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Surveys of Informal Sector Enterprises—Some Measurement Issues

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Abstract

The informal sector represents an important part of the economy and the labor market in many countries, especially developing countries. Measurements of the informal sector are of intrinsic interest in their own right and contribute toward exhaustive measures of gross domestic product (GDP). Considering that the informal sector provides employment for income creation to a large number of poor and contributes significantly to the GDP of many developing countries, collecting statistics through surveys for accurate measurement of output, net surplus, and value added is critical for national accountants, other users, and for researchers working on policy-related issues. As most of the informal sector enterprises do not maintain business accounts, the survey responses depend highly on the recall by the respondent and the skills of the interviewer. Thus a very important aspect of the surveys of informal sector enterprises is the design of the survey questionnaire and the details to be captured in data collection in order to accurately measure the characteristics of these enterprises. The details sought in the survey questionnaire have implications on the accuracy of data and hence in the measurement of expenditure, receipts, profits, and gross value added (GVA) of these enterprises. In this paper we examine the differences in the measures of (i) profits of an enterprise derived from a detailed set of questions on incomes and expenses, versus profits obtained through a single direct question; and (ii) GVA obtained using the production approach as the difference of output and intermediate consumption from a detailed set of questions on incomes and expenses, versus GVA using the income approach by asking a few questions on factor incomes, and a single direct question on profits. We use data from the 56th round survey of unorganized manufacturing conducted by the National Sample Survey Organization of India during the period July 2000–June 2001. We also examine if the differences vary with the characteristics of the enterprises, and suggest further empirical research to develop suitable tools for providing accurate measurements of informal sector enterprises.

I. Introduction

The informal sector represents an important part of the economy and the labor market in many countries, especially developing countries, and plays a major role in employment creation, production, and income generation (OECD 2002). The informal sector as defined in the resolution of the 15th International Conference of Labor Statisticians held in January 1993 refers to economic activities, i.e., production and distribution of goods and services by the operating units of the households, which essentially differ from the formal sector in terms of technology, economies of scale, use of labor-intensive processes, and virtual absence of well-maintained accounts. A variety of terms have been in vogue within the administrative setup and statistical systems of countries to describe enterprises satisfying one or more similar characteristics, such as “unregistered”, “unorganized”, micro-enterprises etc.

The informal sector represents a substantial portion of economic activity, especially in developing and transition countries. Estimates (Charmes 2000) show that the sector accounts for more than two thirds of total employment and more than one third of the total gross domestic product (GDP) of the nonagricultural sector in Asia. In view of its estimated size the sector invites high policy interest in many parts of the world. Given their high potential for job creation and income generation in developing economies, the informal sector is gaining the attention of policymakers. Therefore data on various characteristics and operations of these enterprises, output generated, employment provided, and constraints faced and their relationship with the formal sector are needed. Unfortunately, due to their very nature, i.e., their small size, invisibility, and high rates of entry and exits, informal sector enterprises do not enter the business registers or the list frames usually maintained by national statistical offices (NSOs). Thus, many enterprise surveys conducted by NSOs in developing countries usually target only enterprises beyond a threshold, generally measured in terms of size of employment, which are available in the official lists. As a result informal sector enterprises escape official data collection systems, and their contribution to GDP is often understated in the official national accounts data despite their significant contribution.

In this paper we will be concerned with some measurement issues that are faced in the process of collecting data from these enterprises through sample surveys. We will be using the terms informal and unorganized interchangeably in this paper. One of the reasons for using the term unorganized is that the data that we use to look into some of the measurement issues and derive our conclusions from relate to the National Sample Survey (NSS) 56th round survey of unorganized manufacturing sector in India.

II. Measurement of Informal Sector

Several problems are associated with the collection of data on informal enterprises for use by statisticians, economists, researchers, and other users to answer a variety of questions such as their contribution to the level and growth of real GDP, employment and wages, impact on poverty and inequality, and other questions of interest. Accurate measurement of various characteristics, including flow and stock variables, is therefore critical. Most of these enterprises are household enterprises where money and goods are fungible between the household and enterprise. Further, absence of written records of transactions leads to relying on recall by the informant. This is problematic since the irregular nature of transactions of informal enterprises makes proprietors susceptible to recall error (Liedholm 1987). Designing appropriate methods to capture accurate data is a challenging task for the survey statisticians. Additionally, there are issues relating to deliberate misreporting, as the owners may be reluctant to reveal their accurate incomes and expenses, fearing the use of information for tax purposes.

The method of measuring the informal sector depends upon what questions the users of data collected want to answer. A household labor force inquiry is useful if the main interest is measuring employment in the informal sector. However, if the need is to study the production; size of employment and condition of employment; goods and services produced; raw materials; and inputs used in production, fixed assets and capital, credit and interest, relationship with the formal sector, etc., then a survey of enterprises is required. In this case, there are two basic survey design options, namely an enterprise survey or a mixed household-enterprise survey. The choice depends upon data requirements, organization of statistical systems, and resources available (for more details see OECD 2002). Such a survey will seek to collect data from the enterprise owners as respondents. Apart from the objectives of the inquiry, the data collection strategy and inclusion of data items in the survey instruments depend on many other factors such as relative amounts of sampling and nonsampling errors that would creep in any survey design and in survey operations, and availability of financial resources. NSOs would like to undertake nationwide sample surveys but are very often constrained by resources, and consequently the design is guided by availability of resources, both financial and skilled manpower.

Sampling errors would depend upon the sampling design and sample size. Nonsampling errors would depend to a large extent on the design of survey instruments, data items included, number of visits and reference period (length of recall), availability of records etc. In designing a survey questionnaire the options could be (i) using a detailed set of questions to collect data at the disaggregated item level, or (ii) using a short questionnaire with very few direct questions. While there has been experimental research in developing countries to compare the two approaches to capture household expenditure, and which suggests that asking more detailed questions leads to more

accurate estimates of household consumption (see discussions in Deaton and Grosh 2000), such experiments for surveys of enterprises are rather limited.

Further, data for the reference period could be collected at a single point in time or at multiple points in time through interviews by repeated visits to the enterprise. Each of these methods have implications on costs and on the sampling and nonsampling errors for a given sample size. As Liedholm (1991) notes, “If resources for investigation are fixed, increasing the frequency of interviews will necessitate reducing the sample size and consequently tend to increase the sampling error. On the other hand, reducing the frequency of visits may tend to increase the amount of nonsampling errors, such as those due to measurement and response inaccuracies, particularly if significant amounts of memory recall are involved”. The larger the reference period, the more likely the inquiry will be affected by recall errors. Additionally, Casley and Lury (1981) as quoted in Liedholm (1991, 3) argue that, in the context of developing countries, nonsampling errors are more significant than sampling errors. Reinterview studies have shown the presence of “alarmingly high levels of response errors even on the simplest of survey questions” (Scott 1985, 15 as quoted in Liedholm 1991), and in some Indian surveys, nonsampling errors may have been six times the sampling errors (Casley and Lury 1981, 87 as quoted in Liedholm1991).

Motivated by the fact that the accurate measurement of profits from micro enterprises is crucial for understanding the success of a variety of policy and programmatic interventions, including micro finance, a recent study experiments with different methods of data collection to better understand the problems that plague the accurate measurement of profits from micro enterprises. In particular, de Mel, McKenzie, and Woodruff (2009) conducted two panel surveys of Sri Lankan micro enterprises between 2005 and 2007. One of the surveys involved 618 micro enterprises with invested capital of around $1,000 or less, excluding investments in land and buildings, and were engaged in retail trade and manufacturing operations. The other survey focused on 180 retail trade firms.

The authors carry out a number of experiments involving data on profits, revenues, and expenditures. To begin with, the authors find considerable discrepancy between a direct measure of profit (obtained by asking owners directly for their profits) and a measure obtained as the difference between reported revenues and reported expenses. For example, in the sample of manufacturing micro enterprises, the Pearson correlation between reported profits and reported revenues minus expenses is as low as 0.20 (the Spearman correlation coefficient is higher, around 0.42) once data outliers are dropped. Moreover, while no entrepreneur reports negative profits, over a quarter of micro enterprises have negative values for reported revenues minus expenses. Clearly, determining which of the two measures is more accurate is important.

The authors consider a variety of reasons for the discrepancy between reported profits and reported revenue minus expenses. These include unreported categories of expenses or forms of profit (for example, business goods and materials used for home consumption but recorded as business expenses); a mismatch in the timing of input purchases and sales; recall errors; and deliberate misreporting. The authors find that a large part of the differences between profits versus revenues minus expenses can be accounted for by the reporting of goods used for home consumption under business expenses, and the mismatch between revenues and expenses. Recall errors due occur so that monthly sales tend to be understated when recalled after four months versus one month. The use of diaries seems to reduce the recall error for both revenues and expenses. The analysis of the authors also suggests that firms under report revenues by around 30% and that the average micro enterprise also under reports profits by around 20%.

A key conclusion drawn by the authors is that asking owners of micro enterprises directly for their profits yields a measure which appears "at least as reasonable as asking for all the ingredients in terms of detailed revenue and expenses".

In this paper we will examine the differences in the measures of: (i) profits of an enterprise obtained from a detailed set of questions on incomes and expenses of the enterprise versus profits of the enterprise obtained through a single direct question; and (ii) gross value added (GVA) using the production approach as the difference of output and intermediate consumption of the enterprises obtained from a detailed set of questions on incomes and expenses, versus GVA using the income approach obtained from a few direct questions on the factor incomes of the enterprises of which profits is an important factor. To examine this, we use data from the NSS 56th round survey of unorganized manufacturing conducted by the National Sample Survey Organization (NSSO) during the period July 2000–June 2001. We also examine if the differences vary with the characteristics of the enterprises, and suggest further empirical research to develop suitable tools for providing accurate measurements of informal sector enterprises.

III. NSS Surveys on Unorganized Manufacturing

The 56th round of the NSS conducted during July 2000–June 2001 is dedicated to collection of data on economic and operational characteristics of small manufacturing enterprises in the unorganized sector of the Indian economy. The registered factory sector in India representing the organized manufacturing sector is covered annually through the Annual Survey of Industries.(ASI). The ASI covers all enterprises in the manufacturing sector registered under Sections 2m (i) and 2m (ii) of the Factories Act 1948, i.e., enterprises employing 10 or more workers using power, and those employing 20 or more workers without using power. The units not covered under the ASI are treated as part of the unorganized sector with respect to manufacturing activities. This concept

of organized and unorganized enterprises in the manufacturing sector is consistent with the organized–unorganized dichotomy used in the Indian system of national accounts. Surveys of unorganized manufacturing enterprises are conducted once in 5 years to meet the data gaps from this sector especially for national accounts purposes to estimate their contribution to GDP through indirect methods, using the benchmark-indicator procedure. In this procedure, the benchmark GVA estimates are initially prepared at the detailed economic activity level for the base year of national accounts series as a product of estimated workforce engaged in the unorganized manufacturing and the value added per worker obtained through the quinquennial survey. For subsequent years, the procedure followed for estimating the GVA annually is to extrapolate the base year GVA estimates with the growth observed in the index of industrial production at each detailed industry level. For the current price estimates of GVA for unregistered manufacturing, the relevant wholesale price indices are superimposed on the constant price GVA estimates at the detailed industry level (Kolli 2007, Kulshreshtha and Singh 1998, Kulshreshtha 2008). The share of unorganized manufacturing sector in the net domestic product (NDP) of the manufacturing sector was 37.5% in 1999–2000, which came down to 32.6% in 2007–2008 (CSO 2009). Given that the survey is used to provide benchmark data for contribution of the unorganized manufacturing sector to the Indian economy, accuracy of data collected becomes very important.

IV. Data Description

The NSS 56th round adopted a stratified two-stage sample design with villages/urban frame survey (UFS) blocks as the first stage units and manufacturing enterprises in the unorganized sector as the ultimate stage units (USUs). Data in the survey were collected for a reference period of 1 month, from a sample of more than 150,000 enterprises in rural and urban India based on oral inquiry. From the unit-level data, we dropped the enterprises with 20 or more workers to control for results that may be affected by outliers, as some of the enterprises in the original sample were quite large even with more than 100 workers. A few records were corrected by supplying missing values based on other characteristics of the enterprise, and some records with unacceptable entries against some enterprise characteristics were dropped. From the remaining set we further dropped those enterprises for which the percentage difference in the profits obtained for an enterprise based on the two approaches (to be described later) was more than or equal to 500. This left us with a sample of 150,775 enterprises. Basic characteristics of the sample used in our analysis are given in Table1.

Table 1: Summary Statistics of the Sample

	Rural	Urban	Total
Number of enterprises	59,797	90,978	150,775
Mean total workers	2.41	3.02	2.78
Mean hired workers	0.72	1.37	1.11
Proprietary enterprises (percent)	97.7	95.4	96.3
Male-owned (percent)	79.0	75.2	76.7
Female-owned (percent)	18.7	20.3	19.6
Own-account enterprises (percent)	78.9	59.4	67.1
Enterprise maintaining business accounts (percent)	2.04	5.07	3.87
Enterprises located within household premises (percent)	64.0	46.8	53.6
Enterprises registered with any local authority (percent)	12.5	26.9	21.2
Mean total receipts (output) (rupees)	137,906	308,679	240,951
Mean total expenses (rupees)	107,904	255,535	196,984
Mean intermediate consumption (rupees)	94,054	219,015	169,456
Mean compensation of employees (rupees)	11,392	30,504	22,924
Mean profits(derived) (rupees)	30,003	53,144	43,966
Mean profits(direct) (rupees)	28,049	49,096	40,749
Mean GVA(P) (rupees)	43,852	89,664	71,495
Mean GVA(I) (rupees)	41,898	85,615	68,277

Table 1 shows that majority of the enterprises in the unorganized manufacturing segment are very small in size and do not maintain books of accounts. In the sample, 67.1% enterprises had no hired labor and mean employment was 2.78, with hired employment being 1.11 per enterprise. Less than 4.0% enterprises maintained books of accounts and more than half of the enterprises operated from within the household premises.

V. NSS 56th Round Questionnaire

As stated earlier, the survey is the main instrument for estimating GVA per worker for the unorganized manufacturing activity in India. Box 1 provides the details of data items that were captured in the NSS 56th round survey to calculate the GVA.

Box 1: Data Items in the Survey Questionnaire to Calculate GVA

Total Intermediate Consumption	**Total Output**
• Total raw materials consumed (data collected for five major raw materials and others during the reference period) • Commodities purchased for resale • Other operating expenses • Electricity, fuel, and lubricants • Raw materials consumed for own construction • Minor repair and maintenance of fixed assets • Rent on P&M • Service charges paid • Travelling, freight and cartage expenses • Communication expenses • Consumables, packing materials etc. • Paper and printing • Licence fees and local taxes (exclude indirect taxes) • Other expenses (consumer entertainment, performing rituals, etc.) • Distributive expenses	• Receipts from goods manufactured (value of finished five major products and by products and others during the reference period) • Change in stock of semifinished goods • Opening stock of semifinished goods • Closing stock of semifinished goods • Receipts from commodities traded • Change in stock of trading goods • Opening stock of trading goods • Closing stock of trading goods • Other receipts (from any other economic activity) • Other receipts • Commission charges received • Market value of own construction • Goods/services produced or traded goods used for own or employees consumption • Rent receivable on P&M and other fixed assets • Donations received (including government grants) • Other receipts (incentives received by enterprise, scrap sale receipts, etc.)

P&M = plant and machinery.

The data collected on the above items enables calculation of GVA by using the production approach as below:

GVA(P) = Total Output – Total Intermediate Consumption (1)

where intermediate consumption are the products used in the production of final products of the manufacturing unit and which lose their identity in the final product. Total output relates to the value of goods manufactured against the intermediate products consumed in the production process during the reference period of one month.

The NSS questionnaire also collects data on factor payments such as compensation paid to employees (salary, wages, and other benefits in cash and kind) during the reference period, rent payable on fixed assets, and interest payable on loans outstanding. Given this information, the profits of an enterprise can be derived using the following identity:

Profits(derived) = Total Output – Total Intermediate Consumption (as above) – Compensation of employees – rent payable – interest payable (2)

Or

Profits(derived) = Total Output – Total Expenses (2a)

The NSS questionnaire seeks sufficiently detailed data on expenses and receipts of an enterprise. There were 37 items of expenditure and 18 items of receipts or incomes of enterprise in the questionnaire. The items included in the questionnaire and the instructions provided to the investigators are to ensure coverage of often unreported categories such as business goods used for home consumption; business revenue used for household expenses but not included in revenues (or in profits); and firm inputs received as gifts but included as business expenses, which reflect the fungibility of resources between the household and business.

Up to its last survey on the unorganized manufacturing sector in the 51st round in 1994–1995, NSS collected data for calculating the GVA at the enterprise level using the production approach. In the NSS 56th round survey however, it included some additional questions on profits of each enterprise. A new data item was included, *net surplus* (including home consumption of raw materials/goods/services produced or traded by enterprise). *Net surplus* of an enterprise was defined as the amount that the owner/partner(s) get out of the entrepreneurial activity after making payments to the workers (individual or as group benefits), rent on land and building, and interest on outstanding loan for the reference month. To get a complete idea of the net surplus or earning of an enterprise, withdrawals (if any) from enterprise earnings by the household or partners and home consumption during the reference month, other than the surplus visible at the end of the reference month, were taken into account. Payments made to paid family members who are treated as hired workers of the enterprise were excluded from net surplus and included under compensation paid to employees.

This additional data item to capture profits, i.e., profits(direct), of the enterprise provided an additional measure of calculating the GVA using the *income approach* by simple addition of factor incomes of the enterprise during the reference month as follows:

GVA(I) = Net surplus + Interest + Rent + Compensation to employees (3)

Thus while profits could also be derived using equation (2a) from the already collected detailed data items on receipts and expenses of an enterprise, the direct question on *net surplus* provided another value for the profits made by the enterprise during the reference period. The NSS 56th round questionnaire thus provided for obtaining the GVA and profits of the same enterprise following two different approaches, which are summarized in Box 2.

Box 2: Approaches to Measuring GVA and Profit of an Enterprise

Approach 1 (Production Approach)	Approach 2 (Income Approach)
GVA(P) = Gross Value Added = Total Output – Total Intermediate consumption Profits(derived) = Total Receipts – Total Expenses	GVA(I) = Net Surplus + Interest + Rent + Compensation of Employees Profits(direct) = Net surplus

In Approach 1, profits and GVA of an enterprise can be calculated using detailed data collected on inputs, other operating expenses, expenses on salaries and wages, interest, and rent of the enterprise. There were 37 items of expenditure and 18 items of receipts or incomes of enterprise in the questionnaire. On the other hand, Approach 2 captures profits (net surplus) by a direct question and GVA by adding only four data items: net surplus, rent, interest, and compensation of employees to calculate GVA(I). In Approach 1, data on interest, rent, and compensation of employees is used to calculate the profits(derived) of the enterprise, whereas in Approach 2, these items are used to calculate GVA(I). The NSS 56th round survey provides an opportunity to compare the data collected from the two approaches for the same set of enterprises.

VI. Results of Data Review

In the following sections using data from the NSS 56th round survey of 59,797 rural enterprises and 90,978 urban enterprises in the unorganized manufacturing sector, we examine some of results obtained from the two approaches and compare the results. Some tables are also presented in the Appendix to provide more detailed results. We define:

Gap(profits) for a set of enterprises = [Mean Profits(direct) – Mean Profits(derived)]/ [Mean Profits(derived)] *100

Gap(GVA) for a set of enterprises = [Mean GVA(I) – Mean GVA(P)]/ Mean [GVA (P)] *100

Gap(profits) measures the deviation of mean profits(direct) from the mean profits(derived). expressed as a percentage of mean profits(derived). A negative Gap(profits) indicates that the mean profits of the sample of enterprises based on Approach 2 (direct question on profits) is lower than the mean profits of the sample of enterprises based on Approach 1 (detailed disaggregated questions on incomes and expenses). Similarly, Gap(GVA) measures the deviation of mean GVA(direct) from the mean GVA(derived) expressed as a percentage of mean GVA(derived).

Table 2a: Mean GVA(P), Mean GVA(I), and Gap(GVA)

		All	Sector		Maintaining Accounts or Not	
			Urban	Rural	Yes	No
GVA (P)	Mean	71,495	89,664	43,852	357,477	59,992
	S.D.	222,003	227,841	209,820	856,171	135,524
	Median	25,944	37,680	16,740	207,966	24,660
	No. of obs	150,775	90,978	59,797	5,830	144,945
	% negative	0.30	0.29	0.33	0.69	0.29
GVA (I)	Mean	68,277	85,615	41,898	330,733	57,721
	S.D.	186,025	189,802	176,898	682,071	120,026
	Median	25,200	36,000	16,800	201,438	24,000
	No. of obs	150,775	90,978	59,797	5,830	144,945
Correlations	Pearson	0.9021	0.9032	0.8974	0.8605	0.9471
	p-value	0.0000	0.0000	0.0000	0.0000	0.0000
	Spearman	0.9893**	0.9897**	0.9864**	0.9724**	0.9897**
Gap(GVA) (percent)		**–4.5**	**–4.5**	**–4.5**	**–7.5**	**–3.8**

Table 2b: Mean Profits(derived), Mean Profits(direct), and Gap(profits)

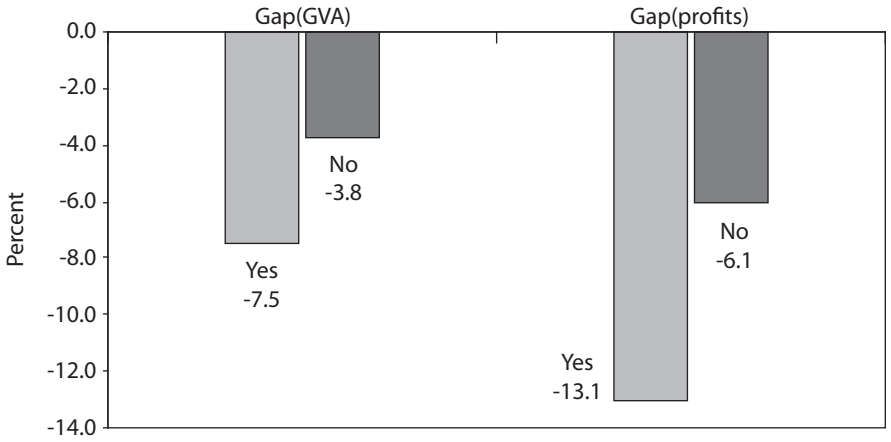
		All	Sector		Maintaining Accounts or Not	
			Urban	Rural	Yes	No
Profits(derived)	Mean	43,966	53,144	30,003	204,453	37,511
	S.D.	179,945	181,875	176,055	773,588	92,405
	Median	22,320	29,700	15,480	95,154	21,408
	No. of obs	150,775	90,978	59,797	5,830	144,945
	% negative	0.70	0.71	0.68	2.21	0.64
Profits(direct)	Mean	40,749	49,096	28,049	177,708	35,240
	S.D.	137,228	135,361	139,065	581,112	72,275
	Median	21,600	30,000	15,000	90,000	21,480
	No. of obs	150,775	90,978	59,797	5,830	144,945
	% negative	0	0	0	0	0
Correlations	Pearson	0.8471	0.8445	0.8503	0.8263	0.8835
	p-value	0.0000	0.0000	0.0000	0.0000	0.0000
	Spearman	0.9794**	0.9760**	0.9818**	0.9416**	0.9810**
Gap(profits) (percent)		**–7.3**	**–7.6**	**–6.5**	**–13.1**	**–6.1**

Table 2a reports the mean, standard deviation, and median of GVA(P) and GVA(I) calculated using the two approaches separately for rural and urban enterprises. It also gives the percentage of enterprises with negative GVA and correlations. Table 2b reports similar results from the two approaches for profits(derived) and profits(direct). The two tables show that the observed correlations are very high, although on average across rural and urban sectors, GVA(I) and profits(direct), which are based on one-shot question on net surplus, are lower than GVA(P) and profits(derived), respectively. At the aggregate level mean GVA(I) is about 4.5% lower than mean GVA(P), and mean profits(direct) are lower by 7.3% compared to mean profits(derived). While there is no rural–urban differential in the Gap(GVA), based on the two approaches, the Gap(profits) is much higher for urban enterprises than the rural. The differences in the two approaches do not appear to be very high at the aggregate level, yet Approach 2 to obtain profits and therefore GVA through a direct question on profits yielded lower estimates of mean profits, and consequently lower estimates for mean GVA compared with Approach 1. We further examine this issue and look into the estimates of the two variables across various enterprise characteristics discussed below.

A. Books of Accounts

The unorganized sector enterprises in India usually do not keep books of accounts and therefore information is collected through oral inquiry depending to a large extent upon the recall of the informant. Less than 4.0% of the enterprises in the entire sample maintained books of accounts and provided the data from them. As the data collected for enterprises maintaining books of accounts was based on written records, it is expected to be free from recall errors or errors of deliberate underreporting or overreporting on the part of the respondent, which are very likely in an oral inquiry. However, the enterprises maintaining books of accounts were also asked direct one-shot question on profits. Table 2a reports the mean, standard deviation, median, of GVA(P) and GVA(I); Table 2b reports mean, standard deviation, median, profits(derived), and profits(direct) separately for the enterprises based on accounts maintained. It is observed that the mean profits(derived) and the GVA(P) were higher than the mean profits(direct) and GVA(I), respectively, for enterprises irrespective of whether the accounts are maintained or not. However, Gap(profits) was much higher at (–)13.1% for enterprises with books of accounts (record based inquiry), while this gap was only (–)6.1% for enterprises with no books of accounts (oral inquiry). This implies that when the direct question on profits was asked, enterprises with books of accounts reported profits that were lower by 13.1% from the profits derived as a difference of incomes and expenses using the books of accounts. The mean Gap(GVA) was (–)7.5% for enterprises with accounts compared to (–)3.8% for enterprises without accounts (oral inquiry). This gives evidence to the argument that enterprises tend to underreport profits if asked directly, even if they maintain books of accounts (see Figure 1).

Figure 1: Gap(GVA) and Gap(profits) by Maintenance of Business Accounts



Enterprises that maintained books of accounts were relatively larger enterprises. They have a higher number of workers; are more likely to be registered; are located outside the household premises; and have much higher expenses, receipts, profits, and GVA (see Table 3). It is seen that the mean receipts, expenses, profits(derived), profits(direct), GVA(P), GVA(I), and mean value of plant and machinery (P&M) are almost 80–90% lower for enterprises that do not maintain books of accounts. Obviously, the larger the operations of an enterprise, the more likely the accounts are maintained to track the transactions.

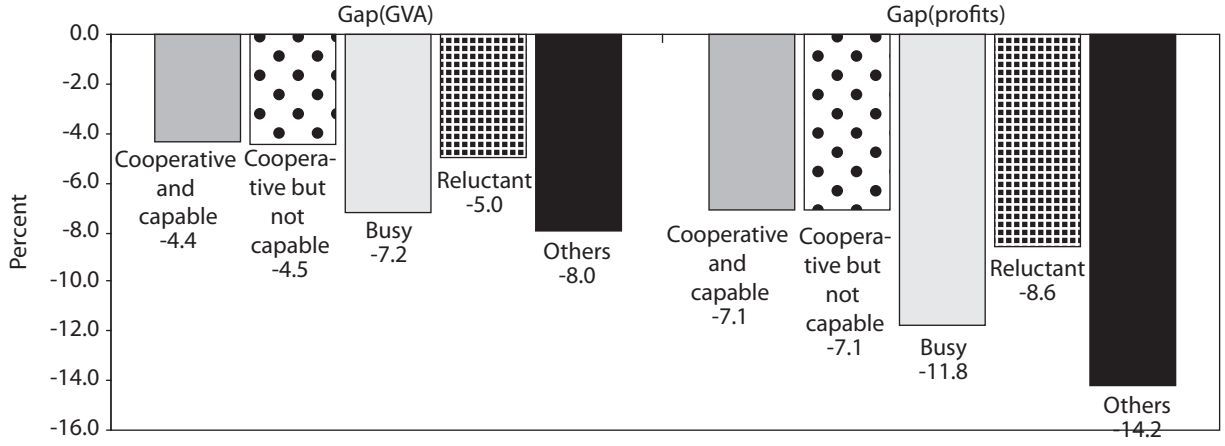
Table 3: Basic Characteristics of Enterprises by Accounts Maintained or Not

	Accounts Maintained		Total	Percent Difference between Yes and No
	Yes	No		
Number of enterprises	5,830	144,945	150,775	
Mean total workers	6.1	2.6	2.8	
Mean hired workers	4.3	1.0	1.1	
Proprietary enterprises (percent)	77.7	97.1	96.3	
Male-owned (percent)	67.3	77.0	76.7	
Female-owned (percent)	10.4	20.0	19.6	
Own-account enterprises (percent)	15.3	69.2	67.1	
Enterprises located within household premises (percent)	17.6	55.2	53.7	
Enterprises registered with any local authority (percent)	76.6	19.0	21.2	
Mean total receipts (output) (rupees)	1,778,602	179,103	240,951	−89.9
Mean total expenses (rupees)	1,574,149	141,592	196,984	−91.0
Mean intermediate consumption (rupees)	1,421,124	119,111	169,456	−91.6
Mean compensation of employees (rupees)	118,739	19,070	22,924	−83.9
Mean profits(derived) (rupees)	204,453	37,511	43,966	−81.7
Mean profits(direct) (rupees)	177,708	35,240	40,749	−80.2
Mean GVA(P) (rupees)	357,477	59,992	71,495	−83.2
Mean GVA(I) (rupees)	330,733	57,721	68,277	−82.5
Mean size of plant and machinery (rupees)	183,950	19,680	26,032	−89.3

B. Response Code

In any survey, the quality of data reported depends to a very large extent upon the type of response of the informant. The NSS captures this information through respondent codes: informant (i) cooperative and capable, (ii) cooperative but not capable, (iii) busy, (iv) reluctant, and (v) others. Out of all the enterprises in the sample, 78.7% of the enterprises were coded as cooperative and capable, which is quite an encouraging number; 16.8% were cooperative but not capable; 1.8% were busy; and only 2.4% were reluctant. Although the numbers appear to be quite encouraging, none of these codes would capture any deliberate misreporting by the respondents. Figure 2 shows that while all respondents on average reported lower profits(direct), the largest Gap(profits) of (–)14.2% was for response code "others"; (–)11.8% for "busy"; and (–)8.6% for "reluctant informants". It was lowest at (–)7.1% each for "cooperative and capable" and "cooperative but not capable".

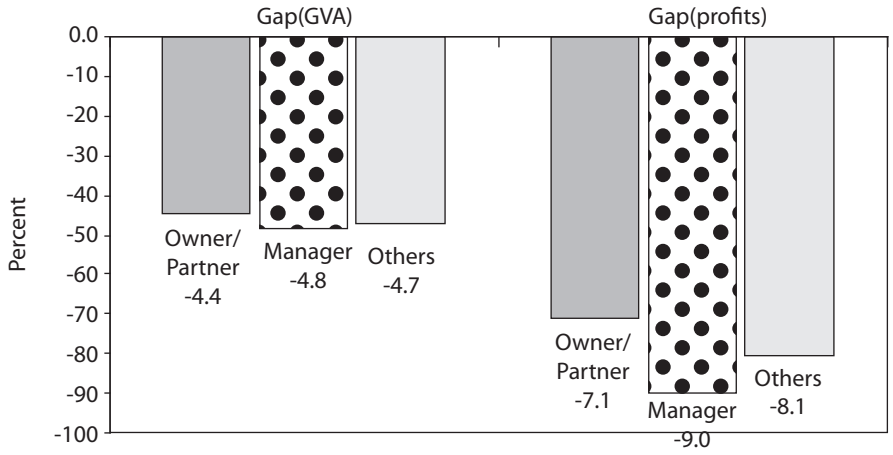
Figure 2: Gap(GVA) and Gap(profits) by Type of Response



C. Informant

Normally with respect to proprietary/partnership enterprise with no written records of transactions, the owner/partner of the enterprise is expected to have the best information about the transactions of the enterprise. For 91.3% of the enterprises, the respondents were owner/partners in the observed sample, 2.8% were managers, and 5.9% were others. Mean GVA(P) and profits(derived) were higher compared with mean GVA(I) and profits(direct), respectively (Figure 3). The observed Gap(profits) was largest for managers at (–)9.0% compared to (–)7.1% for owner/partner. Thus on average, if the respondent was the owner of the enterprise, the observed differences in the profits and GVA from the two approaches were lower.

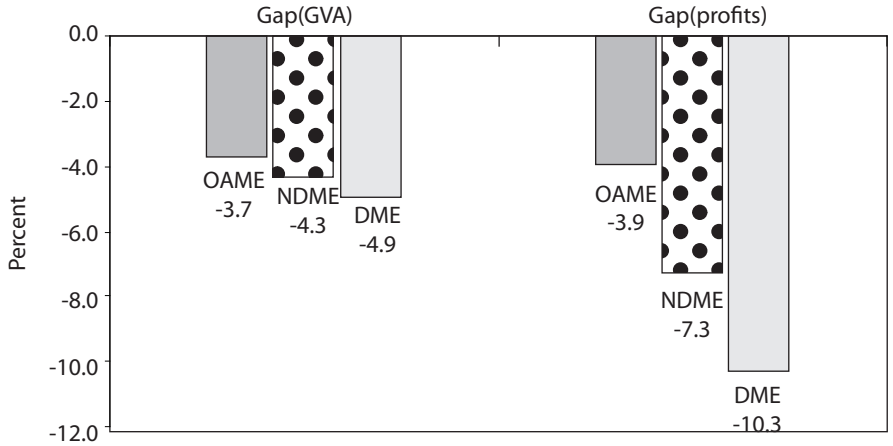
Figure 3: Gap(GVA) and Gap(profits) by Informant



D. Enterprise Type

The NSS classifies enterprises into three types: (i) own-account manufacturing enterprises (OAME) are enterprises run by household labor, i.e., with no hired labor; (ii) nondirectory manufacturing enterprises (NDME) have less than six workers with at least one hired worker; and (iii) directory manufacturing enterprises (DME) are enterprises with six or more workers and at least one hired worker. In our sample, 67.1% enterprises are OAMEs, 21.8% are NDMEs, and 11.1% are fairly large enterprises, i.e., DMEs. Figure 4 shows that the mean profits(direct) is lower than mean profits(derived) across all the three enterprise types. However, the lowest Gap(profits) from the two approaches are observed in the case of OAMEs at (–)3.9%, increasing to (–)7.3% for NDMEs, to a high of (–)10.3% for DMEs. A similar trend is observed for Gap(GVA) but to a lesser extent.

Figure 4: Gap(GVA) and Gap(profits) by Type of Enterprise

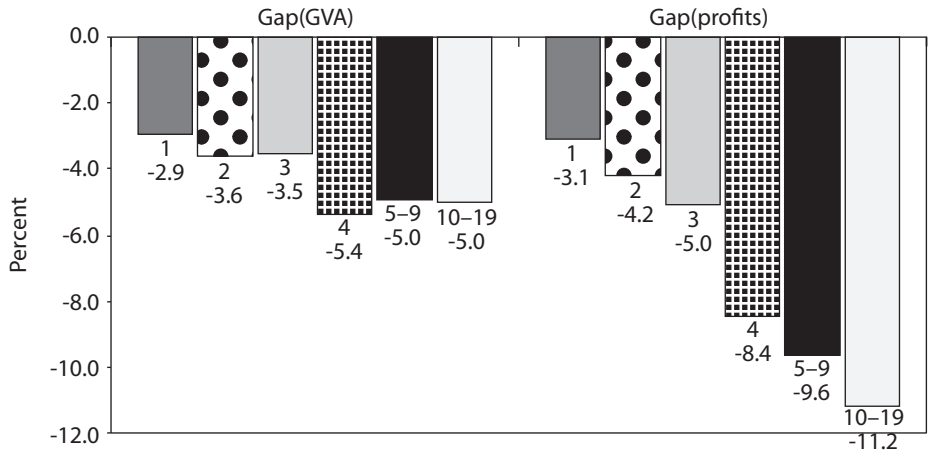


OAME = own-account manufacturing enterprises, NDME = nondirectory manufacturing enterprises, DME = directory manufacturing enterprises.

E. Size of Employment

The average employment of an enterprise in the observed sample is 2.78, with 2.41 for rural enterprises, and 3.02 for urban enterprises (Table 1). Nearly 65.0% of the enterprises were small with less than two workers, and 84.4% had less than five workers. For rural enterprises these were 74.4% and 90.0%, respectively. Irrespective of size of employment, mean profits(derived) and mean GVA(P) were higher than mean profits(direct) and mean GVA(I), respectively (Figure 5). It is observed that Gap(profits) increased substantially with increase in the size of employment. Thus while the observed Gap(profits) was (–)3.1% for enterprises with only one worker, the Gap(profits) increased to (–)8.4% for enterprises with four workers, and was highest at (–)11.2% for enterprises with 10–19 workers. However, the Gap(GVA) did not increase by as much and was around (–)5.0% for employment size of four and above.

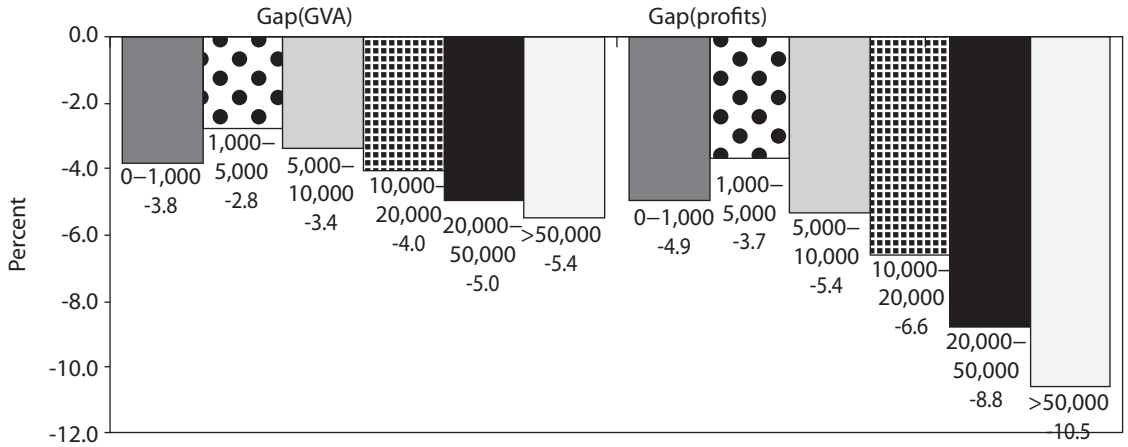
Figure 5: Gap(GVA) and Gap(profits) by Size of Employment



F. Size of Plant and Machinery

Given that the survey captures the unregistered manufacturing sector, 74.2% of the enterprises in the sample had P&M valued at less than 10,000 rupees (Rp), roughly US$200. For rural enterprises this was 81.0%. Data also suggests that across rural and urban sectors (Tables 2a and 2b) and across all size classes of P&M (Figure 6), mean GVA(P) and mean profits(derived) are higher than average GVA(I) and profits(direct), respectively. The Gap(profits) increased from (–)4.9% for the lowest category of P&M value of less than Rp 1,000, to a high of (–)10.5% for enterprises with P&M above Rp 50,000. Although the observed percentage difference dropped for the 2nd size class of Rp 1,000–5,000, it generally increased with size of P&M. The Gap(GVA) also increased with an increase in the P&M size except for the 2nd size class of Rp 1,000–5,000.

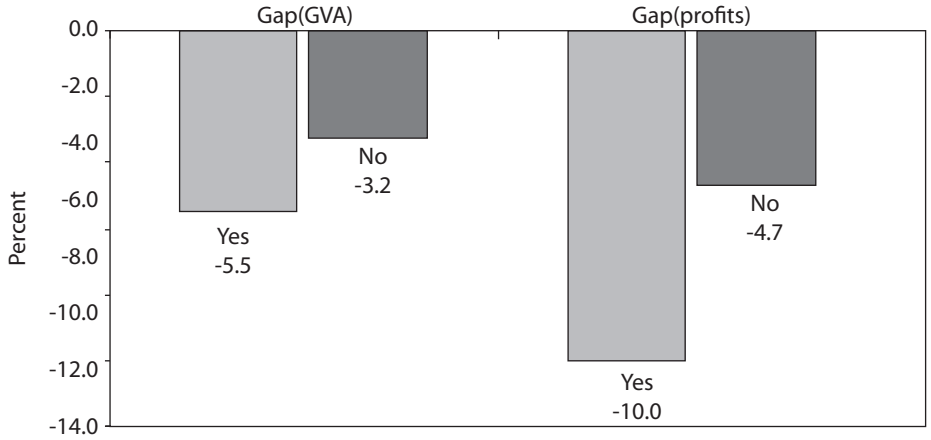
Figure 6: Gap (GVA) and Gap(profits) by Size of Plant and Machinery



G. Registration

The survey covered enterprises that are not registered as factories under the Indian Factories Act. However, information related to registration with local authorities was collected from each enterprise. The registration of an enterprise even with a local authority is an indicator of larger operations compared with an unregistered enterprise. Only about 21.2% of the enterprises were registered with one or more of the local agencies. From Figure 7 it can be seen that mean GVA(P) and mean profits(derived) are higher compared with mean GVA(I) and mean profits(direct), respectively. The Gap(profits) was, however, (–)10.0% for enterprises with some local registration compared to (–)4.7% for enterprises with no local registration.

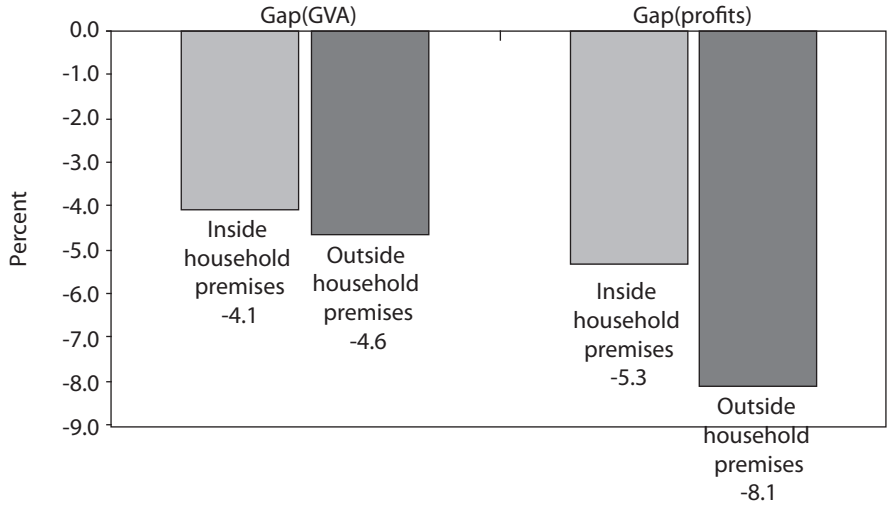
Figure 7: Gap(GVA) and Gap(profits) by Enterprise Registration



H. Location of Enterprise

Most of the enterprises in the unorganized sector, including those in the manufacturing sector, operate from the household premises because of the small nature of their operation. Around 53.7% of the enterprises in the observed sample operated from within the household premises, of which 64.1% are from the rural sector. Data on mean GVA(P), GVA(I), profits(derived), and profits(direct) for the enterprises shows that the GVA and profits earned are higher for enterprises located outside the premises of the household (Table A8). However, consistently across rural and urban, on average GVA(P) and profits(derived) are higher than GVA(I) and profits(direct). The Gap(profits) is much higher at (–)8.1% for enterprises located outside household premises compared to (–)5.3% for enterprises located inside the household premises (see Figure 8).

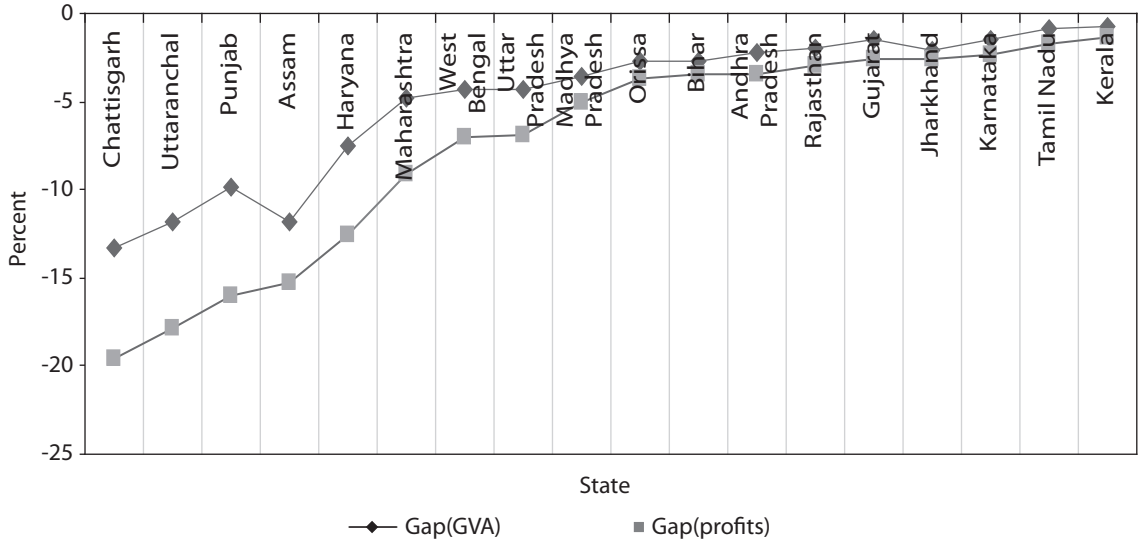
Figure 8: Gap(GVA) and Gap(profits) by Location of Enterprise



I. States

We also analyzed the sample of enterprises across major states of India for mean GVA(P), GVA(I), profits(derived), and profits(direct) to examine variations due to geographical location of enterprises within the country (Table A9). It is obvious that across rural and urban sectors, mean GVA(P) and mean profits(derived) were higher than GVA(I) and profits(direct), respectively. The three southern states of Kerala, Tamil Nadu, and Karnataka had lowest Gap(profits) of (–)1.4%, (–)1.7%, and (–)2.3%, respectively, with the fourth southern state of Andhra Pradesh also reporting a low difference of (–)3.5%. Gap(profits) above (–)8.0% are observed in Maharashtra (–)9.1%, Haryana (–)12.5%, Assam (–)15.3%, Punjab (–)16.0%, Uttaranchal (–)17.8%, and Chattisgarh (–) 19.6% (Figure 9).

Figure 9: Gap(GVA) and Gap(profits) by Major States



VII. Profits(derived) and Profits(direct): Profile of Enterprises

Data show that that the mean profits(derived) are higher than mean profits(direct) for the sample of enterprises. This however, does not imply that all enterprises had profits(derived) greater than profits(direct). We looked into the characteristics of the enterprises based on whether the profits(direct) were less than, greater than, or equal to the profits(derived). More than 60.0% of the enterprises had profits(direct) lower than profits(derived); 28.0% reported profits(direct) higher than profits(derived); and for nearly 12.0% of the enterprises, the two measurers of profits were surprisingly equal. The basic characteristics of these three categories of enterprises are given in Table 4. The first two categories of enterprises have more or less similar general characteristics in terms of ownership, local registration, maintenance of accounts, and location of enterprise within household premises. However, the first category of enterprises with profits(direct) lower than profits(derived) had higher mean employment, mean P&M size, mean total receipts, mean total expenses, and mean profits(derived) and mean profits(direct), as compared to the second and third categories, indicating that these were relatively larger enterprises in terms of business operations. The Gap(profits) for the first category of enterprises was observed at (-)14.5%, while it was (+)13.8% for the second category of enterprises. There is some evidence to suggest that enterprises with relatively larger incomes tend to underreport profits when confronted with a direct question to reveal these profits. The third category of enterprises for which the two measures of profits were equal were much smaller in size and production as compared to the first two categories.

Table 4: Characteristics of Enterprises with Profits(direct) Less than, Greater than, or Equal to Profits(derived)

	Profits (direct) < Profits (derived)	Profits (direct) > Profits (derived)	Profits (direct) = Profits (derived)	Total
Number of enterprises	91,369	42,328	17,078	150,775
Mean total workers	2.89	2.75	2.27	2.78
Mean hired workers	1.19	1.09	0.70	1.11
Proprietary enterprises (percent)	96.1	96.4	97.2	96.3
Male-owned (percent)	78.9	76.8	64.6	76.7
Female-owned (percent)	17.2	19.6	32.6	19.6
Own-account enterprises (percent)	65.4	65.8	79.6	67.1
Enterprise maintaining business accounts (percent)	3.9	3.8	4.0	3.9
Enterprises located within household premises (percent)	52.3	52.3	64.1	53.6
Enterprises registered with any local authority (percent)	22.9	21.0	12.8	21.2
Mean total receipts (output) (rupees)	269,707	212,242	158,258	240,951
Mean total expenses (rupees)	218,478	179,235	125,986	196,984
Mean intermediate consumption (rupees)	188,736	152,294	108,840	169,456
Mean compensation of employees (rupees)	25,027	21,908	14,192	22,924
Mean Profits (derived) (rupees)	51,229	33,007	32,273	43,966
Mean Profits (direct) (rupees)	43,806	37,569	32,273	40,749
Gap(Profits) (percent)	−14.5	13.8	0.0	−7.3
Mean GVA(P) (rupees)	80,971	59,948	49,418	71,495
Mean GVA(I) (rupees)	73,547	64,510	49,418	68,277
Gap(GVA) (percent)	−9.2	7.6	0.0	−4.5
Mean size of plant and machinery (rupees)	27,742	25,635	17,861	26,032

An interesting observation from the data (Tables 2a and 2b) is that while 0.7% of enterprises in the sample had profits(derived) less than zero, none of these enterprises reported profits(direct) as negative. In other words none of the sampled enterprises reported a loss when asked a direct question. de Mel et al. (2009) report similar results in their Sri Lankan experiments with microenterprises. In our sample there are around 0.7% enterprises that report zero profits(direct). Thus, while some enterprises reported zero profits(direct), i.e., no profit and no loss, none of them reported a loss or negative profits(derived). On the other hand, some of the enterprises with positive profits(direct) had negative profits(derived) using detailed data on their receipts and expenses.

VIII. What do We Conclude from Above?

We started by reviewing whether Approach 1 with a long questionnaire and detailed items to capture income and expenses of an unorganized (informal) enterprise captures profits (and GVA) data more accurately compared with Approach 2 with a single shot question on profits. The results from the Indian experience in the NSS 56th round shows

that Approach 1 yields on average a measure of profits (and GVA) that is higher than the measure of profits (and GVA) from Approach 2. From the results reviewed above we conclude the following:

(i) On average, the profits(direct) were lower than the profits(derived). In other words Approach 1 of interviewing the enterprise with detailed sets of questions on receipts and expenses of the enterprise during the reference period gave higher profits compared with Approach 2 of asking profits of the same enterprise through a single shot question. As GVA(P) and GVA(I) depend upon Approach 1 and 2 respectively, on average, GVA(P) was higher than GVA(I).

(ii) This was true across various enterprise characteristics such as rural or urban, response code, informant, enterprise type, maintenance of accounts, registration, location of enterprise, employment, size of P&M, and state in which the enterprises are located.

(iii) The correlations between the profits(derived) and profits(direct) as also between GVA(P) and GVA(I) were very high and positive.

(iv) The Gap(profits) and Gap(GVA) were lower if the respondents were cooperative compared with other respondents who were busy or reluctant. Similarly, the Gap(profits) and Gap(GVA) were lower if the respondents were the owners themselves. Compared with other major states, the Gap(profits) and Gap(GVA) were much lower for the four southern states of Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu compared with other states.

(v) As the size of enterprise increases in terms of employment, or size of P&M, the Gap(profits) and Gap(GVA) also increase, implying that with an increase in size, the directly reported profits are much lower than the profits derived from incomes and expenses of the enterprise. This is also true for all characteristics that indicate a higher level of operation of an enterprise such as registration, location, accounts maintained, etc. In other words, the measure of profits and GVA using Approach 2 are much more likely to be closer to measure of profits and GVA obtained from Approach 1 for smaller enterprises compared to larger enterprises.

(vi) This also suggests that if the target enterprises for a researcher are very small enterprises in terms of employment and size of plant and machinery (for manufacturing enterprises), a short questionnaire with a few direct questions would yield results closer to what would be obtained a questionnaire with detailed disaggregated data items. This is particularly useful when there are resource constraints and the researcher decides that some compromise could be made on the nonsampling errors in the interest of saving time and resources. Well-trained field interviewers are key in controlling recall errors in any survey inquiry.

(vii) One interpretation of this could be that as smaller enterprises have much simpler operations and lesser number of transactions compared to a larger enterprise, the recall lapses are much less, and therefore the two approaches give much closer results for smaller enterprises. Another explanation in the Indian context could be that a large number of very small enterprises do not fall within the income tax threshold. For such enterprises there is little incentive in suppressing incomes or profits. However, enterprises that are close to or above the threshold income limits and are not paying taxes will have the perverse incentive to underreport incomes and profits. The NSS data however, does not capture information on whether the enterprises paid any taxes on incomes to study the difference in behavior of taxpayers and nontaxpayers. It is also sensitive about including such a question in such inquiries as this would make the enterprise further suspicious. Reasons for underreporting of profits and revenues could also be due to expectation of benefit under some government scheme.

(viii) Although Approach 1 yielded higher profits and GVA compared with Approach 2, still there are possibilities that the enterprises underreported revenues and/or overstated expenses. Moreover, even though the profits(derived) on average were higher compared to profits(direct), they might still be underreported due to underreported revenues and overstated expenses. However, there is no way to test this from the NSS 56th round data.

IX. Suggestions for Further Methodological Work

Considering that in the Indian context the enterprise surveys of NSSO are used to provide benchmark estimates of GVA per worker for estimating the contribution to GDP, and considering also that a single direct question provides lower estimates of GVA, there are severe implications in resorting to a single direct question approach. However, as observed above, the short questionnaire approach could be useful when the researcher is interested in collecting data on very small informal enterprises with low levels of investments and employment. Nevertheless, it would be interesting for NSSO to undertake pilot surveys to test several approaches to get an indication of overestimation or underestimation of profits and GVA even within the existing approach. Additional questions could be included to get indirect estimates of misreporting of incomes, expenditures, and profits in the current approach of data collection. This was attempted in the NSS 56th round by obtaining the perception of the interviewer through the question “Does investigator feel that there is any underreporting of net surplus?”, i.e., whether or not the enterprise underreported its direct(profits). A followup question for a “Yes” reply required the investigator to report the range of the profits (lower value and higher value) as perceived by her/him. These questions had an inherent bias of assuming that the enterprise would only underreport its net surplus (profits), which may

not be true. Unfortunately, the data on these questions has also not been provided to researchers. Although it may be possible for the interviewer to judge whether the enterprise misreported its profits, it is very difficult for the interviewer to get a perception of the range of profits of an enterprise in a single-visit interview, which was attempted in the NSS 56th round. Approaches used in de Mel et al. (2009) experiments in Sri Lanka, which aim at getting such information through indirect questions, could provide a more meaningful understanding of the extent to which enterprises overreport expenses or underreport revenues and profits. de Mel et al. (2009) also find fears of income tax in their experiments with firms in Sri Lanka as reasons for misreporting, which might be quite true for India. Further methodological research is needed to test: (i) a short questionnaire versus a long questionnaire with data being collected in a single visit; (ii) a long questionnaire that collects data, specially on flow variables, in a single visit to the enterprise as against multiple visits to the enterprise; and (iii) introduction of diaries to the enterprises to record daily transactions. Multiple visits and the diary method, while increasing the costs of inquiry, are expected to reduce recall errors and yield more accurate estimates of flow variables.

Appendix

Table A1: Gap(GVA) and Gap(Profits) by Maintenance of Business Accounts

Accounts Maintained	Sector	GVA		Gap(GVA) (percent)	Profits		Gap(Profits) (percent)
		Production	Income		Derived	Direct	
Yes	Rural	365,724	336,095	–8.1	229,652	200,024	–12.9
	Urban	355,300	329,316	–7.3	197,798	171,815	–13.1
	ALL	**357,477**	**330,733**	**–7.5**	**204,453**	**177,708**	**–13.1**
No	Rural	37,160	35,781	–3.7	25,852	24,473	–5.3
	Urban	75,479	72,602	–3.8	45,420	42,543	–6.3
	ALL	**59,992**	**57,721**	**–3.8**	**37,511**	**35,240**	**–6.1**
ALL	Rural	43,852	41,898	–4.5	30,003	28,049	–6.5
	Urban	89,664	85,615	–4.5	53,144	49,096	–7.6
	ALL	**71,495**	**68,277**	**–4.5**	**43,966**	**40,749**	**–7.3**

Table A2: Gap(GVA) and Gap(Profits) by Type of Response

Type of Response	Sector	GVA		Gap(GVA) (percent)	Profits		Gap(Profits) (perent)
		Production	Income		Derived	Direct	
Cooperative and capable	Rural	44,486	42,657	–4.1	30,386	28,557	–6.0
	Urban	90,458	86,425	–4.5	53,524	49,491	–7.5
	ALL	**72,264**	**69,104**	**–4.4**	**44,367**	**41,206**	**–7.1**
Cooperative but not capable	Rural	37,740	35,712	–5.4	26,669	24,641	–7.6
	Urban	77,591	74,356	–4.2	46,732	43,497	–6.9
	ALL	**60,505**	**57,787**	**–4.5**	**38,130**	**35,412**	**–7.1**
Busy	Rural	57,189	50,083	–12.4	38,802	31,695	–18.3
	Urban	125,739	118,076	–6.1	74,859	67,196	–10.2
	ALL	**104,038**	**96,552**	**–7.2**	**63,445**	**55,958**	**–11.8**
Reluctant	Rural	67,851	65,581	–3.3	40,918	38,648	–5.5
	Urban	106,406	100,690	–5.4	61,591	55,876	–9.3
	ALL	**96,602**	**91,763**	**–5.0**	**56,334**	**51,495**	**–8.6**
Others	Rural	58,273	55,001	–5.6	32,627	29,355	–10.0
	Urban	106,234	96,772	–8.9	59,807	50,345	–15.8
	ALL	**85,801**	**78,976**	**–8.0**	**48,227**	**41,403**	**–14.2**
ALL	Rural	43,852	41,898	–4.5	30,003	28,049	–6.5
	Urban	89,664	85,615	–4.5	53,144	49,096	–7.6
	ALL	**71,495**	**68,277**	**–4.5**	**43,966**	**40,749**	**–7.3**

Table A3: Gap(GVA) and Gap(Profits) by Informant

Informant	Sector	GVA		Gap(GVA) (percent)	Profits		Gap(Profits) (percent)
		Production	Income		Derived	Direct	
Owner/Partner	Rural	38,979	37,351	–4.2	27,392	25,765	–5.9
	Urban	82,917	79,164	–4.5	49,904	46,151	–7.5
	ALL	**65,250**	**62,352**	**–4.4**	**40,853**	**37,954**	**–7.1**
Manager	Rural	221,953	214,214	–3.5	121,527	113,787	–6.4
	Urban	238,503	225,822	–5.3	127,077	114,395	–10.0
	ALL	**233,927**	**222,612**	**–4.8**	**125,542**	**114,227**	**–9.0**
Others	Rural	62,527	57,136	–8.6	41,384	35,994	–13.0
	Urban	107,416	103,741	–3.4	60,335	56,661	–6.1
	ALL	**90,852**	**86,545**	**–4.7**	**53,343**	**49,035**	**–8.1**
ALL	Rural	43,852	41,898	–4.5	30,003	28,049	–6.5
	Urban	89,664	85,615	–4.5	53,144	49,096	–7.6
	ALL	**71,495**	**68,277**	**–4.5**	**43,966**	**40,749**	**–7.3**

Table A4: Gap(GVA) and Gap(Profits) by Type of enterprise

Type of Enterprise	Sector	GVA		Gap(GVA) (percent)	Profits		Gap(Profits) (percent)
		Production	Income		Derived	Direct	
OAME	Rural	17,639	17,035	–3.4	17,235	16,632	–3.5
	Urban	26,974	25,913	–3.9	25,397	24,336	–4.2
	ALL	**22,621**	**21,773**	**–3.7**	**21,591**	**20,743**	**–3.9**
NDME	Rural	75,056	72,971	–2.8	45,912	43,827	–4.5
	Urban	107,142	102,124	–4.7	63,173	58,156	–7.9
	ALL	**99,283**	**94,984**	**–4.3**	**58,945**	**54,646**	**–7.3**
DME	Rural	260,931	245,175	–6.0	134,473	118,717	–11.7
	Urban	333,060	317,692	–4.6	156,181	140,813	–9.8
	ALL	**313,409**	**297,936**	**–4.9**	**150,267**	**134,794**	**–10.3**
ALL	Rural	43,852	41,898	–4.5	30,003	28,049	–6.5
	Urban	89,664	85,615	–4.5	53,144	49,096	–7.6
	ALL	**71,495**	**68,277**	**–4.5**	**43,966**	**40,749**	**–7.3**

OAME = own-account manufacturing enterprises, NDME = nondirectory manufacturing enterprises,
DME = directory manufacturing enterprises.

Table A5: Gap(GVA) and Gap(Profits) by Size of Employment

Number of Workers	Sector	GVA		Gap(GVA) (percent)	Profits		Gap(Profits) (percent)
		Production	Income		Derived	Direct	
1	Rural	13,992	13,590	–2.9	13,682	13,280	–2.9
	Urban	18,930	18,364	–3.0	17,829	17,263	–3.2
	ALL	**16,688**	**16,196**	**–2.9**	**15,946**	**15,454**	**–3.1**
2	Rural	22,229	21,502	–3.3	20,056	19,329	–3.6
	Urban	38,393	36,952	–3.8	32,025	30,585	–4.5
	ALL	**31,015**	**29,900**	**–3.6**	**26,562**	**25,447**	**–4.2**
3	Rural	42,774	41,334	–3.4	31,940	30,499	–4.5
	Urban	72,861	70,261	–3.6	49,817	47,217	–5.2
	ALL	**62,880**	**60,665**	**–3.5**	**43,886**	**41,671**	**–5.0**
4	Rural	71,002	68,799	–3.1	48,748	46,545	–4.5
	Urban	109,422	102,934	–5.9	68,009	61,521	–9.5
	ALL	**98,664**	**93,375**	**–5.4**	**62,615**	**57,327**	**–8.4**
5–9	Rural	180,718	169,939	–6.0	102,934	92,155	–10.5
	Urban	234,876	223,800	–4.7	118,204	107,129	–9.4
	ALL	**221,791**	**210,787**	**–5.0**	**114,515**	**103,511**	**–9.6**
10–19	Rural	359,368	340,684	–5.2	162,014	143,329	–11.5
	Urban	517,778	492,320	–4.9	230,679	205,221	–11.0
	ALL	**465,429**	**442,209**	**–5.0**	**207,988**	**184,768**	**–11.2**
ALL	Rural	43,852	41,898	–4.5	30,003	28,049	–6.5
	Urban	89,664	85,615	–4.5	53,144	49,096	–7.6
	ALL	**71,495**	**68,277**	**–4.5**	**43,966**	**40,749**	**–7.3**

Table A6: Gap(GVA) and Gap(Profits) by Size of Plant and Machinery

Size	Sector	GVA		Gap(GVA) (percent)	Profits		Gap(Profits) (percent)
		Production	Income		Derived	Direct	
0–1,000	Rural	21,663	20,974	–3.2	18,171	17,482	–3.8
	Urban	39,830	38,172	–4.2	29,855	28,197	–5.6
	ALL	**31,081**	**29,890**	**–3.8**	**24,228**	**23,037**	**–4.9**
1,000–5,000	Rural	23,508	22,878	–2.7	19,247	18,617	–3.3
	Urban	40,217	39,090	–2.8	29,199	28,072	–3.9
	ALL	**33,882**	**32,943**	**–2.8**	**25,426**	**24,487**	**–3.7**
5,000–10,000	Rural	44,300	43,254	–2.4	30,453	29,407	–3.4
	Urban	76,773	73,939	–3.7	47,722	44,888	–5.9
	ALL	**66,344**	**64,084**	**–3.4**	**42,176**	**39,916**	**–5.4**
10,000–20,000	Rural	53,613	51,483	–4.0	35,323	33,193	–6.0
	Urban	100,758	96,723	–4.0	59,484	55,422	–6.8
	ALL	**84,128**	**80,748**	**–4.0**	**50,953**	**47,573**	**–6.6**
20,000–50,000	Rural	77,188	69,308	–10.2	49,898	42,018	–15.8
	Urban	132,492	127,668	–3.6	72,363	67,540	–6.7
	ALL	**115,822**	**110,078**	**–5.0**	**65,592**	**59,847**	**–8.8**
>50,000	Rural	272,892	260,267	–4.6	149,015	136,391	–8.5
	Urban	305,478	288,161	–5.7	155,023	137,707	–11.2
	ALL	**297,702**	**281,505**	**–5.4**	**153,589**	**137,393**	**–10.5**
ALL	Rural	43,852	41,898	–4.5	30,003	28,049	–6.5
	Urban	89,664	85,615	–4.5	53,144	49,096	–7.6
	ALL	**71,495**	**68,277**	**–4.5**	**43,966**	**40,749**	**–7.3**

Table A7: Gap(GVA) and Gap(Profits) by Enterprise Registration

Registered Locally	Sector	GVA		Gap(GVA) (percent)	Profits		Gap(Profits) (percent)
		Production	Income		Derived	Direct	
Yes	Rural	165,482	155,752	–5.9	94,572	84,842	–10.3
	Urban	194,224	183,720	–5.4	105,803	95,300	–9.9
	ALL	**187,525**	**177,202**	**–5.5**	**103,186**	**92,862**	**–10.0**
No	Rural	26,547	25,700	–3.2	20,816	19,968	–4.1
	Urban	51,111	49,443	–3.3	33,728	32,060	–4.9
	ALL	**40,289**	**38,982**	**–3.2**	**28,039**	**26,733**	**–4.7**
ALL	Rural	43,852	41,898	–4.5	30,003	28,049	–6.5
	Urban	89,664	85,615	–4.5	53,144	49,096	–7.6
	ALL	**71,495**	**68,277**	**–4.5**	**43,966**	**40,749**	**–7.3**

Table A8: Gap(GVA) and Gap(Profits) by Location of Enterprise

Location	Sector	GVA		Gap(GVA) (percent)	Profits		Gap(Profits) (percent)
		Production	Income		Derived	Direct	
Inside household premises	Rural	21,847	21,189	–3.0	18,130	17,471	–3.6
	Urban	39,218	37,417	–4.6	28,485	26,683	–6.3
	ALL	**30,995**	**29,735**	**–4.1**	**23,583**	**22,323**	**–5.3**
Outside household premises	Rural	82,938	78,682	–5.1	51,092	46,836	–8.3
	Urban	134,012	127,988	–4.5	74,823	68,800	–8.1
	ALL	**118,286**	**112,807**	**–4.6**	**67,516**	**62,037**	**–8.1**
ALL	Rural	43,852	41,898	–4.5	30,003	28,049	–6.5
	Urban	89,664	85,615	–4.5	53,144	49,096	–7.6
	ALL	**71,495**	**68,277**	**–4.5**	**43,966**	**40,749**	**–7.3**

Table A9: Gap(GVA) and Gap(Profits) by Major States

State	Sector	GVA		Gap(GVA) (percent)	Profits		Gap(Profits) (percent)
		Production	Income		Derived	Direct	
Andhra Pradesh	Rural	33,391	32,227	–3.5	23,239	22,075	–5.0
	Urban	54,131	53,329	–1.5	33,688	32,886	–2.4
	ALL	**43,619**	**42,634**	**–2.3**	**28,392**	**27,407**	**–3.5**
Assam	Rural	35,527	27,827	–21.7	31,395	23,694	–24.5
	Urban	71,795	68,945	–4.0	49,217	46,367	–5.8
	ALL	**49,370**	**43,521**	**–11.8**	**38,197**	**32,348**	**–15.3**
Bihar	Rural	31,554	31,218	–1.1	24,278	23,942	–1.4
	Urban	44,753	42,833	–4.3	35,197	33,276	–5.5
	ALL	**37,191**	**36,179**	**–2.7**	**28,941**	**27,929**	**–3.5**
Gujarat	Rural	60,636	59,821	–1.3	36,785	35,970	–2.2
	Urban	134,905	132,942	–1.5	73,984	72,021	–2.7
	ALL	**117,002**	**115,315**	**–1.4**	**65,017**	**63,330**	**–2.6**
Haryana	Rural	60,780	55,221	–9.1	40,886	35,327	–13.6
	Urban	129,000	119,805	–7.1	74,790	65,595	–12.3
	ALL	**108,353**	**100,258**	**–7.5**	**64,529**	**56,434**	**–12.5**
Karnataka	Rural	45,163	44,367	–1.8	31,877	31,082	–2.5
	Urban	66,495	65,642	–1.3	39,189	38,335	–2.2
	ALL	**58,137**	**57,306**	**–1.4**	**36,324**	**35,493**	**–2.3**
Kerala	Rural	63,878	63,626	–0.4	33,546	33,294	–0.8
	Urban	88,866	87,938	–1.0	45,488	44,560	–2.0
	ALL	**74,139**	**73,609**	**–0.7**	**38,450**	**37,920**	**–1.4**
Madhya Pradesh	Rural	26,255	25,651	–2.3	21,965	21,361	–2.8
	Urban	60,004	57,759	–3.7	40,715	38,470	–5.5
	ALL	**50,439**	**48,659**	**–3.5**	**35,401**	**33,621**	**–5.0**
Maharashtra	Rural	66,948	62,426	–6.8	38,224	33,702	–11.8
	Urban	135,717	129,579	–4.5	70,855	64,717	–8.7
	ALL	**119,166**	**113,417**	**–4.8**	**63,002**	**57,252**	**–9.1**
Orissa	Rural	17,108	16,509	–3.5	13,918	13,318	–4.3
	Urban	36,902	36,113	–2.1	25,152	24,363	–3.1
	ALL	**24,768**	**24,096**	**–2.7**	**18,266**	**17,593**	**–3.7**
Punjab	Rural	47,751	42,560	–10.9	36,708	31,517	–14.1
	Urban	146,219	131,984	–9.7	87,697	73,462	–16.2
	ALL	**121,408**	**109,451**	**–9.8**	**74,849**	**62,893**	**–16.0**
Rajasthan	Rural	52,631	50,200	–4.6	38,361	35,931	–6.3
	Urban	83,068	82,047	–1.2	52,924	51,903	–1.9
	ALL	**73,778**	**72,327**	**–2.0**	**48,479**	**47,028**	**–3.0**
Tamil Nadu	Rural	54,404	53,734	–1.2	28,701	28,031	–2.3
	Urban	74,751	74,199	–0.7	39,019	38,466	–1.4
	ALL	**67,053**	**66,455**	**–0.9**	**35,115**	**34,517**	**–1.7**
Uttar Pradesh	Rural	29,339	27,052	–7.8	21,418	19,132	–10.7
	Urban	74,393	71,491	–3.9	45,972	43,071	–6.3
	ALL	**62,940**	**60,195**	**–4.4**	**39,731**	**36,985**	**–6.9**

Continued.

Table A9: *Continued.*

State	Sector	GVA		Gap(GVA) (percent)	Profits		Gap(Profits) (percent)
		Production	Income		Derived	Direct	
West Bengal	Rural	34,530	33,721	–2.3	23,883	23,074	–3.4
	Urban	80,689	76,650	–5.0	47,923	43,884	–8.4
	ALL	**60,120**	**57,520**	**–4.3**	**37,210**	**34,611**	**–7.0**
Jharkhand	Rural	26,855	26,663	–0.7	21,909	21,717	–0.9
	Urban	41,916	40,542	–3.3	33,000	31,626	–4.2
	ALL	**33,056**	**32,377**	**–2.1**	**26,475**	**25,797**	**–2.6**
Chattisgarh	Rural	15,788	15,147	–4.1	13,908	13,267	–4.6
	Urban	71,915	61,341	–14.7	46,568	35,994	–22.7
	ALL	**48,722**	**42,252**	**–13.3**	**33,072**	**26,602**	**–19.6**
Uttaranchal	Rural	40,575	36,049	–11.2	28,046	23,521	–16.1
	Urban	68,381	60,084	–12.1	44,615	36,317	–18.6
	ALL	**56,351**	**49,685**	**–11.8**	**37,447**	**30,781**	**–17.8**
ALL INDIA	Rural	43,852	41,898	–4.5	30,003	28,049	–6.5
	Urban	89,664	85,615	–4.5	53,144	49,096	–7.6
	ALL	**71,495**	**68,277**	**–4.5**	**43,966**	**40,749**	**–7.3**

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About the Paper

An important aspect of surveys of informal sector enterprises is the design of survey questionnaires to accurately capture data on profits and gross value added. Using establishment-level data of the National Sample Survey 56th round survey of unorganized manufacturing enterprises in India, Kaushal Joshi, Rana Hasan, and Glenita Amoranto analyze the differences in the measurement of enterprises' profits and gross value added derived from a detailed set of questions on incomes and expenses versus profits and gross value added obtained through a single direct question. It is observed that these differences in measurement vary with enterprise characteristics.

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