



RESEARCH ARTICLE  
Vol.6.Issue.3.2019  
July-Sept



**ISSN** INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA  
**2 3 4 9 - 4 6 3 8**

## INTERNATIONAL JOURNAL OF BUSINESS, MANAGEMENT AND ALLIED SCIENCES (IJBMAS)

*A Peer Reviewed and refereed Journal*

---

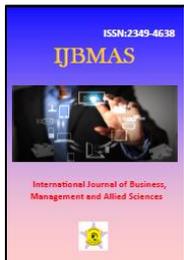
### FORMAL INFORMAL SECTOR RELATIONSHIP IN INDIA IN POST- LIBERALIZATION PERIOD: CONTEXTUALIZING ITS LINKAGES AND CONFLICT

**RAJIB PRASAD**

CESP, JNU, New Delhi

Email: [rwho2007@gmail.com](mailto:rwho2007@gmail.com)

[doi.org/10.33329/ijbmas.63.1](https://doi.org/10.33329/ijbmas.63.1)



#### ABSTRACT

During last few decades the discourse of development has been experiencing a shift away from the era of “Lewisian path”, from capital-centric and growth-centric trickle down trajectory, towards “targeted intervention”. The idea of “inclusive growth” to generate quantity and quality of employment and ensure basic “entitlement” and “capability” has been prominent. In this context, informal sector, with increasing limit of agriculture and formal manufacturing sector in employment generation, emerges as a potential candidate for income and employment creation. The idea of “transition” to solve the problem of “modern-traditional dualism” through expansion of modern sector seems less convincing, and, instead of being withered away, informal sector has become an important segment of governance to mediate a “modern-traditional symbiosis”. However, such a sector is extremely heterogeneous and complex and embedded within the traditional socio-economic-political-cultural framework of majorly “subsistence” or “need economy”. This study explores the dynamic linkages not only between formal and informal sector, it also traces the relationship between the different segments within the informal sector namely OAME, NDME, DME.

On the basis of this study, we find close linkages between formal sector and the urban informal sector. Due to the dynamic modern characteristics of the urban informal sector, it engages with the formal sector primarily through the relation of sub-contracting. Thus there exist supply as well as demand side linkages between these two segments of the economy. And the rural segment of the informal sector and the formal sector are not associated except both use the common natural resources. Since both extract from the common resource pool and use common raw materials, these two segments are engaged in conflicting relationship. Thus when the formal sector grows, it uplifts the urban informal sector by incorporating it in its expand dynamics but the rural informal sector, particularly the petty informal activities shrink. Together all these, we conclude increasing immiserisation of the OAME during the last three decades or so. Since, the

unorganised manufacturing sector is pre-dominated by the OAME segment; we basically are seeing the immiserising growth of the informal sector.

**Keywords:** Informal sector, formal-informal linkages, manufacturing, India, Liberalisation

---

## 1. Introduction:

The inter-sectoral relationship of the (in)formal economy sharing the 'non-agricultural economic spaces' vis-à-vis with the agriculture comes straight forward when the process of the development is questioned. For the complete understanding of this sector, these relationships are now far more important from the development policy perspective. The linkages between the formal and the informal sector have a significant influence on determining the level of employment and out of the informal sector. Dichotomising the urban informal sector into traditional and modern segment, an approach to formulate a relationship between formal and informal sector of the economy had been initiated (Ranis and Stewart, 1999). The traditional sector has been seen as low capital centric and with low labour-productive sector where the modern informal sector is where the capital driven, advanced dynamic technology is used and higher skilled enriched labour productivity generates substantial in-come/profit. The linkage with the formal sector too also differs with respect when it comes to consumer market or producer market. In the former (consumer) market, the conflict arises as the modern informal sector and formal sector directly engage themselves into competition whereas the traditional informal sector serves as the supply segment to the low end consumers. On the producer market, modern traditional sector serves a complementary relationship with the formal sector being involved in a sub-contracting relationship. Thus in the modern times, due its dynamic capability of generating substantial employment outside the sector of agriculture, informal sector has been in the core locus of development paradigm for the mainstream policy makers as well as alternative advocators of development. Instead of considering formal sector to be capable enough for growing on its own, for the 'inclusive growth' the current development paradigm researchers consider informal sector as competent enough and proposed for the improvement of this sector (Marjit & Kar, 2011; NCEUS, 2007; Mitra, 2011; Bangassar, 2000).

The current dominant paradigm of development acknowledges the long persistence of non-agricultural informal sector and considers it as a 'dispersed development engine', the promotion of which is an important part of the so called agenda of 'inclusive growth'. However, any analysis concerning informal sector and any policy towards its promotion cannot neglect the fact that it is situated within an economy dominated by agriculture and most importantly modern capitalist formal sector. Thus it becomes a crucial issue that needs to be thoroughly examined to trace the changing paradigm of development shifting its focus from formal sector-centric 'trickle-down' trajectory to 'development management' promoting the informal sector.

## 2. Literature Review:

Harris and Todaro [12] recognized that rural-urban migration in a Lewisian "dual economy" [16] may continue in condition of open urban unemployment. Hart [13] introduced the concept of urban "informal economy" as a site of economic activities of the "working poor". Ranis and Stewart [27] presented a disaggregated model of developing economy- rural sector, urban formal sector, a dynamic informal sub-sector with linkages to formal sector and a traditional static informal sector, but still with an optimism of a delayed process of integration of informal. Then active government intervention to re-habilitate the marginalized "surplus humanity" [11] were increasingly advocated. In Indian context a bulk of literature studied and explored different aspects of informal sector. A most comprehensive policy document is NCEUS Report 2007 [24], which specifically empathized on "targeted policy" for informal sector as a site of governance for "inclusive growth" and "employment maximization".

In literature, a lot of work has been directed to analyse the interaction between informal sector and the agriculture but a few has been there to analyse formal-informal sector relationship in particular. It's been argued by scholars that informal manufacturing sector is negatively associated with the organised sector [19] and positively associated with urban poverty [20]. The mainstream view is that there exists a demand side or supply side linkage between formal and informal sector and thus attribute complementarity between the two sectors [25]. According to the structuralist view, the very existence of the informal sector is due to the urge of the capitalist firms to reduce input and labour cost [22]. This complementary relationship is found either through forward linkages or backward linkages. The forward linkage implies that the formal sector directly use the product produced by the informal sector or vice-versa. The informal sector's backward linkages to the formal sector happen through the channel of subcontracting. The petty commodity producers produce the required inputs for the capitalist firms of the formal sector. Since both the informal and formal sector share the common or same market for products, a section of the informal sector literature argues that there exists a demand-side conflicting relationship between the formal and informal sector [28]. In connection to the idea of 'relative surplus population', concept developed by Marx, some scholars term informal sector as 'surplus population' where mutual exploitation as a survivalist strategies among the increasing population of the developing nations [11]. This aspect of the informal sector is connected to the Marx's idea of the process of relegating a huge section of the economy to precarious forms of employment [29].

Saumya Chakrabarti [7] analyzed the interaction of informal and formal sector of the Indian economy in relation to the other economic activity and considering the whole informal sector and using the empirical analysis concluded that "There is a positive relation between formal sector and urban informal sector due to demand- and supply-side linkages". This aspect of concurrent paradigm of 'inclusive development' in the Indian economy also been put forward in terms of 'development by dispossession' [4]. Using a framework of general equilibrium, Marjit [17] analyzed the 'market-driven resource allocation' between the two segments – informal and the formal of the economy and this leads to conflict of interest in the economy. In all these analysis, it is argued that agriculture plays a key and significant role when formal and informal sector relationship is considered.

By developing a framework based on class-qua-surplus Sneathih Bhattacharya [5] analyzed the process of creation, appropriation and distribution of surplus in the Indian informal manufacturing enterprises and pointed to "an embedded dualism between the capitalist and the non-capitalist enterprises in the informal sector". He argued that the non-capitalist space of the informal sector also produces net surplus value which is only used for consumption purpose only rather than for accumulation where as in contrast the capitalist in-formal firms helps in accumulation by reproducing on an 'expanded scale'. The inherently exclusionary process of current development/growth in India is encouraging to increase the relative poverty in the informal sector. This reality is been widely accepted by planning commission or NECUS reports.<sup>1</sup> Through the aspect of labour productivity and capital mobility and prioritising the role of complete capital mobility among the sectors, Marjit and Kar [18] have shown that "downsizing of the capital intensive import competing sector may lead to increased output in the labour-intensive informal segment and rise in informal wage".

In Indian case, some informal and formal enterprises or firms are linked through the outsourcing, and thus exists complementary relationship be-tween them [26]. An informal firm can benefit by having a production linkage with a formal enterprise under the trade liberalisation [2]. Ranis and Steward [27] also talked about how these linkages can lead to improvement within the informal sector itself. In the African context, some studies have shown that how size of the informal activities can be positively benefited from the sub-contracting of the informal firm with the formal enterprises. ([14], [1]).

In the backdrop of liberalisation and labour flexibility [30] study of Indian manufacturing sector shows the “effect of labour-market restrictions on the complementarity or substitutability between formal and informal manufacturing activity as well as on how trade liberalization affects informal manufacturing activity”. In India, flexible labour market tends to shift the terms of structural change in the liberalized period skewed towards the formal sector [23]. In case of Indian manufacturing sector more labour-intensive segments of the formal sector exhibit a positive relationship with the informal sector activities [30].

### 2.1 Formal sector -agriculture -informal sector interaction:

Researchers have argued the informal sector as a dynamic sector and a major source of subsistence outside the modern formal sector and agriculture. Saith [28] argued that there is a deep relationship –a virtuous between petty agriculture and the labour-intensive informal sector. The Indian agrarian distressed has helped for an expansion of the petty informal sector and this informal sector has helped the distressed agriculture and has thus survived [15]. A casual look at the Indian data shows that in the post liberalisation period, the agricultural output is growing moderately and the organised/formal sector employment is almost stable, though the value of output in the formal sector manufacturing is rising. This pushes for a re-look at the formal sector and agriculture relationship. The value of output in the informal sector manufacturing sector is rising steadily. By accommodating all these observations, this can be argued that due to the rising capital intensity in the formal sector , it is leading to retarding employment generation and hence the shortfall in the demand of food. So, it is important to include informal sector in agriculture-formal sector industry linkages/relationship<sup>1</sup>.

Following the ‘segmented labour market’ approach, it has been argued that as the formal sector squeezes, it helps in pushing the ‘surplus labour’ to flow from formal to informal sector. And in this process, the prevailing wages in the informal sector gets reduced. Ultimately, with the fall of factor cost price in the production, informal sector expands itself ([27],[17],[18],[9]). In short, supply-side constraint is at the core theme of these studies. In the backdrop of agricultural supply constraints, as the formal sector and the urban informal sector grow using the resources from the agriculture, it creates a fundamental conflict in the short run between the formal sector and the informal sector [8] and between the rural non-farm sector and urban informal sector [6].

Chakraborty & Kundu [8] in their paper addresses the issues of potential-creation (output and employment) in industry and realization of this potential. Taking into account different aspects such as inventory stock of food, inter-sector al capital flow, savings and distinctly analyzing the sources of demand i.e. redistribution and the supply-side contribution of agriculture to the industry, it concludes the complementariness between the two sectors<sup>2</sup>.

Following the literature, we can trace the plausible associations between formal sector and informal sector:

- This association could be complementary.
- There might exist a demand-side conflict.

<sup>1</sup> “Since both formal and informal sector coexist and cater to the common or segmented markets either staying independently or through interlinked process, the growth of the informal sector is affected by various micro and macro-economic policies pertaining to formal sector of the economy. As a large portion of the labour force is concentrated within the informal sector [in India], any policy initiatives pertaining to the formal sector affect both labour and capital-market of informal non-agricultural sector [18]. More-over, agriculture plays a pivotal role in this interlinked circuit. On the one hand, agriculture acts as a supply side factor providing agro-raw materials for production and wage goods to the workers of both formal and informal sector; on the other hand, it creates demand for both consumer and capital goods through farm – nonfarm linkages. Hence, agriculture is also an integral part of this supply and demand- driven growth of informal sector.”

<sup>2</sup> “...without any exogenous expansion of food-supply, the formal sector cannot expand in real terms, a mere expansion of food-supply by itself does not in any way guarantee an expansion in the demand for the formal sector output and hence, cannot guarantee its own expansion in the formal sector either”.

- Formal sector and informal sector could be two disconnected entities.

### 3. Data source and methodology:

We use primarily the secondary data on the formal sector as well as informal sector and the agricultural sector for our analysis. Since informal manufacturing sector is at the core of our analysis, this limits our study. We have, across the states and industry group cross section and over-time secondary data for the informal sector provided by the NSSO (quinquennial rounds based) for the pre and post liberalisation period (1990). We use unorganised manufacturing sector data provided by NSSO as a proxy for the informal sector. So, for our analytical purpose, we primarily use unit level data of NSSO 51<sup>st</sup> round (1994-95), 56<sup>th</sup> round (1999-00) and 62<sup>nd</sup> round (2005-06). Moreover, for some comparison purpose NSSO 55<sup>th</sup> round (2000) and NSSO 67<sup>th</sup> round (2010-11) data of the informal sector. Corresponding year data of formal or organised manufacturing sector data are taken from Annual Survey of India (ASI). Various net state domestic product data are taken from EPW-RF. Population data that we use is taken from various Economic Surveys.

For segregation, we will start with ASI. We look at the variations of the inter-sectoral relations in India across major states and over time, especially the very nature of this relation of the formal sector-urban informal sector and formal sector-rural informal sector. For the whole analysis we use unorganised manufacturing sector as a proxy for the whole non-agricultural informal sector. For our empirical analysis of the relation between the organised and rural-urban unorganised manufacturing sector and between organised and different segments of informal sector in the presence of other activities, we consider the following variables as dependent variables: total no of urban unorganised manufacturing enterprises, total no of workers, gross value added, fixed asset and the same for the rural section. The other variables that we will take into account are like: total no of organised manufacturing enterprises, total no of workers, gross value added, fixed asset and NSDP, NSDP for agriculture, share of marginal holdings in total holdings for different state level. Since agriculture is an influential factor in formal sector-informal sector relationship, we use NSDP from agriculture data. Pooling data for different states across rural-urban location, we calculate partial correlation coefficients to measure the dynamics of association between formal sector and informal sector and between formal sector and different segments of informal sector as well. Then depending on these correlations and also other variables using the same pooled data, we run OLS different regressions based on LSDV technique taking into account those relevant variables which pass/qualify our correlation-coefficient test involving formal sector, informal sector and other sectors to find out the extend of variations of informal sector with the change in formal sector. Before using any regression model, we have used Ramsey RESET test to make sure that there is no non-linearity in the equation specification.

For the NSSO periods 1989-90 and 1994-95, we consider 16 major states and for NSSO periods 2000-01 and 2005-06, we consider 19 major states. The states are -Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamilnadu, Uttar Pradesh, West Bengal, Delhi and Chattisgarh, Jharkhand, Uttaranchal. The reason behind partial to these states is that during the post-liberalisation study periods i.e. for the NSSO periods 1994-95, 2000-01, 2005-06 these states account for the 98.26%, 97.31%, 97.46% share in the total unorganised manufacturing employment in India respectively.

### 4. Description of variables and analysis:

For the variables of the year 2010-11, the source is the NSSO 62<sup>nd</sup> round of informal sector. The variables used for this sections are as follows: value added of the rural informal sector (va\_in\_r), value added of the urban informal sector (va\_in\_u), value added of the informal sector (va\_in), value added of the organised sector (va\_org), net state domestic product from agriculture (nsdp\_agr), net

state domestic product from service (nsdp\_ser), aggregate net state domestic product (nsdp), population (pol).

**Correlation Marix:**

	<b>Va_org</b>	<b>Va_in_r</b>	<b>Va_in_u</b>	<b>Va_in</b>	<b>Nsdp_agr</b>	<b>Nsdp_ser</b>	<b>nsdp</b>
<b>Va_in_r</b>	0.271	1					
<b>Va_in_u</b>	0.8536*	0.4536	1				
<b>Va_in</b>	0.7801*	0.6905*	0.9578*	1			
<b>Nsdp_agr</b>	0.2886	0.8177*	0.4018	0.5897*	1		
<b>Nsdp_ser</b>	0.8409*	0.5603	0.9315*	0.9366*	0.4493	1	
<b>nsdp</b>	0.8705*	0.6130**	0.8985*	0.9269*	0.5765	0.9758*	1
<b>pol</b>	0.3833	0.9266*	0.5409	0.7378*	0.8473*	0.5775	0.6494

**Note:** \*, \*\*, \*\*\* represent 1%, 5%, 10% level of significance respectively

Table 1: Effect of productivity of formal sector on informal sector

	<b>Regression 1</b>	<b>Regression 2</b>	<b>Regression 3</b>
<b>Independent variables</b>	<b>Dependent variables</b>		
	<b>va_in_r</b>	<b>va_in_u</b>	<b>va_in</b>
<b>va_org</b>	-0.120** (.046)	.325*** (.075)	.0621 (.157)
<b>nsdp</b>	.0192** (.008)	-2.41** (8.15)	.0701** (.0275)
<b>pol</b>	486.92*** (85.13)	652.15*** (198.85)	527.98* (286.97)
<b>const</b>	-1.80 (4.29)	6.07 (2.02)	-9.99 (1.45)
<b>Number of observations</b>	16	16	16
<b>adjusted R<sup>2</sup></b>	0.8861	0.8427	0.8655
<b>F value</b>	39.89	27.78	33.17
<b>Prob &gt; F</b>	0.0000	0.0000	0.0000

**Note:** \*\*\*, \*\*, \* represent 1%, 5%, 10% level of significance

From the above correlation matrix and the three regression results (Table 1), it clearly shows that the behavioural pattern of the rural and urban segment of the informal sector is completely in contrast. That the dichotomous behaviour of rural and urban sector exists in the informal sector analysis.

The main target here is to look --if we control the overall economy i.e., the nsdp and the population, how the behavioural pattern of the different segments of the informal sector changes with the behavioural pattern of the formal or organised sector. Inferring the results, if we control the nsdp and the population variable, the rural segment of the informal sector is negatively explained by the formal sector and the explanation is significant whereas this relationship is significantly positive between the urban segment of the informal sector and the formal sector. And considering the whole informal sector, this relationship is not explained significantly by the activity of the formal sector.

Now it is need to be checked whether this strikingly different pattern of the rural and urban in-formal sector is typically a one period phenomenon or this is the continuous pattern in the Indian informal sector. So, again we have done a same set of analysis taking the cross sectional data for the NSSO 67<sup>th</sup> round (2010-11) which provides us a complete data for the informal sector like as NSSO 55<sup>th</sup> round (1999-00). And we get same contrasting result as before. So, this contrasting behavior within the different segments of the informal sector is a characteristics pattern of the Indian economy that also comes out of the previous regression results.

#### 4.1 Dichotomy in the informal sector:

In the following analysis, we look at the impact of organised sector employment (*prsn\_or*), urban informal sector employment (*wk\_in\_u*) and *nsdp* from service sector (*nsdp\_ser*) on the rural informal sector employment (*wk\_in\_r*). Similarly, we look at the impact of organised sector employment, rural informal sector employment and *nsdp* from service sector on the urban informal sector employment. Basically, we trace pattern of these explanatory variables on rural and urban informal sector employment.

For these purpose, we use state level data from NSSO 55<sup>th</sup> and 67<sup>th</sup> rounds. As stated earlier, we select only 19 states for this analysis as used earlier. We pooled the data over these two NSSO periods. Here *d\_67* represents the dummy variable.

Table 2: Effect on the employment of different segments of informal sector

Independent variables	Regression 4	Regression 5
	Dependent variables	
	<i>wk_in_r</i>	<i>wk_in_u</i>
<i>wk_in_r</i>		.543* (.107)
<i>wk_in_u</i>	1.093* (.144)	
<i>prsn_or</i>	-1.820* (.628)	2.430* (.323)
<i>nsdp_pol</i>	-63.018* (9.808)	33.415* (7.059)
<i>d_67</i>	-1091031 (437561.1)	658810.6 (286191.7)
const	3182658 (559708)	-1469039 (372743)
Number of observation	35	35
$R^2$	0.7579	0.8651
F value	26.90	47.41
Prob > F	0.0000	0.0000
*, **, *** represent 1%, 5%, 10% level of significance respectively		

4.2 Formal-informal sector linkages:

Given the dichotomous relation within the informal sector as shown in the last section, the rural and urban informal sectors are bisected into two dimension—only DMEs and other section consists of all enterprises without DMEs. The data sources are NSSO 51<sup>st</sup>, 56<sup>th</sup>, 62<sup>nd</sup> round. For each regression we follow the robust process and checked for multi-colinearity using the LSDV techniques.

Table 3: Effect on the employment on rural and urban informal sector without DME

	Regression 6	Regression 7
Independent variables	Dependent variables	
	wk_in_r_notdme	wk_in_u_notdme
wk_in_r_notdme		.058** (.029)
wk_in_u_notdme	1.577* (.891)	
wk_org	-1.068*(.656)	.630**(.098)
pol	.009*(.005)	.005*** (.0009)
nsdpAgr_nsdP	224281*(114649)	-682321** (341866)
d_51	-794.43(280.569)	527.553(629.341)
d_56	-211.309(234.929)	615.991(437.349)
const	-138.541(224.926)	-252.301(679.37)
No of observations	54	54
R <sup>2</sup>	0.5442	0.8806
F value	56.85	62.67
Prob > F	0.0000	0.0000
Note: ***, **, * represent 1%, 5%, 10% level of significance		

Table 4: Effect on the productivity on rural and urban informal sector without DME

	Regression 8	Regression 9
Independent variables	Dependent variables	
	va_in_r_notdme	va_in_u_notdme
wk_in_r_notdme	54.261*(10.086)	-18.735*** (9.159)
va_in_r_notdme		.412*(.134)
va_in_u_notdme	0.244*** (.123)	
va_org	-.007 (.005)	.035* (.007)
nsdpAgr_nsdP	-4.60 (6.18)	-1.71 (1.09)
pol	34.642* (28.228)	82.924*(21.660)
d_51	-6.35(1.04)	3.26(1.63)
d_56	-2.61(1.07)	2.41(1.33)
const	3.46(1.71)	6.83 (2.48)
Number of observation	54	54
R <sup>2</sup>	0.8850	0.8279
F value	48.75	41.52
Note: ***, **, * represent 1%, 5%, 10% level of significance		

Regression results from table 4 shows an inverse relation between rural informal sector and urban informal sector with respect to the organised sector after controlling all economic variables. Again with respect to the NSDP from agriculture, same contrasting result prevails. Looking at the probable influence of the employment of the rural informal sector and the value added in the urban informal sector on the rural informal sector, one can find interesting contrast in formal-informal sector relation.

To have more rigorous analysis of the probable effect of the formal/organised sector on the rural as well as urban informal sector we look into the subsequent regressions.

Going through the regression analysis 10-13 as depicted in table 5 and table 6, it is prominent that urban informal sector variables cannot significantly explain the behaviour of the variables pertaining to the informal sector activities. This with the other regression results establish the fact that rural sector is close linkages with the agricultural sector and the overall population but is hardly associated with the urban informal sector or with the organised/formal sector.

Table 5: Estimating the effect on the employment of one segment of informal sector on another

	Regression 10	Regression 11
Independent variables	Dependent variables	
	wk_in_r_notdme	wk_in_r
wk_in_u_notdme	.389(.482)	
wk_in_u		.053(.311)
nsdpAgr_pol	-3.82(2.87)	-3.68*** (2.97)
pol	.0163*(.003)	.0222**(.003)
d_51	199.39(276.86)	215.99(285.27)
d_56	283.59(323.83)	292.295(348.168)
const	-360.77(166.18)	-567.05(180.95)
Number of observation	54	54
R <sup>2</sup>	0.4988	0.5395
F value	20.53	21.14

Note: \*\*\*, \*\*, \* represent 1%, 5%, 10% level of significance

Table 6: Estimating the effect on the productivity of one segment of informal sector on another

	Regression 14	Regression 15	Regression 16	Regression 17	Regression 18	Regression 19
Independent variable	Dependent variable					
	wk_oame	wk_ndme	wk_dme	va_oame	va_ndme	va_dme
nsdp_nagr_ndp	-1156896 (1021251)	1094414* (252100.8)	2121388* (352339.8)	-1.40 (9.54)	3.46 (7.42)	4.09* (1.17)
pol	.023* (.002)	.005* (.0005)	.006* (.0008)	1.69e+07* (3107336)	3216579* (1937436)	1.79e+07*** (6642982)
d_51	112136.5 (267336.3)	136316.8 (52778.25)	232932.2 (78339.48)	-1.37 (1.93)	-4.62 (1.27)	-1.90 (4.13)
d_56	125.62 (245.67)	475.1 (493.7)	-9503.54 (66274.02)	-3.33 (2.05)	-2.95 (1.52)	-1.60 (3.74)
const	913.47 (953.71)	-922.23 (220.19)	-1811838 (311184.2)	4.92 (1.96)	2.95 (9.61)	9.70 (3.62)
Number of observations	54	54	54	54	54	54
R <sup>2</sup>	0.5937	0.6586	0.6515	0.7273	0.7356	0.5208
F value	32.53	28.57	28.87	33.34	31.76	33.87

Note: \*\*\*, \*\*, \* represent 1%, 5%, 10% level of significance

### 4.3 Intersectoral dynamics of informal sector

Here we consider the unorganised manufacturing data of India economy after the implementation of different policy measures during the liberalisation era. We compare between the OAME, NDME and DME separately to have an insight about their relation with the other sectors of the economy. The comparison period consists of the NSSO three rounds data of the un-organised manufacturing sector namely NSSO 51<sup>st</sup> round (1994-95), 56<sup>th</sup> round (2000-01) and 62<sup>nd</sup> round (2005-06). In regression 14-16, we regress the worker of different segments of informal sector i.e. OAME, NDME and DME separately on non-agricultural nsdp/ndsp (nsdp\_nagr\_ndp) and population (pol). Here population acts as a proxy for overall state size. In regression 17-19, we regress the value added of different segments of informal sector i.e. OAME, NDME and DME separately on agricultural nsdp/population (nsdpAgr\_pol), non-agricultural nsdp/population (nsdp\_nagr\_pol) and population (pol). Doing so, we compare the relation between the OAME or NDME or DME with the agriculture and the non-agriculture and the population. In most of the cases, insignificance of the dummy variables shows the stable relationship over the time.

Table 7: Estimating inter-sectoal dynamics of informal sector

	Regression 12	Regression 13
Independent variables	Dependent variables	
	va_in_r_notdme	va_in_r
va_in_u_notdme	-.0005(.106)	
va_in_u		.0244***(.067)
nsdpAgr_pol	-.0000164*(.0000179)	-.0000123***(.0000248)
pol	170.38*(21.06)	230.62*(26.61)
d_51	-5.68(1.60)	-9.84(2.41)
d_56	-9.75(2.40)	-4.01(3.33)
const	3.29(1.54)	5.64(2.19)
Number of observation	54	54
R <sup>2</sup>	0.6400	0.6670
F value	22.52	29.24

Note: \*\*\*, \*\*, \* represent 1%, 5%, 10% level of significance

The above analysis shows a contrasting result – while the NDMEs and DMEs are closely and positively related with non-agricultural NSDP, the OAMEs are closely related with the overall size of population. The reason of this conflicting relationship could be OAMEs are independent of the activities of industrial and service sectors or the growth of these sectors have a negative impact on the OAMEs.

**4.4 Influence of the formal sector on the unorganised sector:**

Here we contrast the effect of formal sector on different segments of the informal manufacturing sector.

Table 8: Estimating influence of the formal sector on informal sector

	Regression 20	Regression 21	Regression 22	Regression 23	Regression 24	Regression 25	Regression 26	Regression 27	Regression 28
Independent variables	Dependent variable								
	wk_oame	wk_ndme	wk_ndme	wk_dme	wk_dme	wk_oame	wk_dme	wk_ndme	wk_oame
wk_oame		.0889171*** (.0263614)			.0300466 (.0231434)				
wk_ndme	3.508*** (.903)			.524*** (.132)					
wk_dme			.445*** (.148)			1.008 (.957)			
prsn_or	-.779** (.328)	.231*** (.046)	.023*** (.082)	.350*** (.079)	.472*** (.069)	-.433*** (.551)	.473*** (.069)	.234*** (.054)	.044 (.291)
nsdpAgr_ndp	375.67*** (128.63)	-830.11*** (230.21)	-111.094 (230.788)	-990.33** (214.593)	-140.51** (277.05)	260.70** (164.)	-136.81** (274.37)	-720.96*** (218.66)	122.75** (962.72)
pol	.009*** (.003)	.001** (.0006)	.002* (.0006)	.001** (.0009)	.003** (.001)	.019*** (.003)	.004** (.0008)	.003*** (.0005)	.023*** (.003)
d_51	-140.43 (254.17)	595.02 (398.35)	256.22 (457.37)	59.99 (468.50)	928.27 (516.08)	266.7 (305.36)	958.09 (516.97)	683.29 (451.22)	992.66 (278.51)
d_56	791.73 (194.68)	240.4 (338.52)	989.3 (367.59)	140.34 (346.81)	477.1 (392.61)	118.65 (243.05)	859.675 (402.18)	137.25 (414.06)	127.32 (248.32)
const	-5456 (2268.87)	1044.29 (492.61)	250.44 (399.69)	835.17 (466.54)	1339.32 (562.68)	-3877.82 (2351.31)	1261 (549.73)	812.53 (492.60)	-2606.43 (1868.23)
Number of observations	54	54	54	54	54	54	54	54	54
R <sup>2</sup>	0.7205	0.8280	0.8085	0.8822	0.8509	.6061	0.8462	0.7501	0.5938
F value	27.77	41.41	31.91	98.18	51.18	28.29	58.90	29.54	27.39

Note: \*\*\*, \*\*, \* represent 1%, 5%, 10% level of significance

From the above analysis, given the inter-sectoral influences, there exist contradictory results as the relations of OAMEs, NDMEs and DMEs are concerned with the organised sector. Controlling all the inter-sectoral aspects and overall populations, negative relation persists between the formal sector and OAMEs but a positive relation among NDMEs and DMEs with the formal sector.

**5. Discussion and conclusion:**

This put us to critically look at the mark of progress in the era of so called 'inclusive development' as the far as the relation between the formal and the informal sectors are concerned. So far we have seen that there has been a mark of progress in the organised or formal sector. Now against this sign of progress, the OAMEs are shrinking both in terms of employment and the value added but not the NDMEs or DMEs. Now if the mark of progress of the formal sector inducing one segment of the informal sector to be contracted, then this should also be reflected on the other segments of the informal sector. But we have seen that OAMEs and the establishments are behaving in opposite direction. Hence this confirms an inverse relationship between the OAME and the formal/organised sector. So the formal sector and its allied activities are giving the negative push

against the OAMEs. And this is the reason why we have seen the deteriorating conditions of the OAMEs in the earlier analysis. The possible reason could be that the expansion of formal sector and its allied sector as well as the urban informal establishment is happening at the cost of agricultural squeezing. In fact, modern unorganised segments of the informal sector are closely associated with the modern agriculture and the OAMEs are primarily related to the small scale agriculture or petty agricultural activities. And this resource drain, the root cause of “immiserising growth” of the OAMEs, is negated in case of NDMEs/ DMEs as these sectors can rip the benefit of the formal sector association due its technology and other comparative production advantages. The modern formal sector pull the establishments from immiserisation but push the OAMEs towards it and thus proves the existence of supply side conflict between the formal sector and the OAME sector.

Now, from all the analysis above we have found that with the expansion of formal/organised sector, though the relative size of the rural informal sector shrinks but there has been an expansion in the urban informal sector after appropriate controlling of the relevant variables. Since the urban informal sector, induced by the formal sector, is moving towards more value adding, is this shows an ‘inclusive’ expansion and/or transition within the Indian economy? One important thing here is that with the expansion of the formal sector, the urban informal sector is being benefited as the absolute or relative size has increased but the impact on the productivity variables is somewhat ambiguous, it does not clearly shows a positive movement. And earlier, while we did some tabular analysis, we have seen that in case of urban informal sector the firm size were not substantially affected under the period of study. Increasing labour and capital productivity and the capital-labour ratio—these are all the indicator of possibility of accumulation and growth. And in the formal/organised sector, we can find the increasing picture of all these indicators. If we put this two picture side by side, in one hand the situation of the formal sector and in other hand the situation of the informal sector, we can see that either there is a no development with respect to the surplus generation in the informal sector or a deterioration of the informal sector—which leads to some formal-informal sector conflict. Only there has been some change in the sectorial composition within the informal sector but not the overall improvement despite an expansion of the formal sector.

The probable reason could be – as the formal sector grows it draws raw material from the agriculture as well as from the informal sector for its low cost and hence growth of formal sector induces growth of urban informal sector which in turn uses the raw materials from the agriculture itself. Thus it creates agricultural supply constrains which results in the ‘immiserising growth’ of rural informal sector particularly for OAMEs. Hence there exists a conflicting relationship between the rural informal sector and the formal sector as well as with the urban informal sector.

#### References:

- [1]. Arimah, B. C.. Nature and determinants of the linkages between informal and formal sector enterprises in Nigeria. *African Development Review*, 2001, 13(1), 114-144.
- [2]. Bairagya, I. Liberalization, informal sector and formal-informal sectors’ relationship: a study of India, 2010.
- [3]. Bangasser, P. E. . *The ILO and the informal sector: an institutional history*. Geneva: ILO, 2000.
- [4]. Bhaduri, A. . What remains of the theory of demand management in a globalising world?. *The Economic and Labour Relations Review*, 2014, 25(3), 389-396.
- [5]. Bhattacharya, S. . *Non/capital, class, and development: the case of informal manufacturing in India*. University of Notre Dame, 2010.
- [6]. Chakrabarti, S. Contradictions of " Doing Development": A Structuralist Framework. *American Review of Political Economy*, 2009, 7(1/2), 1.
- [7]. Chakrabarti, S. The formal–informal dichotomy: Revisiting the debate on the agriculture–industry linkage. *The Economic and Labour Relations Review*, 2014, 25(1), 154-178.

- [8]. Chakrabarti, S., Kundu, A., & Nandi, A. K. Farm–Non-Farm Linkage in India: A Structuralist Perspective. *Indian Journal of Agricultural Economics*, 2011, 66(902-2016-67899).
- [9]. Chaudhuri, S., & Banerjee, D. Economic liberalization, capital mobility and informal wage in a small open economy: A theoretical analysis. *Economic Modelling*, 2007, 24(6), 924-940.
- [10]. Davis, J. R., & Bezemer, D. J. The development of the rural non-farm economy in developing countries and transition economies: Key emerging and conceptual issues, 2004.
- [11]. Davis, M. (2004). Planet of slums. *New left review*, 26, 5.
- [12]. Harris, J. R., & Todaro, M. P. Migration, unemployment and development: a two-sector analysis. *The American economic review*, 1970, 126-142.
- [13]. Hart, K. Informal income opportunities and urban employment in Ghana. *The journal of modern African studies*, 1973, 11(1), 61-89.
- [14]. House, W. J. Nairobi's informal sector: Dynamic entrepreneurs or surplus labor?. *Economic Development and Cultural Change*, 1984, 32(2), 277-302.
- [15]. Kundu, A., & Chakrabarti, S. NON-AGRICULTURAL INFORMAL SECTOR IN INDIA: IMPACTS OF AGRARIAN CONDITIONS. *Indian Journal of Labour Economics*, 2010, 53(2).
- [16]. Lewis, W. A. Economic development with unlimited supplies of labour. *The manchester school*, 1954, 22(2), 139-191.
- [17]. Marjit, S. Economic reform and informal wage – a general equilibrium analysis. *Journal of Development Economics*, 2003, 72(1), 371-378.
- [18]. Marjit, S., & Kar, S. *The outsiders: Economic reform and informal labour in a developing economy*. Oxford University Press, 2011.
- [19]. Mitra, A. Understanding the 'Informal Sector'. *Economic and Political Weekly*, 1996, Vol. 31(Issue No. 24).
- [20]. Mitra, A. Relative size of informal sector. *Economic and Political Weekly*, 2006, Vol. 41(Issue No. 25).
- [21]. Mitra, A. Insightful but incomplete. *Economic and Political Weekly*, 2011, Vol. 46(Issue No. 44-45).
- [22]. Moser, C. O. Informal sector or petty commodity production: dualism or dependence in urban development?. *World development*, 1978, 6(9-10), 1041-1064
- [23]. Mukherjee, D. Informal Manufacturing Sector in India: Pre and Post Reform Growth Dynamics. *Indian Journal of Labour Economics*, 2004, 47(2):269-310
- [24]. NCEUS. Comprehensive legislation for minimum conditions of work and social security for unorganised workers. Technical report, 2007.
- [25]. North, D. *Institutions, Institutional Change and Economic Performance*, Cambridge, Cambridge University Press, 1990.
- [26]. Pieters, J., Moreno-Monroy, A. I., & Erumban, A. A. Formal-informal linkages and informal sector dynamics: evidence from India. In *31st General Conference of The International Association for Research in Income and Wealth*, 2010, August, St. Gallen, Switzerland (pp. 22-28).
- [27]. Ranis, G., & Stewart, F. V-goods and the role of the urban informal sector in development. *Economic development and cultural change*, 1999, 47(2), 259-288.
- [28]. Saith, A. *The rural non-farm economy: Processes and policies*. International Labour Organization, 1992.
- [29]. Sanyal, K. *Rethinking capitalist development: Primitive accumulation, governmentality and post-colonial capitalism*. Routledge India, 2014.
- [30]. Sundaram, A., Ahsan, R. N., & Mitra, D. Complementarity between formal and informal manufacturing in India. *Reforms and Economic Transformation in India*, 2012, 49-85.