

## NOTES AND DEBATES

### The Indian informal sector: The impact of globalization and reform

By Eckhard SIGGEL\*

**Abstract.** *Globalization and economic reforms typically affect the formal sector, the informal sector existing outside regulation. Yet, numerous links between them mean the informal sector is variously affected. Traditionally, the model used to explain the impact of these forces was labour market segmentation and migration: workers laid off in the formal sector increase informal labour supply, leading to wage decline and increased poverty. The author examines whether this pattern applies in India following economic reforms in the 1990s, and finds a more appropriate model, driven by expansion both in labour supply and in demand, through outsourcing, skill transfers and new enterprises.*

The impact of globalization and economic reforms is most directly felt by the agents and activities of the formal sector. By its nature, the informal sector exists in the shadow of regulations. Nevertheless, there are various ways in which the informal sector is affected by economic reforms. For instance, trade liberalization, which tends to lower the prices of tradable goods, can have a similar effect on informal-sector prices, to the extent that its products are close substitutes for tradable goods and services. The informal sector can also be affected by trade liberalization through the linkage of labour markets: workers who lose their jobs in the formal sector help increase the labour supply to the informal

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\* Department of Economics, Concordia University, Montreal.

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sector and, as a consequence, informal-sector incomes suffer. At least, this is the traditional way the two sectors have been connected in models of rural–urban migration and the segmented labour market.<sup>1</sup> There are, however, other linkages between the formal and the informal sectors, which are discussed and evaluated in what follows. Indeed, assessment of the impact of reforms on the informal sector depends largely on which linkages are the most relevant empirically.

The main aim of this article is to examine the impact on the informal sector of the reforms undertaken in India in the 1990s and, in particular, to see whether they resulted in expansion or contraction of the sector, as well as higher or lower incomes in the informal sector, with consequent implications for poverty. These implications follow because poverty is more likely to be present in the informal sector than in the formal sector, as it affects most of the unemployed, who survive by doing irregular, often badly paid jobs. Our interest in the topic was heightened by the findings of Chauduri, Schneider and Chattopadhyay (2006) that the liberalization of the Indian economy in 1991/92 had a significant negative impact on the informal sector.<sup>2</sup> The present study proceeds essentially by screening the extensive literature on the subject – this literature is often contradictory, as various authors use different definitions and sources.

The article first discusses concepts of informality and the delineation of the informal sector in the international context. It focuses on linkages between the formal and the informal sectors, in order to derive predictions about the impact of reform on the informal sector. In the third section, a number of studies of the Indian informal sector are examined, in order to see how it is organized and connected to the formal sector. The fourth section examines what is known about the impact of the Indian reforms of the early 1990s on the informal sector, especially with respect to employment and incomes. The fifth section presents conclusions.

### *Informality: Concept, delineation and linkages*

The informal sector and its role in economic development have attracted the attention of many scholars in recent years. Unfortunately, a variety of definitions of the sector has been used, both in the Indian and the international contexts, so that the picture that emerges of the sector and of its fate under economic reform is not well understood.

#### **Sector definitions**

The term “informal sector” first appeared in an ILO report on Kenya (1972). That report defined informal-sector activities as those characterized by “(a) ease

<sup>1</sup> For instance compare chapter 8 in Perkins et al. (2001). Recently, some authors have questioned the dual labour market hypothesis; see Pratap and Quintin (2006).

<sup>2</sup> Chauduri, Schneider and Chattopadhyay (2006) use the terms “shadow economy” and “hidden economy”, but their definition shows clearly that they are dealing with the informal sector.

of entry; (b) reliance on indigenous resources; (c) family ownership of enterprises; (d) small scale of operation; (e) labour-intensive and adapted technology; (f) skills acquired outside the formal school system; and (g) unregulated and competitive markets" (ILO, 1972, p. 6). The first official definition of the sector was presented two decades later in a "Resolution concerning statistics of employment in the informal sector" (hereafter: The Resolution) adopted by the 15th International Conference of Labour Statisticians, held in Geneva in January 1993. This definition identifies the following characteristics of units operating in the informal sector: a low level of organization, with little or no division between labour and capital; operation on a small scale; casual employment, kinship or personal and social relations rather than contractual arrangements; enterprises based on the household, and the absence of accounts separating the assets and income flows of productive activities from those of the household (ILO, 1993, paragraphs 5.1, 5.2, 6 and 7).

The Resolution stresses the need to distinguish between informal-sector activities and activities in the hidden or underground economy (*ibid.*, paragraphs 5.3). Some activities in the informal sector may be illegal, but because of the weakness of the fiscal authority and the non-enforcement of property rights in developing countries, the dividing line between legal and illegal activities there tends to be less clear. The terms "illegal" or "underground" economy are therefore more appropriate in high-income countries than in low-income countries.<sup>3</sup>

The definitions of the informal and the unorganized sectors discussed so far are employer oriented; an alternative approach is based on the nature of employment. In this approach, the data for the delineation of the sector are taken from household surveys. The total adult population can be broken down into employers, the self-employed and employees; and employees can then be subdivided by category of employment. If this approach is used, two categories of employment are typically included (but ignored by the employer-oriented approach), namely: workers rendering household services; and informal employees in formal enterprises. Informal employment is therefore a broader category than employment in informal enterprises. This distinction is important in the Indian context, as mentioned in section three.

A further distinction (also important in the Indian context) is the one between urban and rural employment. The informal-sector definition usually covers only non-agricultural activities; though subsistence agriculture may exhibit the characteristics of informality, it differs from activities in manufacturing and services. However, the informal sector does include non-agricultural activities in rural areas. This distinction is also extremely important in India, owing to the very large size of the rural population.

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<sup>3</sup> Chaudhuri, Schneider and Chattopadhyay (2006) make extensive use of the terms "hidden" and "shadow" economy, while avoiding the term "informal sector". This is regrettable because in most low-income countries the informal sector is anything but hidden: far from being in the shadow, it often functions under open skies, which in Kenya has earned it the name *jua kali*, which means "under the hot sun".

### Formal–informal sector linkages

The best-known linkage of the informal with the formal sector is illustrated by a model of labour market segmentation. According to this model, the labour supply to the informal sector is a residual and consists of all those workers who cannot find employment in the formal sector. The modern-sector labour supply, in turn, depends on the incentives for rural–urban migration provided by the sector through the differential in expected earnings, as described by the well-known Todaro model (Todaro, 1969). The formal-sector excess supply of labour results from its above-equilibrium wage rate, based on various distorting factors, such as the minimum wage and the ability of modern-sector firms to pay higher wages and to screen workers for higher quality. In this model of formal/informal-sector interaction, known as labour market segmentation in dual economies (cf. Perkins et al., 2001, p. 286ff), a reduction in formal-sector labour demand following trade liberalization would increase the excess supply of labour, which corresponds to the labour supply in the informal sector. The effect of reduced formal-sector labour demand would be an increase in informal-sector labour supply, which in turn would result in a wage decline, but increased informal-sector employment. Similar conclusions based on this model were reached by Fields (1975) and Mazumdar (1976).

An alternative linkage model is that proposed by Marjit and Maiti (2006), as well as by Marjit, Kar and Sarkar (2004), who emphasize the linkage through the capital market and assume that capital is shifted to the informal sector. Their model predicts that, following a decline in formal-sector production, capital would be released and reinvested in the informal sector, where it would result in increased labour demand and a positive effect on remuneration and employment. Consequently, trade liberalization may have a positive impact on employment and income in the informal sector. Unfortunately, the authors of this model do not deal explicitly with the crucial issue of how the formal-sector capital stock that is phased out is shifted into the informal sector.

Another model focuses not on capital but on skilled workers, who become informal-sector entrepreneurs and contribute to expanded demand for unskilled labour. Under downward wage pressure, workers who have worked in factories for years and have accumulated know-how of manufacturing processes and machinery may prefer to become self-employed and start a small business in the informal sector, where they hire unskilled workers and train them in the use of simple tools or machines. Similar observations were made by Maloney (1999). The impact of trade liberalization on the informal sector may then be positive rather than negative.

A fourth kind of linkage between formal and informal sectors is based on backward and forward linkages, particularly those of intermediate inputs, as well as the subcontracting of informal workers by formal-sector units. Though traditional views (Tokman, 1978) emphasized the dualistic nature of these sectors, Harriss (1990) and Xaba, Horn and Motala (2002) stressed the importance of linkages. To the extent that the informal sector supplies intermediate inputs to the formal sector, a decline in the output of the latter will necessarily lead to

a decline in output and labour demand in the former. This model is of some importance in India, where formal-sector firms (including exporters) are known to subcontract extensively with individuals and families in rural areas (cottage industries).

In what follows, we examine which of these various models is supported most strongly by evidence from the Indian experience. This is done in two stages, first by examining the characteristics of the Indian informal sector; and then by focusing on the changes observed in the reform and the post-reform periods.

### *Characteristics of the Indian informal sector*

Four characteristics of the Indian informal sector stand out and contrast with the formal or organized sector: its enormous size, level of productivity, level of remuneration and difficulties of access to credit. Sector size in terms of output and employment is important because the sector's growth relative to that of the formal sector allows us to infer factor movements between them. In this context, it is important to distinguish between employment in the informal sector and informal employment. The levels of informal-sector productivity and earnings are important as they are closely related to the extent of poverty. Informal-sector entrepreneurs' difficulties gaining access to credit is one of their main handicaps vis-à-vis the formal sector. Details of this issue in an Indian context may be found in Kumar (2001) and Kundu, Lalitha and Arora (2001), but are not discussed further here.

The Indian Central Statistical Organization uses the terms "organized" and "unorganized" sectors (instead of "formal" and "informal"). Although these terms are intended to capture the same characteristics as "formal" and "informal", they differ on a measurement issue: in India the unorganized sector includes agriculture, whereas the informal sector as defined earlier tends to be limited to non-agricultural activities. One may call it the urban informal sector, but even this term is slightly misleading as informal and non-agricultural activities can be located in rural areas.

### **Size and relative importance**

Several approaches have been used to estimate employment, output and other variables in India's informal sector: (a) through the Economic Census (direct approach); (b) by subtracting the organized workforce from the total workforce obtained from the Population Census or large-scale household surveys (indirect approach); (c) by determining employment in the informal sector directly through sample surveys of households.

Since there is no universally accepted definition of the informal sector and since data on it are scarce, the simplest approach seems to be the indirect one, which deducts formal-sector employment from total employment. Kulshreshtha and Singh (2001) obtained informal-sector employment as a residual in this fashion. According to their estimates for 1993–94, around 93 per cent of the total

workforce (348.1 million out of 374.0 million persons) worked in the unorganized sector. Approximately two-thirds of those employed in the unorganized sector were active in agriculture. Excluding agricultural activities from the unorganized sector, the authors arrived at an estimate of 112.2 million employed in the informal (non-agricultural) sector, which corresponds to 80 per cent of the total non-agricultural workforce, or 30 per cent of the total workforce. This approach of estimating the size of the informal sector has the following weakness: since data on private establishments employing 10–24 persons are collected on a voluntary basis, the size of the organized sector tends to be underestimated. This leads to an overestimation of the unorganized or informal sector, as the authors recognize (*ibid.*, p.64).

Mitra (2001), adopted another definition and method of estimating the size of the informal sector. According to his definition, the informal sector comprises own-account enterprises and establishments employing 1–9 workers. Using this direct approach and the data from the Economic Census, he added up the numbers employed in own-account enterprises and in establishments with 1–9 workers. This led to an informal-sector estimate of 61 per cent of total non-agricultural employment in 1990: 33.3 per cent were employed in own-account enterprises and 27.7 per cent in establishments with 1–9 workers (*ibid.*, p.86–88). Clearly, this estimate is not compatible with that of Kulshreshtha and Singh, and it is unclear whether the discrepancy stems from changes over time or from the methods of estimation.

Using a second and indirect approach, Mitra subtracted organized-sector employment from total non-agricultural employment. Data on employment of the organized sector were taken from the Employment Market Information (EMI) programme of the Directorate-General of Employment and Training (DGE&T), and data on total non-agricultural employment were those of the Population Census 1991. Informal-sector employment estimated through this approach was 72.4 per cent of the total non-agricultural employment, which is substantially larger than that resulting from the direct approach.

The Delhi Group (2000) has presented new estimates of the size of the informal sector obtained from the National Sample Survey 1999–2000 Informal Sector Survey. Instead of tracking informal-sector workers through enterprises, this survey adopts the household approach, which tracks enterprises through the informal-sector workers identified by household surveys. According to this Informal Sector Survey, 83.2 million non-agricultural workers were employed in the informal sector, an average of 1.8 employees per enterprise.<sup>4</sup>

In spite of the differences in estimation methods and in the period considered, one can conclude that informal-sector employment in India represents

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<sup>4</sup> Further estimates exist for “informal employment”, which also includes independent workers providing household services and employees with informal jobs in formal-sector enterprises. According to estimates by Saha, Kar and Baskaran (2004) and by Sastry (2004), this category would bring the proportion of informal employment relative to total employment up to 95.6 per cent and 92 per cent, respectively.

between 60 and 80 per cent of non-agricultural employment. By comparison with estimates from other countries by Charmes (1990),<sup>5</sup> India's informal sector is extremely important as employer of last resort and as source of revenue.

### Earnings in the informal sector

As in other countries, in India the informal sector is characterized by low wages, low productivity, poor working conditions and little or no social security. While the time-wage is a common mode of payment in the formal sector, the piece-wage prevails in the informal sector, particularly in informal manufacturing. A case study of the ceramic-ware industry in Gujarat revealed that 88 per cent of the informal-sector units used the piece-rate payment system. The study indicated that monthly earnings ranged from Rs.1200 to Rs.1800<sup>6</sup> for adult workers, but did not exceed Rs.600 for child workers (Das, 2001, pp.191-192). According to M. Singh (2001, p. 227), piece-wages are also common in informal manufacturing of surgical instruments, where 95 per cent of the workers are on piece rates. They earn between Rs.800 and Rs.1800 per month if they work for an employer and around Rs.2000 per month if self-employed. Although being self-employed yields higher remuneration, there are costs associated with it: in informal surgical manufacturing the self-employed work longer hours (about 300 hours/month) and have no weekly holiday.

Informal-sector employees in the information technology (IT) sector (which has grown at an annual rate of over 50 per cent over the past decade) have higher average earnings than in other sectors. Wages in this sector range from under Rs.2000 for school drop-outs (mainly) to Rs.10,000 for university graduates and professionally qualified personnel (Kumar, 2001, p. 246). The educational level of employees in IT services is relatively high: "In terms of education and training, as many as 95 per cent of the employees, 82 per cent of the employers and 77 per cent of the self-employed had at least a college degree or higher qualification" (Anand, 2001, p. 292). Significantly lower wage levels are reported in construction (*ibid.*, p. 278), and in tourism, transport and restaurants (S. Singh, 2001, p. 262-271).

The micro evidence presented in these studies leads to two conclusions. First, that earnings in the informal sector correlate highly with the educational attainments of employees as well as the managerial capabilities of informal-sector units. This evidence speaks in favour of competitive conditions in the informal labour market. Second, that wages in the informal sector are at the lower end and very close to national and international poverty lines, implying that large numbers of informal-sector workers are poor. It follows that any reduction in informal-sector wages resulting from the reforms will have increased the level of poverty in the country.

<sup>5</sup> Charmes presents estimates for Burundi (65.6 per cent), Egypt (58.7 per cent), Iran (43.5 per cent), Morocco (56.9 per cent) and Pakistan (39 per cent).

<sup>6</sup> At a rate of 40Rs/US\$ this translates into \$30-45 or less than \$2 per day.

### *The Indian informal sector under the reforms*

The economic reforms of the 1990s (which included trade liberalization, currency realignment, an alleviation of industrial licensing and regulation, as well as changes in fiscal and monetary policies) were wide-ranging and spread over several years. They were expected to have negative short-run and more positive long-run effects on the informal sector. By reviewing the empirical evidence on employment, productivity and incomes reported by various authors, we examine which of the models discussed above is most strongly supported by this evidence. The models are referred to as the conventional segmentation model A, the capital transfer model B and the skilled labour transfer model C.

#### **Informalization and productivity growth**

Following the economic reforms of 1991 and a two-year period of adjustment, the Indian economy achieved high growth rates, especially in the manufacturing and services sectors, over the period 1993–94 to 1996–97. After 1996–97, the economy was hit by a recession characterized by decreasing growth of manufacturing output, and slow growth in the services sector. The data on output and employment before and after the reforms show positive growth rates in the organized and the unorganized sectors. According to Unni (2003), the growth rate of net domestic product (NDP) in the unorganized sector increased from 5.7 per cent in 1983–94 to 7.2 per cent in 1994–2000. In the organized sector, the growth rate of NDP increased from 7.2 to 8.4 per cent over the same period. Employment growth declined in both sectors from the pre-reform period (1983–94) to the post-reform period (1994–2000): from 1.2 to 0.4 per cent in the organized sector, and from 3.9 to 3.2 per cent in the unorganized sector. If this information on NDP and employment growth is combined, it follows that there was an increase in labour productivity growth in both sectors: from 6 to 8 per cent in the organized sector, and from 1.8 to 4 per cent in the unorganized sector.

The reported data suggest that although the growth rate of employment declined in both sectors after the reforms, employment kept growing at a much higher rate in the unorganized sector (3.2 per cent in 1994–2000, compared with only 0.4 per cent in the organized sector). Unni commented on the shifting of activities from the organized to the unorganized sector as follows: “It is likely that only the high-productivity managerial and technologically superior activities are retained in the organized sector, while some of the activities are shifted to the unorganized sectors. Such a shift of activities from the organized sector helps to raise the productivity levels in the unorganized sectors” (Unni, 2003, p. 73). The shifting of activities and subsequent increase in productivity can be taken as evidence of income stability in the informal sector.

In a recent study of formal/informal-sector linkage in India, Sinha and Adam (2006) used a computable general equilibrium (CGE) model focusing on the labour market linkage to explain the phenomenon of “jobless growth” as a consequence of trade liberalization. Their simulations based on varying assumptions about wage rigidity in the formal sector lead to the conclusion that



though regular employment in the formal sector shrank, the substitution of casual workers for regular ones through outsourcing may have enlarged the informal sector, but may also have led to a decline in informal workers' real wages. Although the authors' model simulations provide interesting insights into the working of segmented labour markets, their conclusions are not fully compatible with de facto observations of informal-sector productivity and real wages by other authors, notably Unni (2003).

The reallocation of labour has been observed in case studies of specific industries. Cotton textiles are an example of an industry where this reallocation occurred on a large scale. Roy (2003) estimated the number of persons who lost jobs in mills between 1985 and 1996 at roughly 272,000. These job losses were mostly due to the closure of a large number of mills for various reasons, including inability to compete with the power-loom industry, which has lower costs and better access to modern technology. Surveys showed that only about a quarter of these newly unemployed workers remained unemployed: most of them either found employment in informal-sector units or became self-employed. While the reallocation of labour from the formal cotton-textile industry to the informal sector is well known, the effect of the reforms on the reallocation of labour in other industries is not well documented.

### Subcontracting and outsourcing

Manufacturers' reactions to the reforms of the labour market included subcontracting, as mentioned by Unni (2003) and further analysed by Ramaswamy (2003). Ramaswamy computed an index of subcontracting intensity that measures the degree of product subcontracting in an industry, using Annual Survey of Industries (ASI) data for 377 industries in 1989–90 and 1994–95. The author concluded that in the factory sector of manufacturing the intensity of subcontracting increased from 10.7 per cent in 1989–90 to 12.3 per cent in 1994–95. Over the same period, the real value of subcontracting activity grew at a rate of 13.2 per cent.<sup>7</sup> Subcontracting increased in most industries: "Out of the 18 two-digit industry groups, 13 groups show an increase in subcontracting activity. The top five industries are textile products, metal products, beverages and tobacco, wool and silk products and chemical products in 1994–5" (*ibid.*, p. 167).

Outsourcing can take various forms. Manufacturing firms can either replace whole stages of transformation with intermediate inputs purchased from other firms, including unorganized-sector firms, or they can hire services from firms that specialize in supplying casual workers. Typical examples of the latter are cleaning and security services, but all kinds of other tasks can be transferred from regular employees to casual workers, who are engaged through subcontracting agencies. If concluded with informal contractors, this form of subcontracting can imply an increase in informal-sector labour demand, in addition to the increase in labour supply that comes with formal-sector job losses.

<sup>7</sup> From 7,048.00 Rs. crore in 1989–90 to 13,092.00 Rs. crore in 1994–95.

Outsourcing can therefore result in shifting workers from the formal to the informal sector without necessarily depressing earnings in the latter.

As observed earlier, the differential in labour productivity growth deserves further attention, given its importance for earnings. The levels and rates of increase in labour productivity in the organized and the unorganized sectors differ substantially. According to Unni (2003, p. 84–85), labour productivity in the organized sector increased from Rs.51,000 in 1983 to Rs.154,000 in 1999–2000, an increase of about 200 per cent or an annual average growth of 7.2 per cent. In the unorganized sector, it rose from Rs.16,000 to Rs.25,000, an increase of only about 56 per cent or an annual average growth of 2.8 per cent, widening the differential from about 70 to 84 per cent. Unni suggested that this difference in labour productivity growth was due at least partly to a higher increase in the capital-per-worker ratio in the organized sector. These observations suggest that the acceleration of productivity growth, which can (at least partly) be attributed to the reforms, also benefited the informal sector, though to a lesser extent. They also contradict the prediction of the conventional segmentation model (A) and are not perfectly compatible with model B, which assumes capital movement from the organized to the unorganized sector. The model C prediction based on skilled labour movements into the informal sector is compatible with the observations on employment and productivity. It needs to be further evaluated on the basis of what happened to earnings in the informal sector.

### **Informal-sector earnings**

According to 1993–94 National Sample Survey data, an increase in real earnings of workers in both the organized and the unorganized sectors can be confirmed. Since the data on the wages are distinguished only by worker status (regular or salaried and casual workers), it is assumed that salaried workers represent the workers in the organized sector and casual workers those in the unorganized sector. This is a plausible assumption because in fact most workers in the organized sector are salaried workers, and most workers in the unorganized sector are casual workers. The data on wages, also provided by Unni (2003), tell a story similar to that of the productivity data: accelerated growth after 1993/94 and a growing disparity between regular and casual workers.

In the manufacturing sector, Unni (2003) observed a scenario for productivity growth similar to the one described above, but a different scenario for wages. Though the productivity differential rose from 6.3 in 1983 to 9.9 in 1999/2000, the differential in daily wages declined from 2.1 in 1983 to 1.6 in 1999–2000 (Rs. 58.2 vs. Rs. 36), where the lower wage is that of casual workers. During the post-reform period (1993/94 to 1999/2000) their wage grew at an annual average of 4.2 per cent, faster than between 1983 and 1993/94, when it grew at an annual rate of only 2.6 per cent. Regular workers, on the other hand, experienced an average annual wage increase of 1.8 per cent before the reforms and of 1.3 per cent afterwards. Thus, despite the divergence of labour productivity between the organized and the unorganized manufacturing sectors, the inequality in the manufacturing wage decreased.

According to Unni (2003), this unexpected result could be due to some positive linkages between the organized and the unorganized manufacturing sectors, along with structural changes within them. Possibly, wages in the organized manufacturing sector had not yet adjusted to a rapidly increasing labour productivity, which could explain the decreasing wage inequality. The increase in labour productivity in the organized manufacturing sector is likely to have resulted from increased capital intensity. Another possibility is that certain production activities with low productivity in the organized sector were more productive than their counterparts in the unorganized sector and were shifted from the organized to the unorganized sector mostly through subcontracting, leading to higher productivity in both organized and unorganized sector units. There was also a shift from traditional labour-intensive activities, such as handicrafts, to more capital-intensive industries, such as electronics and chemical-based industries, which would also increase productivity levels (*ibid.*).

### *Conclusions*

This literature-based discussion of the Indian informal sector leads to several conclusions about the sector's role and the impact of the reforms. First, it is clear not only that the informal sector in India is vast and present everywhere, but also that it plays an important role as a buffer against economic shocks. Recent economic reforms, notably the opening of the economy to more international trade, could have led to a drastic rise in poverty levels. Before the reforms, the highly protected formal sector was marked by inefficiency and over-employment. The retrenchment of workers could have led to a massive drop in informal-sector earnings and thus to increased poverty. Clearly, this did not happen, at least not on a large scale. Three factors can be singled out as responsible for this result.

First, though trade liberalization was substantial, it did not reach the extreme of minimal protection. There is still substantial tariff protection in India and it needs to be reduced further, in order to reap additional benefits over time. Even more important is the fact that India's opening-up to trade was accompanied by internal reforms, which reduced barriers to entry and encouraged new business and modernization. Second, several industries in the formal sector succeeded in substantially reducing their costs, thereby increasing international competitiveness. The growth of industrial exports discussed in Siggel (2007) is evidence of this development. The reduction of value added and of employment was not therefore as extensive in the formal sector as it might have been. Third, the reduction of labour costs did not lead to a dramatic increase in unemployment, because of the way the transfer of manpower to the informal sector was carried out. Outsourcing through subcontracts has apparently avoided a simple increase in labour supply in the informal sector. Instead, informal-sector labour demand seems to have risen substantially as well, for instance through outsourcing for exports and through an increase in domestic services. Additional savings may have been mobilized for additional investments, too. The informal sector thereby also increased its labour productivity and earnings, though at a lower

level than in the formal sector. On the whole, the informal sector seems to have played the role of an employer of last resort, softening the potentially negative short-run impact of the reforms.

## References

- Anand, Harjit S. 2001. "Linkage between informal and formal sectors: Some findings from micro-level studies", in Kundu and Sharma, pp. 276–298.
- Charmes, Jacques. 1990. "A critical review of concepts, definitions and studies in the informal sector", in David Turnham, Bernard Salomé and Antoine Schwarz (eds): *The informal sector revisited*. Paris, OECD, pp. 10–48.
- Chaudhuri, Kausik; Schneider, Friedrich; Chattopadhyay, Sumana. 2006. "The size and development of the shadow economy: An empirical investigation from states of India", in *Journal of Development Economics*, Vol. 80, No. 2, pp. 428–443.
- Das, Keshab. 2001. "Workers and earnings in informal manufacturing: Evidence and issues in estimation", in Kundu and Sharma, pp. 179–195.
- Delhi Group. 2000. *Measurement of informal sector: The Indian experience*. Country paper presented to the Fourth Meeting of the Expert Group on Informal Sector Statistics (Delhi Group), Geneva, 28–30 Aug.
- Fields, Gary S. 1975. "Rural-urban migration, urban unemployment and underemployment, and job-search activity in LDCs", in *Journal of Development Economics*, Vol. 2, No. 2, pp. 165–187.
- Guha-Khasnobis, Basudeb; Kanbur, S.M. Ravi. (eds). 2006. *Informal labour markets and development*. Basingstoke, Palgrave Macmillan.
- Harriss, John C. 1990. *Linkages between the formal and the informal sectors in developing countries: A review of literature*. Working Paper No. 50. World Employment Programme. Geneva, ILO, Mar.
- ILO. 1993. *Resolution concerning statistics of employment in the informal sector*. Report of the conference ICLS/15/D.6 (Rev.1). Fifteenth International Conference of Labour Statisticians, Geneva, 19–28, Jan., pp. 51–64.
- . 1972. *Employment, incomes and equality: A strategy for increasing productive employment in Kenya*. Geneva.
- Kulshreshtha, A. C.; Singh, Gulab. 2001. "Informal sector in India: Its coverage and contributions", in Kundu and Sharma, pp. 48–82.
- Kumar, Nagesh. 2001. "Small information technology services, employment and entrepreneurship development: Some explorations into Indian experience", in Kundu and Sharma, pp. 241–255.
- Kundu, Amitabh; Lalitha, N.; Arora, Sant Lal. 2001. "Growth dynamics of informal manufacturing sector in urban India: An analysis of interdependencies", in Kundu and Sharma, pp. 93–123.
- ; Sharma, Alakh N. (eds). 2001. *Informal sector in India: Perspectives and policies*. New Delhi, Institute for Human Development and Institute of Applied Manpower Research.
- Maloney, William F. 1999. "Does informality imply segmentation in urban labor markets? Evidence from sectoral transitions in Mexico", in *World Bank Economic Review*, Vol. 13, No. 2, pp. 275–302.
- Marjit, Sugata; Maiti, Dibyendu S. 2006. "Globalization, reform and the informal sector", in Guha-Khasnobis and Kanbur, pp. 9–28.
- ; Kar, Saibal; Sarkar, Punyabrata. 2004. "Capital mobility and informal wage in a small economy: Two examples", in *South Asia Economic Journal*, Vol. 5, No. 2, pp. 261–266.
- Mazumdar, Dipak. 1976. "The urban informal sector", in *World Development*, Vol. 4, No. 8, pp. 655–679.

- Mitra, Arup. 2001. "Employment in the informal sector", in Kundu and Sharma, pp. 85–92.
- Perkins, Dwight H.; Radelet, Steven C.; Snodgrass, Donald R.; Gillis, Malcolm; Roemer, Michael. 2001. *Economics of development*. Fifth edition. New York, NY, W.W. Norton and Company.
- Pratap, Sangeeta; Quintin, Erwan. 2006. *The informal sector in developing countries: Output, assets and employment*. Research Paper No. 2006/130. Helsinki, United Nations University/World Institute for Development Economics Research.
- Ramaswamy, K. V. 2003. "Liberalization, outsourcing and industrial labour markets in India: Some preliminary results", in Uchikawa, pp. 155–177.
- Roy, Tirthankar. 2003. "Social costs of reforms: A study of job loss with special reference to declining industries in 1990-1998", in Uchikawa, pp. 121–154.
- Saha, V.; Kar, A.; Baskaran, T. 2004. *Contribution of informal sector and informal employment in Indian economy*. Paper presented to the Seventh Meeting of the Expert Group on Informal Sector Statistics (Delhi Group), New Delhi, 2–4 Feb.
- Sastry, N.S. 2004. *Links among employment in informal sector, poverty and gender*. Paper presented to the Seventh Meeting of the Expert Group on Informal Sector Statistics (Delhi Group), New Delhi, 2–4 Feb.
- Siggel, Eckhard. 2007. "Economic reforms and their impact on the manufacturing sector: Lessons from the Indian experience", in *Asia-Pacific Development Journal*, Vol. 14, No. 1, June, pp. 73–104.
- Singh, Manjit. 2001. "Political economy of labour: A case study of surgical instruments manufacturing industry at Jalandhar, Punjab", in Kundu and Sharma, pp. 215–228.
- Singh, Surjit. 2001. "Informal tourism sector: Insights from two cities", in Kundu and Sharma, pp. 256–275.
- Sinha, Anushree; Adam, Christopher. 2006. "Trade reforms and informalization: Getting behind jobless growth in India", in Guha-Khasnobis and Kanbur, pp. 29–49.
- Todaro, Michael P. 1969. "A model of labor migration and urban unemployment in less developed countries", in *American Economic Review*, Vol. 59, No. 1, pp. 138–148.
- Tokman, Victor. E. 1978. "An exploration into the nature of informal-formal sector relationships", in *World Development*, Vol. 6, No. 9/10, pp. 1065–1075.
- Uchikawa, Shuji (ed.). 2003. *Labour market and institution in India: 1990s and beyond*. New Delhi, Manohar.
- Unni, Jeemol. 2003. "Economic reforms and labour markets in India: Organized and unorganized sectors", in Uchikawa, pp. 65–93.
- Xaba, Jantjie; Horn, Pat; Motala, Shirin 2002. *The informal sector in sub-Saharan Africa*. Employment Sector Working Paper on the Informal Economy No. 2002/10. Employment Sector. Geneva, ILO.