0.151	(0.030)	***	0.100	(0.026)	***						
Maharashtra	-0.223	(0.025)	***	-0.182	(0.031)	***				-0.610	(0.136)	***
Andhra Pradesh	-0.121	(0.025)	***	-0.091	(0.024)	***	-0.271	(0.086)	***	-0.195	(0.083)	**
Kerala	-0.243	(0.028)	***	-0.158	(0.03)	***	-0.148	(0.069)	**	-0.323	(0.103)	***
Tamil Nadu	-0.312	(0.026)	***	-0.227	(0.036)	***	-0.386	(0.089)	***	-0.513	(0.116)	***
Punjab	0.169	(0.037)	***	0.126	(0.033)	***	0.621	(0.11)	***			
Haryana	0.490	(0.045)	***	0.400	(0.059)	***	0.729	(0.144)	***	1.111	(0.262)	***
Delhi	0.447	(0.041)	***	0.392	(0.059)	***	0.937	(0.189)	***	1.528	(0.318)	***
Rajasthan	0.205	(0.034)	***	0.160	(0.033)	***				0.432	(0.14)	***
Assam	-0.320	(0.04)	***	-0.280	(0.048)	***						
Odisha	0.302	(0.052)	***	0.210	(0.048)	***	0.351	(0.136)	***	1.296	(0.264)	***
Chhattisgarh	-0.269	(0.053)	***	-0.290	(0.055)	***	-0.507	(0.175)	***	-0.638	(0.237)	***
Karnataka	0.095	(0.029)	***	0.096	(0.025)	***				0.616	(0.134)	***
Madhya Pradesh							0.282	(0.089)	***			
Jharkhand										0.537	(0.265)	**
Constant	-6.578	(0.186)	***	-4.505	(0.477)	***	-2.879	(0.31)	***	-12.033	(1.744)	***
LTOTWORKER	0.042	(0.012)	***	0.061	(0.017)	***				-0.064	(0.021)	***
LYEAROOP	-0.034	(0.011)	***	-0.030	(0.011)	***	-0.040	(0.022)	*			
LANNETSURPLUS				-0.024	(0.012)	**						
LANNUALINV							0.026	(0.011)	**			
LGVATURNOVER				-0.028	(0.010)	***				-0.036	(0.016)	**
LMKTVALTOTAST										0.068	(0.013)	***
No. of observations	72,139			72,128			10,515			33,656		
Odd ratio	0.25			0.25			0.30			0.27		
Wald chi2	2,723.20			146.08			104.34			63.60		
Prob>chi2	0.000			0.000			0.000			0.000		
Log pseudolikelihood	-25855.46			-26240.02			-3983.1			-12941.51		
Predicted Prob(regvatact=1)	0.13			0.13			0.16			0.16		

Notes: Figure in the parenthesis shows the heteroskedasticity-consistent (HC) VCE-robust standard error of the estimated coefficient

****, **, and * - imply estimated z-stat is significant at 0.01, 0.05 and 0.10 level respectively.*

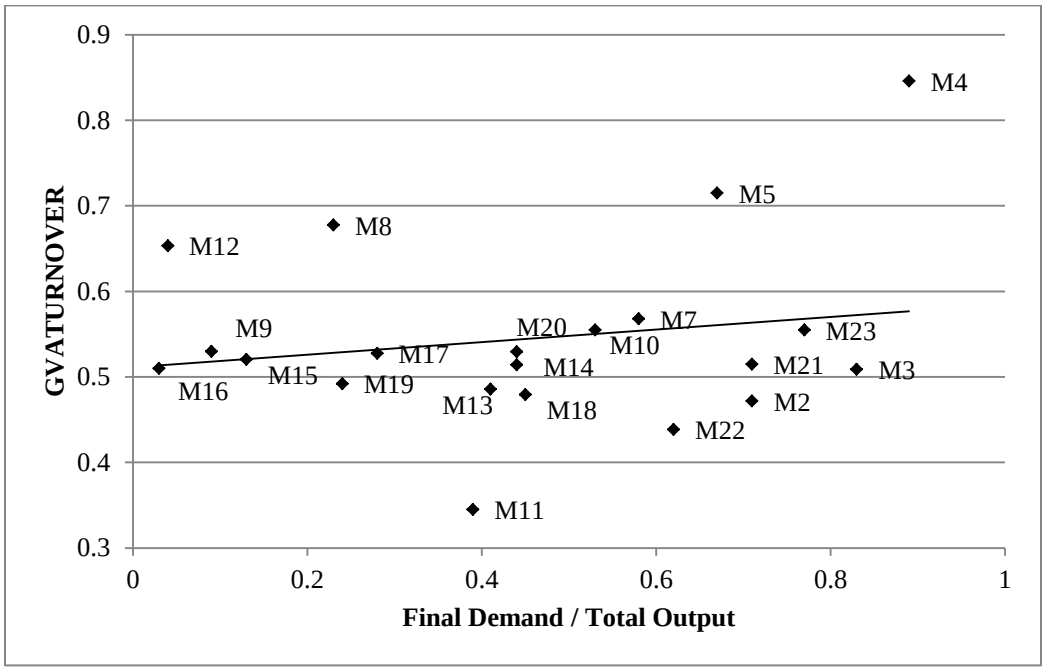
Source: Estimated by authors

Results in Table 6 show that as compared to trading enterprises, manufacturing enterprises are less likely to register. This is a counterintuitive result since the State VAT Acts specify a lower threshold for registration for manufacturing enterprises as compared to trading enterprises. Possible reasons for such counterintuitive results could be - a) manufacturing enterprises are smaller in sizes and they predominantly deal with either final consumption goods and sell their outputs directly to consumers through their own networks, b) supply outputs to small traders who are predominantly are not registered under VAT. Not registering under VAT leaves the enterprises off the supply chains and often restricts their business prosperity.

In support of the first argument for low registration among manufacturing firms, there could be larger scope for manufacturing firms to sell output directly to consumers (for final consumption) and/or having lower input costs and therefore lower dependence on credit locked in as input tax credit. To test the hypothesis, we construct activity-wise (see Table A1 in Appendix) Final Demand and Total Output ratio for manufacturing sectors from Input – Output Table 2007-08 (CSO 2012).[10] Higher ratio of Final Demand and Total Output shows a larger share of total output is consumed as final demand in comparison to being used as intermediate inputs. Enterprises will also choose to register if significant credit is locked in as input tax credit. To check whether enterprises having higher Final Demand – Total Output ratio are also those having lower credit locked in input tax, we plot the ratios across activity codes (manufacturing) in Figure 2. From this figure it appears that there is some positive correlation between these two variables. In other words, for firms that are associated with sectors which produce more for final consumption, the average cost of inputs corresponding to a given level of turnover is lower, indicating lower benefits from input tax credit.

[10] Final Demand = Private Final Consumption Expenditure + Government Final Consumption Expenditure + Gross Capital Formation (Gross Fixed Capital Formation + Change In Stock) + Export – Import. Input-Output Table 2007-08 also provides these information activity-wise.

Figure 2: Activity Code-wise (Manufacturing) Reasons for Low Registration under VAT



Source: Constructed by authors

From the analysis of results, we could argue that both vicious and virtuous cycles are working with reference to VAT registration of enterprises. For registered enterprises, annual turnover is high, their profitability (as measured by annual net surplus) is high, they have better prospect for investment and larger base of asset and therefore possibly a virtuous cycle is working there. Whereas for unregistered enterprises, possibly a vicious cycle is working.

3. Conclusions

We found that information on VAT registration is not available for a large number of enterprises in the NSS survey. It is not expected that mere registration with State tax registration would result in sudden substantial tax revenue mobilization for States, but gradual increase in registration with tax authority would result in integration of unincorporated enterprises with integrated supply chains of formal economy. In the long run enterprises will reap the benefits of economic integration through backward and forward linkages and for tax administration, they will get a cleaner system to deal with. It is expected that in the long run, tax revenue mobilization will improve for the States. Being only national level survey conducted to capture information on unincorporated enterprises, not having information on VAT registration status for a substantial percentage of sample enterprises; the scope of the survey becomes limited specifically for

those States where VAT survey is not conducted on regular basis. The coverage of the survey could be broadened to capture the economic inter-linkages (backward and forward linkages) of individual enterprises with others, so that the analysis of survey data could help to provide policy suggestions to State tax administrations.

Two interesting results come out from this study – first, except for a few exceptions, unregistered enterprises face higher cost of capital from informal sources of credits. This could be understood as follows: higher cost of capital could imply economic viability of the enterprise is lower and hence the entrepreneur would have less interest in being registered for tax purposes. Further, higher cost of capital is perhaps associated with borrowing from informal sources. Interest payments on such borrowing might have to be paid in cash requiring the need to keep transactions out of the books of accounts.[11] If this direction of causation in decision making is valid, it would suggest that increasing access to formal sources of credit can provide a windfall benefit to governments in the form of higher tax registration and perhaps a resultant increase in tax collections.

Second, increase in assistance from government is associated with higher probability of registration with VAT departments. This result too supports greater intervention by the government in supporting unincorporated units, even from a tax department perspective.

A counter-intuitive result however is that the dummy for manufacturing is negative in regression models – it suggests that all other things remaining the same, the probability of a manufacturing unit being registered for VAT/sales tax is lower than that of a trading firm. This result is apparently counterintuitive since all manufacturing units with turnover above Rs. 1 lakh are expected to be registered with the tax department. This result suggests two things – one, it is possible that manufacturers are small units not part of supply chain with their own marketing systems. Since they are not integrated with the rest of the economy, they may not perceive any merit in registering for VAT. Second, the fact that manufacturing units are less likely to register suggests that the tax departments are unable to monitor the economic activity being undertaken in their jurisdiction.

Depending on respective turnover based threshold set for VAT registration by State Governments, different State tax administration face different level of challenges of bringing unincorporated enterprises under the tax system. Though the threshold for

[11] It is also possible that firms which choose not to be part of the formal economy prefer to access informal sources of credit. In such cases, the decision not to register with the tax department would precede the sourcing of credit. One such case could be where the activity of the enterprise is very volatile – such an activity may not benefit from formalization. A quick analysis to check this hypothesis however did not reveal any results – number of months of operation was used as an indicator of volatility of the business. There is no difference between registered and unregistered firms in the average number of months of operation.

registration is Rs. 4 crore for Central Excise (CenVAT), till now the challenge of bringing unincorporated enterprises under tax system is not severe for Central tax administration (Central Excise and Customs). If the threshold for registration for Central GST remains same under the forthcoming Goods and Services Tax (GST) regime, the challenge for Central tax administration will not be much different from the present. However, to integrate the unincorporated enterprises with the rest of the economy, it is imperative to bring the enterprises under the tax system. For enterprises, while it is often argued that there are costs associated with remaining outside the tax system, since a number of firms are choosing to remain outside the tax system, it appears that the self-policing dimension of the VAT regime does not provide adequate benefits. Even the presently existing tax compounding schemes do not seem to be attractive enough to bring the small dealers into the system. It is therefore important to explore alternative measures which could change this scenario on the ground. From the results in the present study, it appears that facilitating access to formal sector credit might be one such instrument. The other can be a focus on expanding the consumer's incentives to ask for an invoice. If larger segments of the economy ask for invoices for the purchases made, the incentive and the option to remain out of the tax regime would be correspondingly reduced.

Location of the enterprises also plays an important role to get registered with State sales tax authority. Enterprises which are located outside the households (in fixed premises) are easy to identify and could potentially attract inspection from State tax administration and therefore they should be more likely to take registration. Our data analysis shows that even in this category not all enterprises are registered. It throws up question on efficiency of State tax administration. An efficient tax administration could potentially look for opportunities to expand the tax base by bringing more assessee under the tax net.

References

Barbone, L., R. M. Bird and J. VÃ¡zquez Caro (2012), "The Costs of VAT: A Review of the Literature", CASE Network Report No. 106/2012, Warsaw, Poland.

Central Statistics Office (2012), "Input-Output Transaction Table 2007-08", CSO, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.

Joshi, Anuradha, Wilson Prichard and Christopher Heady (2014), "Taxing the Informal Economy: The Current State of Knowledge and Agendas for Future Research", *The Journal of Development Studies*, 50(10): 1325-1347.

National Sample Survey Office (NSSO) (2012a), "*Operational Characteristics of Unincorporated Non-agricultural Enterprises (Excluding Construction) in India*", NSS 67th Round (June 2010 - July 2011), Report No. 546 (67/2.34/1), NSSO, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.

National Sample Survey Office (NSSO) (2012b), "*Economic Characteristics of Unincorporated Non-agricultural Enterprises (Excluding Construction) in India*", NSS 67th Round (June 2010 - July 2011), Report No. 549 (67/2.34/2), NSSO, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.

National Sample Survey Office (NSSO) (2012c), "*Unit Level data of Unincorporated Non-agricultural Enterprises (Excluding Construction) in India*", NSS 67th Round (June 2010 - July 2011), Report No. 549 (67/2.34/2), NSSO, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.

Appendix Tables

Table A1: Activity-wise Registration of Enterprises (Partnership Firms and Proprietary Enterprises)

Activity Code	Activity Description	Partnership Firms			Proprietary Enterprises			Partnership Firms		Proprietary Enterprises	
		No. of Firms Registered	No. of Sample Firms	% of Firms Registered	No. of Enterprises Registered	No. of Sample Enterprises	% of Enterprises registered	Average GVATURNOVER - Registered	Average GVATURNOVER - Un-registered	Average GVATURNOVER - Registered	Average GVATURNOVER - Un-registered
M1	Cotton ginning, cleaning and bailing	4	7	57.1	4	32	12.5	0.05	0.34	0.09	0.66
M2	Manufacture of food products	74	515	14.4	430	16,224	2.7	2.94	0.36	0.30	0.47
M3	Manufacture of beverages	11	69	15.9	45	1,311	3.4	0.39	0.48	0.52	0.51
M4	Manufacture of tobacco products	5	48	10.4	14	3,213	0.4	0.27	0.65	0.44	0.85
M5	Manufacture of textiles	35	301	11.6	137	8,015	1.7	0.31	0.70	0.36	0.72
M6	Manufacture of wearing apparel	15	288	5.2	136	30,935	0.4	0.32	0.71	0.52	0.76
M7	Manufacture of leather and related products	5	41	12.2	47	927	5.1	0.39	0.60	0.43	0.57
M8	Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	27	181	14.9	190	7,765	2.4	0.28	0.65	0.36	0.69
M9	Manufacture of paper and paper products	21	43	48.8	88	635	13.9	0.25	0.40	0.33	0.58
M10	Printing and reproduction of recorded media	13	77	16.9	179	1,674	10.7	0.52	0.52	0.45	0.57
M11	Manufacture of coke and refined petroleum products	--	1	0.0	11	46	23.9	--	0.21	0.28	0.37

Activity Code	Activity Description	Partnership Firms			Proprietary Enterprises			Partnership Firms		Proprietary Enterprises	
		No. of Firms Registered	No. of Sample Firms	% of Firms Registered	No. of Enterprises Registered	No. of Sample Enterprises	% of Enterprises registered	Average GVATURNOVER - Registered	Average GVATURNOVER - Un-registered	Average GVATURNOVER - Registered	Average GVATURNOVER - Un-registered
M12	Manufacture of chemicals and chemical products	21	41	51.2	159	736	21.6	0.17	0.60	0.32	0.76
M13	Manufacture of pharmaceuticals, medicinal chemical and botanical products	3	5	60.0	10	59	16.9	0.35	0.34	0.37	0.52
M14	Manufacture of rubber and plastics products	35	68	51.5	142	734	19.3	0.27	0.50	0.29	0.58
M15	Manufacture of other non-metallic mineral products	204	347	58.8	526	3,835	13.7	0.43	0.51	0.42	0.54
M16	Manufacture of basic metals	11	20	55.0	40	268	14.9	0.30	0.54	0.31	0.55
M17	Manufacture of fabricated metal products, except machinery and equipment	30	146	20.5	278	5,237	5.3	0.34	0.53	0.39	0.54
M18	Manufacture of computer, electronic and optical products	7	11	63.6	37	130	28.5	0.24	0.60	0.34	0.54
M19	Manufacture of electrical equipment	12	21	57.1	69	340	20.3	0.27	0.33	0.35	0.54
M20	Manufacture of machinery and equipment n.e.c.	20	41	48.8	123	434	28.3	0.30	0.62	0.32	0.62
M21	Manufacture of motor vehicles, trailers and semi-trailers	12	23	52.2	58	272	21.3	0.38	0.51	0.36	0.57
M22	Manufacture of other transport equipment	6	9	66.7	28	122	23.0	0.35	0.41	0.25	0.50

Activity Code	Activity Description	Partnership Firms			Proprietary Enterprises			Partnership Firms		Proprietary Enterprises	
		No. of Firms Registered	No. of Sample Firms	% of Firms Registered	No. of Enterprises Registered	No. of Sample Enterprises	% of Enterprises registered	Average GVATURNOVER - Registered	Average GVATURNOVER - Un-registered	Average GVATURNOVER - Registered	Average GVATURNOVER - Un-registered
M23	Manufacture of furniture	14	125	11.2	153	4,952	3.1	0.27	0.50	0.33	0.56
M24	Other manufacturing	31	257	12.1	297	5,489	5.4	0.31	0.69	0.39	0.59
M25	Repair and installation of machinery and equipment	6	52	11.5	90	2,773	3.2	0.50	0.74	0.51	0.70
	Manufacturing (Sub Total)	**622**	**2,737**	**22.7**	**3,291**	**96,158**	**3.4**				
T1	Trade and repair of motor vehicles and motor cycles	64	237	27.0	555	7,715	7.2	0.21	0.63	0.23	0.67
T3	Other wholesale trade	282	529	53.3	2,564	8,996	28.5	0.18	0.24	0.16	0.27
T4	Other retail trade	448	1,842	24.3	6,811	90,797	7.5	0.16	0.23	0.18	0.23
	Trading (Sub Total)	**794**	**2,608**	**30.4**	**9,930**	**107,508**	**9.2**				

Source: Computed by authors from NSSO (2012c)

Table A2: Source-wise Average Size of Outstanding Loans for Registered and Unregistered Enterprises (in Rs. Lakh)

Sources of Credit	Registered	Unregistered	Welch F-test Stat	
Central and state level term lending institutions (1101)	10.09	4.50	3.81	*
Government (central, state, local bodies) (1102)	9.76	2.59	8.51	***
Commercial banks (1103)	11.54	2.96	115.76	***
Co-operative banks and societies (1104)	5.49	1.28	48.40	***
Micro-finance institutions (1105)	3.11	0.66	12.31	***
Other institutional agencies (1106)	11.42	1.14	12.58	***
Formal Sources of Credit (1101 to 1106)	**10.84**	**2.39**	**159.76**	*******
Money lenders (1107)	5.13	1.02	36.14	***
Business partner(s) (1108)	16.21	2.08	10.23	***
Suppliers / contractors (1109)	4.02	0.60	17.01	***
Friends and relatives (1110)	6.17	0.60	11.94	***
Others (1111)	12.95	1.27	12.82	***
Informal Sources of Credit (1107 to 1111)	**6.58**	**0.87**	**65.56**	*******
All Sources (1101 to 1111)	**10.51**	**1.74**	**171.84**	*******

Note: ***,** and * - imply Welch F-test for mean equality is significant at 0.01, 0.05 and 0.10 level respectively.
Source: Computed by authors from NSSO (2012c)