

## MEASURING THE TRADE SECTOR IN THE NATIONAL ACCOUNTS OF INDIA

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Trade accounts for a significant number of enterprises and contributes a large part to total employment and gross domestic product (GDP) in most developing countries. In India, trade now accounts for 38 percent of all enterprises and contributes about 14 percent to GDP. In real terms, gross value added in trade has been growing at around 8 percent per annum since 1999–2000, indicating that the trade industry is one of the key drivers of GDP growth in India. Since the retail trade industry in India is predominantly run by unincorporated enterprises, measuring the output of this industry and its contribution to the GDP is difficult. The problem is compounded by the fact that at present the periodic enterprises sample surveys carried out in India on the “unorganized” sector do not cover trade. This paper explains how India has approached the problem of measuring the gross value added of the retail trade sector by an indirect method involving what is here described as a “labor input method” and a benchmark-indicator approach using a special trade index. The paper also briefly reviews country practices in measuring the output of retail trade and presents the advantages and disadvantages of India’s approach, particularly in the context of achieving GDP exhaustiveness.

**JEL Codes:** E01, E23, E26

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### 1. INTRODUCTION

Trade is a key contributor to the gross domestic product (GDP) and total employment in most countries, and *especially* in the developing world. Measurement of the output of trade is conceptually more complex as compared to other service activities, since it comprises a number of non-quantifiable services including transfer of ownership of goods and other services associated with sales. If one could distinguish these individual service products within the trading activity, it would, theoretically, be possible to associate them with some price and consequently measure their output directly, in either real or nominal terms. However, since this procedure is not possible, countries presently measure the output of trade as the trading margin, which is the difference between the sales value and the purchase value of goods traded. Thus, the sale value of goods is not treated as gross output and the purchase value of goods for resale is not treated as intermediate consumption. This is one of the features that distinguishes trade from other economic activities.

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This paper presents an overview of India's practices in measuring the gross value added (GVA) of trade activity focusing, in particular, on the informal or "unorganized" part. (The terms unorganized and informal are used interchangeably at present in the Indian national accounts.) Section 2 provides in brief overview of other country practices in measuring the output of trade and the differences compared with Indian methodology. In Section 3, the method of compiling GVA for trade in India is described in detail, while in Section 4, supporting tables show the size of the trade sector in India, in terms of both employment and contribution to value added. Concluding remarks are given in Section 5.

## 2. BRIEF REVIEW OF COUNTRY PRACTICES IN MEASURING TRADE

Most developed countries have a regular mechanism for collecting data on sales/turnover and these data are directly used for estimating the margins and intermediate consumption. Adjustments are also made for the purchase cost of goods sold for changes in inventories net of appreciation. Some countries use physical quantity indicators for certain retail activities. For volume estimates, either the margins or the sales are deflated by separate price indices or volume extrapolators are used for particular kinds of trade. Usually sales volumes are used as a proxy for margin volumes, which means that the ratio of margins to sales is treated as fixed.

Developing countries estimate the contribution of unorganized trade activity to GDP in a number of ways. Some developing countries assume that unorganized trade is a fixed proportion of organized trade activity. A few countries apply value added ratios of organized sector to the total value of output of trade activity in the unorganized sector, which is estimated from economic censuses or some benchmark surveys/studies. Finally, several developing countries use labor input methods (LIM) to estimate the contribution of unorganized trade activity. How India applies the LIM is described in more detail below.

For measuring the real gross output of trading activity, the procedures adopted by countries include:

- Deflating the gross margins by a consumer price index (CPI) or a producer price index (PPI) (single deflation).
- Deflating separately the sales value of goods and the purchase value of sold goods by respective price indices and taking the difference as gross margins in real terms. One problem with this double-deflation method is that it can give erratic results when the price indices used in double deflation differ significantly from each other, or when the margins are low.
- Moving the benchmark or base year estimates with the deflated value of sales to obtain a volume measure of gross output in trade. This assumes that the ratio of margins to sales is fixed.
- Preparing a "gross trading index" (GTI) based on the volumes of goods traded. A GTI typically covers agriculture, mining, manufacturing, and imports.

Turning to the Indian methodology for the organized trade sector, measurement is in line with standard accounting procedures as regards the nominal

estimates. However, for constant price estimates the Central Statistical Organisation (CSO) does not apply price deflators to the nominal GVA figure, but uses a specially compiled quantum index based on the quantities of different products handled by trading units in the public sector. Generally, it is difficult to find appropriate price deflators for many service activities including trade, and the CSO considers that this specially compiled volume index is more appropriate. Another advantage is that this procedure independently provides an implicit price index for retailing activity.

For the unorganized sector, the CSO practice of using the labor input method described below ensures that trade activity is exhaustively covered in the GVA estimates. In addition, the application of a specially computed GTI for extrapolating the base year estimates, also described below, gives a better set of estimates of GVA for trade activities as it takes into account the volumes of goods that are handled by traders. Here again, since the GTI is computed both at current and at constant prices, an implicit price index for retailing in the unorganized sector can be independently computed. The advantage of this implicit price index is that it takes into account the number of goods transacted by the traders and the underlying prices of each of these goods.

### 3. METHOD OF COMPILING GVA FOR TRADE IN INDIA

#### *Coverage*

The trade industry includes wholesale and retail trade in all commodities whether produced domestically, imported, or exported. It covers activities of purchase and selling agents, brokers, and auctioneers. Wholesale trade covers units which resell new and/or used goods without transformation, to other industries or final users. Retail trade covers units, which mainly resell without transformation new and used goods for personal or household consumption. According to India's National Industrial Classification (NIC) 1998 (which is identical to the International Standard Industrial Classification (ISIC) Rev. 3.0 at 4-digit level), this industry consists of the following five categories in the Indian national accounts:

- Maintenance and repair of motor vehicles
- Sale of motor vehicles
- Wholesale trade except of motor vehicles and auctioning activities
- Repair of personal household goods
- Retail trade, except motor vehicles.

The GDP estimates for trade are prepared separately for three institutional sectors in the Indian national accounts:

- The public sector, comprising: (a) departmental enterprises of government, which is part of general government in the System of National Accounts, 1993 (1993 SNA; CEC *et al.*, 1993); and (b) public enterprises, which are equivalent to public non-financial corporations in the 1993 SNA.
- The private organized sector (which is equivalent to private non-financial corporations in the 1993 SNA).

- The private unorganized sector and private non-profit institutions serving households (NPISHs).

### *Estimates of GVA*

Estimates of GVA relating to public sector units engaged in both retail and wholesale trade are based on the analysis of accounts of the public sector enterprises and budget documents. A complete analysis of the reports, including the profit–loss accounts and balance sheets is undertaken for preparing the components of value added, as well as the output (margins) and intermediate consumption. The constant price estimates of value added in the public sector are prepared by moving the base year estimates with a specially compiled quantum index based on quantities of different products handled by trading units in the public sector. This procedure is presumed to be better than applying a price deflator on the margins, because no suitable price indices are available for retail trade in the public sector.

For the private organized sector, GVA estimates are compiled separately for corporations and cooperative societies. Corporations file annual accounts and the Reserve Bank of India (RBI) compiles national accounts aggregates from the accounts of a sample of companies. The estimates of GVA for cooperative trade societies are prepared from the data made available by the National Bank for Agriculture and Rural Development (NABARD). The constant-price estimates are obtained by deflating the current prices estimates with the GDP implicit deflator, excluding *trade, hotels, and restaurants*.

For the unorganized trade sector, indirect methods are used. Benchmark estimates are prepared by the labor input method (LIM) (OECD, 2002) and these benchmark estimates are extrapolated using a specially constructed index of gross trading income (GTI).

The LIM requires data on (i) employment in retail trade (CSO, 1987, 2004), and (ii) value added per worker. The employment data that is available from the household labor force surveys refers to the number of workers, whereas for the LIM, one needs the number of jobs rather than workers. This is because estimates of value added per worker come from enterprise surveys which count the numbers of persons working in each enterprise. This means that a person performing two jobs is counted as one in labor force surveys, but needs to be counted as two persons in applying the LIM. The household labor force survey collects information on persons with more than one job so that it is possible to provide estimates of the total number of jobs in the trade sector. However these estimates of the total number of jobs in trade include the trade jobs performed in the public sector and in the private organized sector. Therefore, one needs to make adjustment for this before arriving at the labor input in the unorganized sector. The estimated total labor input in the public and private organized sector is available from the Ministry of Labour every year and this is deducted to obtain an estimate of the total number of jobs in the unorganized trade sector.

The value added per employee (strictly speaking the value added per job) in trade is estimated from *ad hoc* enterprise surveys on trade carried out by the National Sample Survey Organisation (NSSO). This is done by dividing the total value added in trade estimated from the enterprise survey by the number of

workers in trade, also estimated from the same enterprise survey. GVA is then obtained as the product of value added per worker and the total number of workers (jobs) in unorganized trade.

Since the labor force surveys are conducted once every five years and enterprise surveys are conducted on an irregular basis, it is only possible to estimate the GVA for trade for the base years of national accounts. For subsequent years, a volume index, called the Index of Gross Trading Income (GTI) is specially prepared using the detailed output data available every year from the commodity producing industries, such as agriculture, livestock, forestry, fishing, mining, manufacturing, and imports.

The GTI is based on the value of the marketable surplus in commodity producing sectors—i.e. agriculture, livestock, fishing, forestry, mining, and manufacturing—plus the value of imports. These values are then increased by the corresponding trade and transport margins (TTMs). The marketable surplus estimates for agriculture are available regularly from the Ministry of Agriculture. The TTMs are estimated from the ad hoc enterprise surveys and benchmarked to the latest input–output tables.<sup>1</sup>

The GTI is computed at both nominal and constant prices so that the base year estimates of GVA in trade are extrapolated by the GTI to obtain the GVA estimates for trade at both current and constant prices. In the absence of any regular data on the output of trade in the unorganized sector, this volume index is believed to provide a reliable measure for the trading activity, as it takes into account the total volume of goods entering the trading chain and their prices at a detailed commodity level. As the GTI is computed at both nominal and constant prices, the base year GVA can be extrapolated separately with these two indices, rather than preparing GTI only at nominal prices and using a price deflator to arrive at GVA in real terms. We consider that this procedure provides a good measure of the output of retail activity in the unorganized sector; it is an exhaustive estimate because it is based on the total number of jobs in the unorganized trade sector.

#### 4. SIZE OF RETAIL TRADE ACTIVITY

Table 1 shows that trade enterprises account for 37.8 percent of all enterprises in India as a whole, 46.9 percent of all enterprises in urban areas, and 31.9 percent of enterprises in rural areas. The industry is dominated by small retailers which do not employ any hired workers. Such enterprises constitute 39.2 percent of the total, and almost 50 percent in urban areas.

Between wholesale and retail, for each wholesale enterprise there are about 18 retail enterprises in the country. While this ratio is about 14 in urban areas, it is about 21 in rural areas.

Table 2 shows the distribution of trading units by the number of workers in the unit. Units that have no hired workers but are shown as having two or more workers are run by the owner together with other family members. Of the 15.8

<sup>1</sup>The commodity/crop wise marketable surplus ratios and TTMs used in preparing the GTI index are given in the CSO's publication, *National Accounts Statistics: Sources and Methods* (CSO, 2007), which is available on the internet at [www.mospi.gov.in](http://www.mospi.gov.in).

TABLE 1  
NUMBER OF TRADING ENTERPRISES IN INDIA, ECONOMIC CENSUS, 2005 (THOUSANDS)

Units in	Rural		Urban		Total	
	Without Any Hired Workers	Total	Without Any Hired Workers	Total	Without Any Hired Workers	Total
Wholesale trade	261	368	209	484	470	852
Retail trade	6,170	7,789	4,396	7,164	10,566	14,953
Total trade	6,431	8,157	4,605	648	11,036	15,805
All activities	18,110	25,536	8,830	16,291	26,940	41,827
<i>Percentage share in all activities</i>						
Wholesale trade	1.4	1.4	2.4	3.0	1.7	2.0
Retail trade	34.1	30.5	49.8	44.0	39.2	35.7
Total trade	35.5	31.9	52.2	46.9	41.0	37.8
All activities	100.0	100.0	100.0	100.0	100.0	100.0

Source: Fifth Economic Census, 2005 (CSO, 2008).

million trade enterprises in India, 58.5 percent are operated by the owner alone, 11.3 percent by the owner together with family members, and the balance of 30.2 percent with at least one hired worker.

Table 3 shows the labor input, i.e. the number of jobs being performed in trading enterprises. Trade jobs were 7.4 percent of all jobs in 2004–05, but the percentage is significantly higher at 18.1 percent in urban areas compared to only 4.5 percent in rural areas. For rural and urban areas combined, employees in trade are predominantly male—87 percent males compared to only 13 percent females. The gender split is broadly similar in both rural and urban areas.

Table 4 gives the estimates of GDP from trade in total GDP at current prices for the year 2007–08. Since the breakdown of retail and wholesale trade is not available for the organized sector, the overall contribution of retail trade has not been provided in the table. Trade as a whole generated 14.2 percent of GDP in 2007–08, with 11 percent coming from the unorganized sector.

## 5. CONCLUDING REMARKS

It is clear that the best way to measure the gross output and value added of the trade sector would be through regular sample surveys based on a complete register of all trade enterprises. India, in common with many other developing countries, does not have a survey system of this kind in place at the present time and so is compelled to use indirect methods to estimate the contribution of the trade sector to GDP for the very substantial unorganized sector. In common with other developing countries, the Indian national accountants use a labor input method whereby the total number of jobs in the unorganized (informal) trade sector is assumed to generate value added at the same rate as is observed in five-yearly enterprise surveys of the unorganized trade sector. The special feature of the Indian methodology is that these periodic benchmark estimates are moved forward in the years between surveys using a specially constructed Index of Gross Trading Income. This index measures the nominal and constant price changes in the total supply of goods that

TABLE 2  
DISTRIBUTION OF TRADING UNITS BY NUMBER OF WORKERS, ECONOMIC CENSUS 2005

Enterprise Type	Trade Type	Distribution of Number of Trading Units by Number of Workers in the Unit					All
		1	2-5	6-9	10+	All	
<i>Rural</i>							
Without hired worker	Wholesale	214,029	45,702	658	250	260,639	
	Retail	5,120,899	1,039,546	6,031	3,397	6,169,873	
	All	5,334,928	1,085,248	6,689	3,647	6,430,512	
With at least one hired worker	Wholesale		96,709	7,374	3,327	107,410	
	Retail		1,561,671	38,692	18,430	1,618,793	
	All		1,658,380	46,066	21,757	1,726,203	
All enterprises	Wholesale	214,029					
	Retail	5,120,899	142,411	8,032	3,577	368,049	
	All	5,334,928	2,601,217	44,723	21,827	7,788,666	
			2,743,628	52,755	25,404	8,156,715	
<i>Urban</i>							
Without hired worker	Wholesale	171,479	37,283	616	89	209,467	
	Retail	3,739,778	650,488	4,786	844	4,395,896	
	All	3,911,257	687,771	5,402	933	4,605,363	
With at least one hired worker	Wholesale		239,686	28,900	6,315	274,901	
	Retail		2,594,541	141,280	32,607	2,768,428	
	All		2,834,227	170,180	38,922	3,043,329	
All enterprises	Wholesale	171,479					
	Retail	3,739,778	276,969	29,516	6,404	484,368	
	All	3,911,257	3,245,029	146,066	33,451	7,164,324	
			3,521,998	175,582	39,855	7,648,692	
<i>Rural and urban combined</i>							
Total trade		9,246,185	6,265,626	228,337	65,259	15,805,407	
% Distribution:		58.5	39.6	1.4	0.4	100.0	

Source: Fifth Economic Census, 2005 (CSO, 2008).



TABLE 3  
TOTAL LABOR INPUT IN TRADE AND ALL ACTIVITIES, 2004–05 (THOUSANDS)

Activity	Rural			Urban			Total		
	Female	Male	Total	Female	Male	Total	Female	Male	Total
Wholesale	76	1,975	2,051	246	3,609	3,855	322	5,584	5,906
Retail	2,838	14,558	17,396	2,204	15,799	18,003	5,042	30,357	35,399
Total trade	2,915	16,533	19,448	2,450	19,408	21,857	5,365	35,941	41,305
All activities	150,673	285,131	435,804	25,700	95,025	120,725	176,373	380,156	556,529
<i>Percentage in total number of workers in all activities</i>									
Wholesale	0.1	0.7	0.5	1.0	3.8	3.2	0.2	1.5	1.1
Retail	1.9	5.1	4.0	8.6	16.6	14.9	2.9	8.0	6.4
Total trade	1.9	5.8	4.5	9.5	20.4	18.1	3.0	9.5	7.4
All activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Percentage in total number of workers in trade</i>									
Wholesale	0.2	4.8	5.0	0.6	8.7	9.3	0.8	13.5	14.3
Retail	6.9	35.2	42.1	5.3	38.2	43.6	12.2	73.5	85.7
Total trade	7.1	40.0	47.1	5.9	47.0	52.9	13.0	87.0	100.0

Source: Results of NSSO 61st round survey on employment and unemployment (NSSO, 2009).

TABLE 4  
CONTRIBUTION OF TRADE TO GDP, 2007–08 (BILLION INDIAN RUPEES)

	Organized Sector	Unorganized Sector	Total
Wholesale trade	–	1,054	–
Retail trade	–	3,706	–
Total trade	1,356	4,761	6,118
All activities	1,536	2,672	43,208
<i>Percentage share in the GDP of all activities</i>			
Wholesale trade	–	2.4	–
Retail trade	–	8.6	–
Total trade	3.1	11.0	14.2
All activities	42.9	57.1	100.0

Source: National Accounts Statistics, 2009 (CSO, 2009).

pass through the trade channel. Indian national accountants believe that they are thus making the best possible use of the data available to them. India's estimates of the trade sector's contribution to value added are clearly not perfect, but they appear to be the best that can be made given the present data sources.

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