Contingent workers: Women in two industries in Mumbai

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'Think of all the changes that have taken place in recent times in the corporate world and one word springs to mind: restructuring. Yet it fails to convey fully the veritable revolution that Indian companies are caught up in. Four years after the Narasimha Rao government opened up the economy, Corporate India's cauldron is boiling over. The way Indian companies function has altered beyond recognition.'

(“Business World 6-19 September 1995”)

**INTRODUCTION**

In this chapter, we move from policies at the national level and responses at the household level to the impact on and reactions of two specific industries - the plastic processing and diamond polishing and jewellery industries. In this chapter, we will see the ground level practices of some firms within these industries. By focusing on the interplay between the broader context of industrial policies, the impact on and responses of the industries, we hope to build a basis for a comprehensive picture of the situation of the firms, their practices and the individual and collective responses of the workers. The two industries are a study in contrasts. Liberalisation has brought expansion and growth in large firms in both the industries whereas medium and small firms are struggling to survive, find a niche and avoid closure. The plastic processing industry, from raw material to product manufacture, has been severely affected in market protection; subsidies and restrictions on imports have been removed. On the other hand, the diamond polishing and jewellery industry, favoured for its export performance, has further benefited from the lifting of rules and tariffs.
THE PLASTIC PROCESSING INDUSTRY

The plastic processing or product industry is a small section, often subsumed under plastic, rubber and allied products. It is a growing industry but located at the lower end of the Indian industrial spectrum in terms of net value added, output and profits.\(^1\) One of its features is the employment of semi and unskilled workers especially in the informal sector and successfully coping with the advanced technology, sophisticated designs of the West and low consumption levels at home. The world consumption of plastics, at an average, is 14 kilograms per person with a figure as high as 80 to 100 kg in the USA, Germany and UK. However, in India plastic consumption is about one kilo per person (Economic Times 2-11-1994 and 11-7-1996).

The plastics industry is vast in its product range and different types of polymers but basically consists of three segments: polymer (raw material) manufacture, recycled plastic manufacture and products manufacture. We have described all three segments, though our research focuses on the firms and workers in the products or processing industry. The three segments are intricately linked with each other (refer diagram 5.1) and policy changes have affected each of them, individually and as an industry.

**Polymer (raw material) Manufacture**

The growth of the industry is decided by the manufacture of raw material. Its role lies in developing newer materials - alloys, blends and composites to ensure product performance according to application. The raw material manufacturers create new application concepts for sale to commodity manufacturers. This sector of the plastics industry does not form part of the research study as it does not employ women at the shop floor level and its firms are not located in Mumbai. But understanding its position and role is crucial for the explanation of the changes, which have swept the industry after liberalisation.

The polymer industry constitutes a major part of the petrochemical industry, recently established in India. Prior to the 1960s when the plastics products industry (PPI) was yet to gather momentum, raw material was imported via scarce licenses and after paying high tariffs. The mid 1960s saw a change in this import dependence by allowing the manufacture of plastics raw materials by multinational companies and later, public sector firms in India. Union Carbide was the first to
establish a production facility, followed by National Organic Chemical Industries Limited (NOCIL) and Polyolefin India Limited (PIL). The government itself floated a mega corporation Indian Petrochemical Corporation Limited (IPCL) in 1978 and soon Indian companies like Reliance Petrochemicals Limited came up. There are

Diagram: 5.1 Plastics Industry's Chain

1. Plastics Raw Material Manufacturer
2. Product Manufacturer
3. Traders
4. Sale of Product and its Use by the Consumer
5. Discarding of Plastic Products
6. Rag Pickers
7. Collection Centres for Plastic Waste Tiny, Small, Medium and Large
8. Processor for Plastics Recycling Raw Material
9. Recycled Plastics Product Manufacturer
10. Traders
11. Sale of Recycled Products and its Use by the Consumer
12. Discarding of Plastic Products
about 20 firms in this sector (*Economic Times*, 18-4-1995), which have become an unofficial cartel controlling production and fixing prices.

All such firms are large and highly capital intensive. The leading world players are Dupont, Bayer, and General Electric (GE) whilst the Indian ones are IPCL, Reliance, NOCIL and Chemplast. A change in the raw material scene came about in 1992 with the commissioning of the Nagothane complex of IPCL, and the expansion of Reliance. All three manufacture one million tonnes per year of different thermoplastics and with more scheduled plants an additional 20 lakhs tonnes are expected. This group has been increasing as large companies with a backward integration plan have diversified into raw material manufacturing. Indian polymer manufacturers have been in a strong position as they are few and manufacture for a supplier driven market. This segment also includes a large number of traders who stock and sell. They prepare raw materials according to customer requirements by adding different compounds, colours and additives like lubricants, stabilisers, antistatic or conducive additives, fillers, flame-retardants, plasticizers, and coupling agents. Colour master batches and additive master batches improve the processing and performance characteristic for specific products.

There has always been tension between raw material manufacturers and plastics product manufacturers. ‘Fortunes of the downstream converters are inversely related to those of the raw material suppliers’ (*Economic Times* 28-7-1996). This becomes highly accentuated when raw materials account for as much as 70 per cent of the total cost of the product. Product manufacturers’ associations accuse the others of hoarding raw material in order to raise the price of the raw materials. They have also been accused of price rigging. In just one year (1994-95) the prices for certain polymers like HDPE increased by 55 per cent and PP by 49 per cent. All the rest of polymers showed an increase in their prices from 16 to 40 per cent. The president of All India Manufacturers and Plastics Association (AIMPA) feels that ‘... the big players have formed an understanding within themselves to avoid competition and make a huge amount of profits’ (*Economic Times* 22-6-95). With the Gulf War, the price of plastic polymers both internationally and nationally had doubled.

Secondly, each polymer is manufactured in a cyclic way, which creates some imbalance in the availability of the specific polymer. Most of these raw material manufacturers supply directly to big
manufacturing companies on a quota basis and the small ones have had to fend for themselves by buying from the open market, which is expensive and without a credit period. Thirdly, the export of raw materials by big Indian companies usually causes panic amongst small manufacturers. Reliance and IPCL export at extremely high rates and create a condition where there could be a shortage of plastics for manufacturers in India. They have been in an ideal situation because as exporters they have access to government benefits and huge profits and as manufacturers in a protected market (import of raw material is disallowed) they can dictate domestic prices.

**Recycled Material Manufacture**

Re-cycling plastics material is commonly associated with concern for the environment and natural resources. In India it exists as a small industry engaging people in collection, processing and sale. Earlier, cottage industry type operations converting cellulose acetate films and acrylic scrap into usable plastics were used for the production of cheap bangles. The concept of recycling plastics came to India in the late 1960s and is now estimated to be worth Rs. 4000 crore. Around 1000 tonnes of plastic waste are put through re-processing every day in plastic waste collection centres. The President of the Dharavi Businessmen's Association considered this an inadequate estimate. His estimate (personal communication) was that the city of Mumbai alone must have been collecting over a 1000 tonnes from about 100,000 waste or rag pickers.

About 90 per cent of plastics in India are recycled (*Economic Times*, 6-11-95). PVC *chappals* account for 75 per cent of plastic waste, followed by plastic bags and other items. The re-cycling process begins with the rag pickers. They collect plastic bags, bottles, films, medical waste like disposable syringes, gloves, etc. Over 80 per cent of recyclable plastics rag pickers collect waste from garbage dumps and street collection (*Economic Times* 18-4-1995). They also use ingenious ways of collecting this waste like door to door bartering of garlic pods for used *chappals*. The one million rag pickers of the country are not even considered workers (*Financial Express*, 19-11-94). Rag pickers earn a pittance for their efforts. They are regularly cheated at the collection centres where their waste is weighed. The collection centres sort out this waste according to the type of polymer and sell it in bulk for
reprocessing. The processors use crude machines to grind the waste plastic, heat it, mix it with some ‘virgin’ plastic and make granules or bricks for sale to manufacturers and traders.

Eighty per cent of the PVC chappals market and 50 per cent of the plastic bag manufacturers depend on re-cycled plastics. Most small manufacturers making cheap domestic goods like boxes and household items use this material. The larger factories use virgin material, which is the main reason for the vast price gap between them. Part of the recycled material goods find their way back to collection and processing centres and can be re-used at least four times. This entire process takes place in the tiny unorganised sector. There is no government policy to guide either the re-cycling process or hygiene standards or the wages of the workers.

The big markets for plastics scrap are Mumbai, Dhulia, Aurangabad, Malegoan, Chennai, Bangalore, Kanpur, and Lucknow. Delhi has emerged as a new market for manufacturing goods from scrap and Bhavnagar has monopolised the woven sacks production. The President of the DBA put forward an estimate of 7000 firms doing only scrap collection and about 50 and more qualities within a particular polymer (Personal Communication, Hakkikulla Seth, Dharavi Business Men’s Association).

The Cartel is Threatened

The liberalisation of trade and the lifting of restrictions on imports brought about a noticeable change in the functioning of the industry. Much to the delight of the manufacturers, the cartel of raw material suppliers i.e. the government companies and their hand picked foreign and Indian counterparts were faced with an entirely different scenario. Manufacturers could import their requirements without being dependent on a few suppliers. The duty structure had also been reduced. Import duty as high as 65 per cent in 1994-95 was brought down to 30 per cent in the budget of 1996-97. Excise duty was reduced from 35 per cent to 25 per cent by 1995-96.

The raw material market was flooded with imports of PVC resins from Argentina, Mexico, Brazil, Korea and the US in February 1992. PVC imports from these countries surged from a monthly average of 10,829 tonnes to 21,794 tonnes in March 1992. Their market share in India went up from 25 per cent in 1988-89 to 42 per cent during the period of April 1991 to May 1992. Domestic producers like
Reliance and Chemplast lost no time complaining to the government. By May/June 1992, anti dumping proceedings were initiated. By July 1993 an anti dumping duty was imposed on PVC imports. The processors who benefited from the cheaper availability of raw materials felt that this was an attempt at backdoor market protection because of heavy lobbying by Reliance and the PVC manufacturing association which had hired the services of a UK based consultant for a hefty fee of Rs. 5,500,000 (Economic Times 15-8-1993).

India signed the GATT anti dumping code in 1979, the amended Customs Tariffs Act in 1982, and the Customs Tariff Rules in 1985, incorporating the provisions of anti dumping duty. This empowers governments to slap anti dumping duty equal to the margin of dumping. While this was the first case in India, slapping an anti dumping duty seems quite common even though it is in direct contrast to the notion of free trade in many countries. Mexico has a company specific dumping duty while the UK has clamped 20 pounds per tonne duty on US imports.

The cartel was now faced with other foreign suppliers who could extend all kinds of facilities to keep their clients happy. For example SABIC of Saudi Arabia supplied polymers to a leading pipe manufacturing unit in interior Maharashtra without a letter of credit or a bank guarantee. It also extended 90 days credit for material, which reached India within a week of dispatch. The processor could pay them after making and selling products. Indian producers like NOCIL, Reliance, IPCL, etc. had not offered such terms.

Each of the large companies, in their own way, started manoeuvring to keep their hold on the market by expansion and technological upgrading. However, it was extremely difficult as earlier MNC partners now had their own agenda in a newly liberalised economy. Tyabji (1999) gives a case study of NOCIL and other Indian firms to show that the 1991 reforms had placed them in a weaker position as MNCs could now enter without either collaboration or joint ventures. Mafatlals, one of the five largest business houses in India, had control over NOCIL and PIL. Shell and Hoechst were 31 to 33 per cent equity holders and both changed their tactics to bid for more equity in order to transfer technology. Negotiations fell through and both pulled out by selling their share to Mafatlals.

The recycling firms as part of the raw material industry were negatively affected by liberalisation. When raw materials were selling
at a high price during the Gulf War, the prices of recycled material also rose. And when the dumping of virgin polymers as well as import of pet bottles took place it affected the recycling industry negatively. The price of the PVC derived from the recycled process touched rock bottom, as the processors preferred using fresh, cheap stock. The application of a 30 per cent excise duty on recycled plastic waste and virgin polymer, has been another area of contestation in the recycling industry. In Dharavi, recycled material producers as well as scrap dealers went on a morcha and shut down their shops for eight days. In order not to pay excise, some of the firms decided to relocate to other areas and states. For them it was a matter of survival. A one-rupee difference could affect the entire chain of suppliers, with the final adjustment forced on the rag picker, the last in the chain.

**Plastics Products Manufacture**

As part of its economic policy, the government had created a small-scale sector by offering concessions and a protected market. This sector has spread over the country with the majority being concentrated in Maharashtra, Gujarat, and the cities of Hyderabad, Kolkata and Delhi. There are some 300-400 large firms, which form ten per cent of the firms in the industry. The rest are small-scale firm, tiny firms and home based workers. Many products were on the reserved list or those, which could not be imported and had to be made by Indian firms. They had been given some excise concessions granting exemption up to the first Rs 3,000,000 turnover and then up to Rs. 7,500,000. Excise concessions were withdrawn if a unit crossed a turnover of Rs. 2 crore. Most firms set up parallel units to help save on excise duty. Most small firms had not taken advantage of these concessions because of tedious bureaucratic procedures and lack of credit. Entrepreneurs felt that 'Registration is an invitation to persecution at the hands of petty bureaucrats.' *(Times of India 22-2-1995)* Firms had to abide by rules in 61 Acts and about 17 departments or administrative authorities had to be approached for clearance and registration. As a result of this red tape and corruption, many firms remained unregistered for over 10 years.

A range of small to big firms exists because of specific machinery and manufacturing orders from other firms and the market. Firms decide on one of many processes, like injecting moulding, blow
moulding, stretch blow moulding, compression moulding, etc. Some work as ancillary firms supplying to only one company. But the majority of the firms are small with a few machines producing a variety of items for numerous companies. There are about 2000 products that are being made out of plastics in India (The Maharashtra Plastic Industry Minimum Wage Commission Report, 1991). These large, medium and small companies work as a network but at competitive rates. There are different trends at work here: some large and medium companies give work to small ones to cut their costs and for quality control. Many produce the entire product in small firms, which finally bear a brand name. Others buy from suppliers abroad if the products are cheaper and of a better quality.

It is easy to open a plastic unit without much initial investment. Some of the entrepreneurs we met had opened small firms with one or two second-hand machines and recycled plastic raw material in a corner of their own homes with an initial investment ranging from Rs 1000-5000 (1998 prices). Most of the plastic items were produced in the informal sector with only few products like moulded furniture, crates and containers produced in the formal sector. This was due to the capital-intensive nature of the products in terms of machinery and the cost of moulds. In many cases like furniture products, where designing was crucial, most of the manufacturers imported moulds. The furniture sector had a turnover of Rs 200 crores, which was growing at the rate of 25 per cent per annum.

Many of the foreign collaborations in this sector were in the field of machinery rather than in product manufacturing. Access to foreign machinery had helped big companies to establish branded products. VIP had made a name for itself in moulded luggage. Supreme Industries and Neelkamal were associated with crates and furniture. Eagle and Milton were famous for thermoware and household items. India's share of the world trade in plastics exports was negligible at 0.002 per cent. In 1995-96, India exported plastic products worth $484 million showing a growth of 31 per cent. Plastic moulded and extruded goods showed a high growth rate of 120 per cent from the previous year. Many other items like ball pens, plastic bangles, imitation jewellery, plastic moulded luggage and other goods, PVC pipes, plastic woven sacks, PVC leather cloth, sheeting and plastic raw material also showed growth. Asia and especially West Asia showed a share of 36 per
cent of all Indian exports and the former USSR and East Europe followed with 28 per cent exports (Economic Times, 25-7-1996).

The De-reservation Destruction

Before 1991, during the era of the government’s protectionist policies, there were 1200 products on the reserved list. These could not be imported and had to be manufactured in India. In 1995 after the new economic policies were introduced, the list was cut down to 836 and by 2000, there were only a few products left. Most small manufacturers could not manage the shift from a protectionist market to an open one. ‘I used to manufacture plastic trays and spoons for Indian Airlines. Now they find it cheaper to buy in bulk from Singapore or Taiwan. It is a huge loss for me,’ said a small time manufacturer. Many had stopped production and converted their premises into warehouses or offices for trade in raw materials.

The manufacture of plastic toys was the most adversely affected by the liberalisation policy. Toys were manufactured 500 small-scale sector firms situated mainly in the informal sector. These firms had a share of 75 per cent of the toy market. The smaller, upper end of the market had a few big players like Blow Plast and MRF. The government’s July 1994 notification gave special import licenses to firms for the import of toys. ‘What they (the government) have done is that they have allowed import of certain categories of toys under special import licenses and have reduced duty to 50 per cent from about 120 per cent earlier. But no duty reduction has been made on raw materials or dyes and moulds’ (Hindustan Business Line, 30-5-1995). The policy left the manufacturers seeing a flood of toys from Taiwan and China, which they were unable to compete with their higher priced raw material and moulds. A manufacturer explained that a toy required three to ten moulds depending upon its complexity. As there was a constant demand for new models, these moulds had to change often but the expense and bureaucracy made it prohibitively expensive. Sanjeev Aga from Blow Plast Ltd. explained ‘... to import toy moulds one has to pay full customs duty and bank guarantee for 25 per cent of assessable value. There is a considerable delay of two to three months for examination and assessment, prior to customs clearance and a two year limitation on re-export’ (Economic Times 22-2-95).
**Changes in Firms**

**Large Firms**

Most of the large firms had attempted re-structuring in a bid to remain competitive in the market. A good example was Supreme Industries, a large public limited company, which had several branches all over India manufacturing crates, furniture and industrial goods. After seventeen years and a name for itself, it had moved with the changing times. ‘We took the decision to move out of Mumbai several years ago, so we could take advantage of the concessions given to industries in backward areas and cut our high infra-structure costs in the city,’ the senior production manager informed the researchers. Real estate prices have been steadily moving upwards in Mumbai making it impossible for firms to purchase new premises or expand their existing ones. Electricity rates had increased three times between 1996 and 2000. Labour costs have increased along with the rate of inflation. Supreme like many large firms, which could afford the cost of relocation had taken advantage of the government’s policy of moving industries out of urban areas by giving tax, sales duty and infrastructure concessions in zones, industrial estates and backward areas.

In 1996, Supreme had 20 branches around the country and had converted part of its Mumbai unit to a Research and Development unit for designing, temperature control, etc. and administrative offices. It had set up new plants outside the city, 12 automated machines replaced the older 40 machines and reduced its total workforce from 450 to 149 workers. It had diversified into the manufacture of polymers, which would primarily supply raw material to its own firms. The company had applied for an ISO 9000 certificate to make itself export worthy. By keeping the entire production from raw materials to the end product under its own roof, Supreme hoped to stay competitive against imported products from Italy and East Asia.

This seemed to be the general trend amongst large firms. When we (the researchers) asked workers a series of questions on the organisational structure of their firms especially new changes, they confirmed that their firms had either shut down specific departments or production processes, accepted new technology and management techniques, relocated plants or simply reduced workforce by resorting to full or partial closures and voluntary retirement schemes. Most of
the measures were interconnected e.g. new closed loop machines were completely automated with unmanned centralised computer controls. Some new machines were modular or could be built in functional blocks, allowing the designer and the manufacturer the flexibility of choosing the desired blocks on the basis of application (Economic Times, 25-7-1996). New machines and design had done away with older worker specifications and needed multi skilled working doing a range of work, both skilled and unskilled work like loading, operating machines, cleaning, packing and reloading, etc. The categories of assembler and packer had thus been eliminated in the new process. ‘There has been no recruitment of workers for the past ten years. But there has been no lay off either,’ said a trade unionist, ‘every few years a Voluntary Retirement Scheme is announced.’ Whilst touring the city plant, the researchers found that there were no women workers, very few men workers but a large number of middle-class technicians engaged in research and design.

Supreme had used the strategy of backward integration or centralising production in order to cut raw material costs, for quality and/or cost and time of transportation. Entrepreneurs informed us that multinational companies, which earlier sub contracted out parts of their products were returning to manufacturing because of frequent design changes, new importance of quality control and avoidance of delays in delivery.

Medium Firms
When Genius Bags was established in the early 1960s under the policies of a protected market and a list of reserved items, it tried to register itself as a small-scale sector unit in order to get subsidised credit and other concessions but had given up as a result of lengthy bureaucratic procedures. From four rooms in an industrial estate, Genius Bags continues to produce soft luggage of all shapes and sizes for retailers, small-time traders and large firms like Samsonite and VIP. It is part of the organised luggage industry which is estimated to be around Rs 1000 crores. One of its segments, the moulded luggage industry, grew from a turnover of Rs 240 crores in 1990 to Rs 450 crores by 1994-95. In the same period, the unorganised sector grew from Rs 50 crores to Rs 600 crores (Economic Times 6-9-1995).

Like Genius Bags, medium sized firms in the plastics processing industry are part of a network of sub contractors. Many engage in
'industrial' or 'commercial' sub contracting. In industrial sub contracting, large firms contract out part of their products like peripheral items to subcontractors. Genius Bags produced dividers for VIP suitcases.

Commercial sub contracting meant producing for firms, which did not have its own production unit but had an export license or marketing operations. Genius Bags, as a side venture, manufactured plastic folders and files for a firm who wished to avail of export benefits and mainly the lower duty for the import of raw material required for their own operations.

Some large firms prefer subcontracting as they save on their capital investment in equipment and machinery for small parts of a product. Sub contractors with small and medium firms have lower overheads, offer competitive rates and are conscious of quality control as their goods might get rejected. Sub contractors give their surplus orders to other sub contractors. The system of sub contracting subsists on clusters or the convergence of contracting firms in industrial estates and the informal network amongst them. At times there are strong cliques of sub contractors, partial to one another in terms of orders, credit and executing surplus orders. A sub contractor spoke bitterly of Gujarati entrepreneurs who only gave work to their community members or bailed them out in times of crisis.

The owners of Genius Bags were not very happy with the new economic policies. 'The new policies have killed off most medium-sized firms. The large ones have left for Silvasa or the industrial zones on the outskirts of the city. Small ones can survive because they have hardly any overhead costs and produce for the cheap domestic markets. The large ones have the money and the small firms don't need that much money to move. We are the only medium-sized unit left in this estate. It is difficult for us to move, one because we do not have the financial means, and two because we have our families here. We are surviving because our overheads are small and we produce unbranded products. Independent sub contractors like us do not stand much of a chance. Our only hope of survival is in specialisation. If we can produce cheap soft bags, those who cannot afford brand names will pick up our products. We will be lucky if we find some regular buyer or exporter. Then we can produce for the export market and export via a buyer, as we do not have the means to get credit or an export license.'
Independent sub contractors take orders from different firms and maintain a varied product line using either the injection moulding or blow moulding process. They are usually given the dye for the product by the parent firm. In some cases, the latter trusts the sub contractor to make the original dye and the product with the proviso not to use it for other firms. A substantial profit is possible only if the sub contractor gets the total job and not parts of a product. However, investments in such jobs are high and usually sub contractors prefer ‘labour only’ jobs. Specialisation has helped many sub contractors survive the onslaught of imported spare parts and goods. A portable fan sub contractor had studied the various types of imported fans and developed the ability to make customised fans for specific air conditioners, which could not use the imported ones. At the same time they had to run a tight operation with a small but trained workforce. Most of their workers were on daily wages and were made to do overtime in case of surplus orders. Any sort of union activity was curbed by a variety of means. Workers were not allowed to assemble in canteens or at the workplace. There were instances when medium-sized firms opted to further sub contract a part of work to their trusted supervisors. They in turn functioned as an ancillary unit for executing orders.

Small Firms

Doraiswamy has owned a small plastics recycling unit in Dharavi for the past 30 years. He purchased plastic items from rag pickers and sorted them out with the help of four women and one man. They were able to sort 200 kilos in a day according to the polymer component. Without any cleaning, the sorted material was turned into pulp and sent for grinding into granules. Such small and tiny firms produce directly for the local market or manufacture cheap items for traders and medium sized firms. Many of them are ‘captive’ subcontractors or those, which are given regular work by only one firm. For example, an entrepreneur with a problem of labour unrest, helped one of his employees to invest in setting up a small-scale unit, to give him orders. A pen manufacturer shut down his refilling section and gave the job to his car driver's daughter. She worked in the same premises with her own bunch of workers and supplied the refills to him. These sub contractors are called ‘captive’ because they are totally dependent on the sub contractor. There are many instances of them going into crisis when the giver of the sub contract withdraws his orders. A five per
cent fall in the growth of large firms is said to result in a 100 per cent fall in the demand for ancillary items (Bose, 1996).

Such small firms found it expensive to operate in Mumbai because of the cost of labour, electricity and real estate. Doraiswamy had retained a godown for storage but preferred to take the entire bulk to Malegoan for sorting, pulp making, grinding and pipe making. Malegoan has emerged as an important centre for plastic recycled agricultural related goods. ‘Workers get half of the pay in Mumbai. The rate of electricity is Rs. 1.40 per unit there while here it is Rs. 4.45. Also the system of credit, which is prevalent in Mumbai, makes life for the small entrepreneur more difficult. In Malegoan, all transactions are done immediately in cash. Even the transport from Mumbai to Malegoan is cheap. Many trucks come from Nashik and Malegoan with fruits and travel back empty. So we are able to hire them at half the cost.’

THE DIAMOND PROCESSING AND JEWELLERY INDUSTRY

The diamond processing and jewellery industry is part of the larger gems and jewellery industry which covers a wide range of trading and manufacturing activities of semi precious stones, gold and gold jewellery, cutting and polishing of rough diamonds and diamond studded jewellery. This study has focused on the last two areas.

A CONTROLLED MARKET

India has a long history of diamond mining, polishing and jewellery manufacture which was mainly restricted to royalty and aristocracy. The shift from a cottage industry type of production to factory type of production began in the 1940s, when a group of diamond merchants approached the government for permission to import rough diamonds for cutting and polishing and export. Within a decade, as exports rose and foreign exchange started rolling in, the government relented by relaxing some of its regulations. By the 1960s, a few traders from Gujarat had made inroads into the market for polished diamonds. (Chhotalal, 1990). Their modus operandi was to import roughs, sub contract the cutting and polishing of roughs to numerous small and big workshops in Surat, Navsari and Palanpur and sell them in India or the world market. Numerous workshops or galas sprung up as a small investment and some training of workers was enough to be in business.
Import of rough diamonds is a crucial part of this industry as India has very little indigenous production of diamonds. It procures one per cent of its roughs from the Panna mines and imports 85 per cent from the Diamond Trading Corporation (DTC) or the marketing arm of the 108-year old De Beers group of companies. Based in South Africa and London, De Beers has a vicious grip on the world’s production and distribution of rough diamonds. Eighty per cent of the world’s production is in the hands of De Beers’ Central Selling Organisation. It prospects and buys mining rights/roughs from diamond producing countries like Zaire, Botswana, South Africa, Russia and Australia. Hardly any producer has been able to resist the De Beers international political and economic clout and market manipulations. Botswana, Zaire and Russia made an attempt to break away in the 1980s but were beaten back into rejoining the cartel (Sunday 14-1-1996). It was only in 1996 that the sixty year old the Australian conglomerate, Argyle successfully broke off from De Beers’s cartel.

The De Beers’ DTC has its own unique method of sorting and classifying diamonds into the 5000 categories. It then sells them through an authoritarian system of distribution to ‘sight holders’ or selected buyers. They have to compulsorily buy ‘lots’ of diamonds, which they have neither seen nor bid for and regardless of its quantity and quality. The number of sight holders can change as the DTC favours or disfavours them. At present there are 160 sight holders all over the world, of which 41 are Indians. The entire structure of the global diamond market is so dominated by De Beers that there is little or no element of free trade or market mechanisms. Its marketing strategy is periodically put out in the form of a press release in which it gives its sales figures, rationale and price structure. Needless to say, there is little love lost between De Beers and its partners.

Non-sight holders buy in the open market, which is quite small because the Central Selling Organisations (CSO) of De Beers controls 4/5th of the world’s production of diamonds. They can also buy from producer countries, which are allowed to keep 10-20 per cent of their own production for direct sale. Argyle, the Australian conglomerate, has emerged as De Beers’ main competitor. ‘We will not have sight holders but will have a regular customer sales system. This will involve about 30 large customers and some smaller ones.’ (Economic Times, 22-6-96) Bringing in policies in contrast to that of De Beers’, Argyle
hopes to prove that it might be more beneficial, in terms of price and services like assortments according to requirements, to deal with them directly. ‘India and Argyle are natural partners. We have the labour intensive rough, India’s advantage is a large labour force’ (Business India 1-7-96). It had already laid the foundations for developing India as a market in 1994 with the establishment of the Indo-Argyle Jewellery Council. It has helped Indian jewellery manufacturers to tap the US market and promoted small diamond-studded jewellery through its promotional and advertisement campaigns. But the trump cards in this game of international marketing are still clearly in the hands of De Beers, which said, ‘We are holding stocks of nearly $ 5 billion which is 12 years of Argyle’s production’ (ibid).

Diagram 5.2 Inputs into the Indian Market for Rough Diamonds

![Diagram](image)

The Products: From Roughs to Exports

Processing Diamonds

Several unconnected factors went into turning the Indian market into a specialised one for small-sized, below $ 400 per carat polished diamonds. The imports of roughs to India took a quantum leap with the opening of the Australian mines, which produced 30 million carats of which some 20 million carats were cuttable only in India. Israeli processors, who have a stronghold in the fancies market, were used to large sizes and could not polish the smaller size ones profitably. Around the same time, world prices and recession lent India a helping hand. During 1993-94, the price of imported roughs rose to $ 36 per carat from the previous year’s price of $30. At the same time the export price fell because of recession in most Western countries. Many buyers in
USA and Japan turned towards smaller and more affordable sizes. This gave an opening to Indian exporters to carve out a new area for them. In the same year, the value added (the difference between exports and imports) went up by a massive 37 per cent (Business World, 20-4-94)

India's forte has been in 'makeables' or a category of roughs that has knots in them. By itself, it would have not made the gem category and gone for industrial use. Highly intensive labour processes and the selected use of laser technology have made it possible to convert makeables into 'fancies' or more sophisticated cuts. Fancies are leaf-shaped diamonds called marquises and long chip-like ones called baguettes. India could venture into the makeables market because of its skilled labour force.

Workers drawn from small towns or the countryside were trained for three to six months in polishing the top, bottom or middle parts of a diamond. Mechanised scaiifes were introduced instead of the traditional 'ganti' or non-mechanised lathes. Young workers with keen eyesight and concentration, working on a piece-rate basis, were able to polish 40 to 100 diamonds a day depending on the hardness and cut. The gala owners were sub contractors who worked according to orders with little overheads and a flexible workforce. It was no wonder that India could successfully compete with the better-paid, skilled Israeli workers in the small diamond polishing market.

Israel adds only 10 per cent in value and the Indian worker adds as much as 40 per cent in the case of Australian diamonds and about 25 per cent for others. India has 70 per cent of the volume and 50 per cent of the value in the world diamond market. Whereas, Israel accounts for 38 per cent of value with other countries making up the balance (ibid).

In spite of developing a niche market, the diamond polishing industry has seen many ups and downs. In the 1980s there was a great boom and from a meagre Rs. 10 crore worth of exports in 1979, the industry touched the Rs. 5,000 crore mark or a 500-fold increase in only a decade. In the early 1990s there was a slump as the DTC, the major supplier of roughs, had raised the price by 24 per cent. Another reason for the slump was general recession in the world demand for diamond products. The USA and Japan, two big buyers were slowing down purchases. The USA, which usually purchased 45 per cent of the Indian output, could only absorb 38 per cent in 1988. The generous credit facilities encouraged by the government allowed for over production
and intense speculation. Many small workshops folded and one-lakh workers were out of a job (Export World, 1991). Since then, diamond exports have grown steadily again as indicated in table 5.1.

Table: 5.1 Net Exports of Cut and Polished Diamonds for 1991-2000

<table>
<thead>
<tr>
<th>Period</th>
<th>Value in US $ in million</th>
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<tr>
<td>1991-92</td>
<td>2499.86</td>
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<td>4661.90</td>
</tr>
<tr>
<td>1996-97</td>
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</tr>
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<td>1997-98</td>
<td>4492.66</td>
</tr>
<tr>
<td>1998-99</td>
<td>5026.11</td>
</tr>
<tr>
<td>1999-00</td>
<td>6647.82</td>
</tr>
</tbody>
</table>


The export of cut and polished diamonds has remained at 81-87 per cent of the total exports. This is because the total value addition on polishing was around 20-25 per cent and was extremely dependent on raw material costs, estimated at 70-80 per cent of the realisation on polishing. Most employers interviewed maintained that their profit margin of about 12 per cent at the operative level was not sufficiently large to bear a crisis. Indian exporters have to do large volumes to do well, especially in the face of constantly rising cost of roughs. They have no bargaining position in the international market (Business Line, 11-8-1996).

Manufacturing Jewellery

It took several years for Indian diamond merchants to turn to jewellery manufacturing as most were comfortable with trading. The new entrants in jewellery manufacturing are still struggling to establish themselves internationally. They made a good start by side stepping large retail shops like Tribhuvandas and Popleys who had a firm hold over the Rs. 500 crore domestic gold jewellery market and attempting diamond studded jewellery with in house technologically advanced production for foreign buyers. In one sense they extended their existing contacts and/or work in diamond polishing to making jewellery using the same small diamonds. Like the processing sector, they too took advantage of India’s surplus labour. The sector manufactures the kind of jewellery
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where the ratio of diamond studded area to total area is high. The president of the export zone Gems and Jewellery Manufacturers Association pointed out that if material and production cost were taken as the same, a piece of jewellery would vary in cost from country to country. ‘... in Thailand it will cost $ 80, in Hong Kong it will be costlier by $ 150 and in USA the labour cost is $ 800. Nobody has ventured to make such intricate jewellery at such cheap prices.’ (Economic Times 17-3-94) With a beginning made, there is a still a long road ahead. The global demand for plain and diamond studded jewellery is around $40 billion in the retail jewellery segment, and about $18 billion in the wholesale one. India’s share is not even one and half percent (Economic Times 1-4-2001).

Most jewellery manufacturers began in the Santacruz Electronics Export Processing Zone (SEEPZ) in Mumbai. The SEEPZ was established in 1974 during the boom in the manufacture of electronics and computer related components on a hundred acre plot. Around the 1980s, some diamond merchants approached the government for space and facilities. These came with some extremely good concessions but also severe restrictions.

- Land could be leased for as little as Rs. 10 per annum per square metre for 30 years and built spaces for Rs. 450 per annum per square metre for 5 years. Both schemes offered a supply of water and electricity at subsidised rates.
- Enterprises were entitled to a tax holiday on all export earnings for any five years of their choice.
- Exemption from customs duty on equipment and raw materials.
- Exemption on central excise duties and other levies like property taxes and octroi.
- Duty free import of capital goods and equipment.
- Trade union activity was not permitted within the zone.

The main restriction was that all production had to be exported, rejected goods had to be destroyed and the gold diluted. Manufacturers complained that as there were no proper diluting facilities, they lost a good amount of gold. The approach road to the area was poor and the municipality not always efficient. Sometimes customs formalities took such a long time that it resulted in heavy financial loss. Unlike the
neighbouring electronics industry, the diamond studded jewellery industry was not allowed to transfer material and production from one unit to another within the zone.

By 1988 there were five operating firms. In 1995 the number had risen to 48, with 12 more on the verge of opening production and 100 on the waiting list. The SEEPZ authorities asked for 6.4 hectares of land from the government to build more complexes as the more successful enterprises were expanding their existing facilities. For example, Goldiam added 4,180 square meters to its existing facilities. S B & T could not find place in the same complex so leased out space for new departments in the neighbouring one (*Jewellery International*, Feb-March 1995).

**The Continuation of Deregulation**

A jewellery manufacturer in the export zone told the researchers, 'I would say that, broadly speaking, the new economic policies have not affected us much. Our work depends solely on the supply of roughs. The government had given us import permission as early as the 1960s. There have been no licensing or expansion restrictions. Machinery meant for exports attracts lower duty. We have also had benefits in excise and customs duties. Over and above this, we have been given access to cheaper infrastructure in the zones. And for all of this, we are under obligation to export and not drop below specified levels of production. The 1991 economic reforms brought in changes, which have given us an edge in exports. Devaluation of the rupee meant more exports. The lifting of the Gold Control Order gave us access to imported gold of a higher purity and jewellery can be transferred from one unit to another within the zone. The Export Import policy of 1997 has permitted the sale of 25 per cent of the export unit's production in the local market. So the boundaries of the export zone and outside are being blurred.'

The Director of Su-Raj thought that the spirit of deregulation should not be allowed to peter off. 'Fortunately for the industry, the government has been sympathetic and has devised a correct set of policies. We hope that there will be no radical departure from it.' (*Economic Times*, 8-3-95) What the processors and manufacturers fear most is the other side of the new economic policies, viz. the withdrawal of governmental concessions and subsidies, in particular the 80 HC, which allowed export profits an exemption from taxes. 'What we would
like is a stable exchange rate because though the depreciation of the rupee encourages exports, we have to pay much more to import. The industry would also like lower interest rates because interest as a percentage of sales works out to be 3.3 and 6.5 per cent.

'The new economic policies are a little like the export zone, which gives us freedom from restrictions. I would say that the government should make the whole of India an export zone! Give manufacturers the leeway to do their job and see how well they will perform. Look at the record of the jewellery manufacturers in the export zone. It has been rising every year. The industry is doing well,' said the optimistic owner of Sun Jewels.

Changes in Firms

The Three Big Players

'From all the firms in the export zone, 13 of the older and successful ones matter. They have the clout and they set the trend' said a proprietor. One of these firms was Su-Raj Diamonds India Ltd, which started as a small trading company in the 1950s and was one of the first to move into the SEEPZ. At present, it is one of India's largest site holders and a major international manufacturer and trader in loose diamonds. One building houses the polishing section and a newer one has the jewellery unit. It has expanded to become multi-locational, with two firms in Mumbai and one in Jodhpur. An *Economic Times* study (14-10-93) placed Su-Raj Diamonds fifth in terms of total foreign exchange earnings out of 317 companies in the corporate sector.

Su-Raj was the first to go public in 1986 as '... there is a lot of potential in the diamond industry. If we want to get organised and grow fast it is very difficult in a partnership or proprietary concern' (Su-Raj's chairperson quoted in *Business Signpost*, 26-4-90). The company has done everything to dissipate the notion that diamond companies are mere trading houses, by maintaining a high standard of modern production facilities, regular delivery schedules and competitive prices. It has mega-expansion cum diversification plans to set up an engineering unit, a diamond and jewellery unit in Bangalore and a design centre in Mumbai.

The advertising slogan for Shrenuj and Company Limited is 'three generations of creativity' which captures its age, experience and success.
One of its divisions imports, processes and exports polished diamonds in SEEPZ, Navsari and Rajkot. It was one of the first to introduce the laser-cutting machine in India. Shrenuj is also a DTC site holder. Its jewellery unit is 100 per cent export oriented and was started in 1982 and went public in 1986. It caters to the American, Japanese and European markets. Unlike most of the SEEPZ firms, Shrenuj has ‘...eliminated the Bengali skilled mould makers and setters. They are difficult to work with, prone to unionising, and set in their old ways. We get our basic moulds from abroad and have the rest of the work done here. Because of our constant up gradation of machinery, our management style lays emphasis on good labour-management relations and in rotation; my colleagues and I meet every one of our 160 workers’ (Director, personal communication). Within the relatively small area of 650 square metres and with a 160 strong workforce, Shrenuj has the capacity to produce 65,000 pieces per year and has been able to penetrate non-traditional markets like Spain, Turkey and Mexico.

Sun jewels is perhaps the only SEEPZ firm which has a sister concern, Sunshine Industries, outside the export zone. It is also one of the few firms whose owner does not belong to the Palanpur Jain community from Gujarat, have the benefit of diamond business lineage or the advantages of a site holder. The firm received the British and German governments' DeCTA and IGEP programme training as well as the Indo Argyle Diamond Council's expertise in designing and exhibitions. It opted for newer production techniques and labour management. Both the SEEPZ and Mumbai firms were small, with 130 workers and 70 workers. There were more women than highly skilled men workers. The SEEPZ unit has the capacity to produce 100,000 pieces per year. ‘I have been through several bad patches but now our exports have reached $ 4 million (1994-95) and will hopefully go up by 50 per cent in the next year’ informed the owner in a personal interview.

Of the 13 influential diamond jewellery manufacturing firms, five of them namely B. Arunkumar, Shrenuj, Su-Raj Diamonds, Classic, and Suashish Diamonds and Barring Classic had done well for the past 3 years and were listed in the Mumbai Stock Exchange. Their combined sales income nearly doubled from Rs 470 crore in the financial year ending March 1992 to Rs 915 crore in the financial year 1994. This was in spite of hefty interest rates and a marginal rise in labour and manufacturing costs (Economic Times, 22-3-95).
Unlike the large plastics processing firms, diamond processors and manufacturers had not been adversely impacted rather they had gained from the liberalisation of government regulations especially in the financial markets. In spite of being in a protected enclave with a favoured status, they felt compelled to go in for policy, internal and marketing changes. 'The new economic policies have changed the complexion of the market and consumers. Look at the way foreign brands have come in and established themselves. We have to take that into consideration and along with our other problems like the fluctuating raw material supplies, and labour problems have to do a balancing act, keep introducing changes and keep our head above water.' [Personal interview with an employer]

Large firms had already made the switch from a traditional mode of production to a modern one. Traditionally, diamond studded jewellery was made by goldsmiths for individual clients according to their specifications. These 'babus' with some assistants and apprentices craft jewellery with age-old tools and methods but with great skill and finish. Jewellery making in the export zone resembles a factory with hundreds of workers, highly mechanised and automated processes for mass production. Proprietors were proud of producing an 'engineered and not an artisan's product'. Said the director of Su-Raj, 'A lot of people are surprised when we call ourselves an industry. However, if you care to visit our manufacturing complex, you will be stunned: the place is full of machines and we create value with a high degree of precision and skill ... even a one per cent error in judgement can mean a loss of millions of dollars' (Times of India, 26-6-94).

These large firms had vertically integrated the functions of purchase of raw materials, to processing the roughs to manufacture of jewellery under one roof to cut costs and be competitive. With no restrictions on the import of machinery, manufacturers regularly updated their machinery and experimented with different production techniques. For example, the British DECTA, the German IGEP and the Indo Argyle Diamond Council had introduced techniques like wax-based casting, meant for cheaper production and standardisation. Introduction of new machinery changed the employment policy of firms. 'Earlier, it did not matter if you had passed SSC or not, now they insist on it,' said a worker. Her supervisor explained, 'We need workers to have a standard of education. They have to be able to read the instructions on
machinery. Educated workers have a greater grasping ability. We do not want to spend money and time on training and then reject them.’

The global jewellery industry is synonymous with subcontracting with a huge network of contractors and subcontractors who may be traders, manufacturers or processors according to the market situation and their capacities. The process started with the De Beers’ company the Central Selling Organisation, which arbitrarily decides the quantity and quality of roughs to be released in the market. Processors and manufacturers had to balance between the raw materials supply, the vagaries of consumer market and economic recessions. Firms depended on each other for processing of roughs and the manufacture of surplus or urgent orders. In order to bypass the disadvantages of subcontracting namely the undercutting to procure orders, which usually resulted in delayed deliveries, poor finishing and switching of good quality diamonds for poor ones, large firms were considering the Japanese method of establishing ancillary units. Su-Raj had built its own structure of firms in Jodhpur in Rajasthan and Goregaon and Santacruz in Mumbai. Within their rough diamonds processing firms, large firms changed the rules of rules of the piece rated wage system by introducing permanency, bonus and benefits for the workers.

Large firms turned towards the world market by expanding their facilities, forging collaborations and venturing into different international markets. B. V. Jewels expanded their factory area tenfold and plan to increase their workforce and investment in different types of jewellery. They are exploring the Australia and New Zealand markets. Gemplus, which had a floor space of 650 square feet a couple of years ago, has spread to 50,000 square feet, tripled its production facilities and increased its workforce from 300 to 1200. Goldiam entered the capital market in 1994 with an equity issue to finance its expansion program. It has exclusive selling arrangements with firms in Japan and Australia besides selling in the wholesale market in the USA. Its new 3000 square feet complex increased its capacity from 75,000 pieces to 4 lakh pieces.

Large firms prefer collaborations with foreign wholesalers or exporters, which give them a 100 per cent buyback agreement. The S B and T International was set up in collaboration with S B and T Gems Imports Inc., a wholesaler and jewellery manufacturer based in Houston, USA. One of Gemplus’ major collaborators is Continental Jewellery, one of Hong Kong’s biggest jewellery exporters. Goldiam
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collaborates with BVBA of Belgium, which not only invests money but provides assistance for raw materials, manufacture and marketing. Firms are no longer waiting for foreign buyers to come to them. Some 3000 manufacturers have established offices in USA, Hong Kong, etc.

The strategy of shifting to the international market has been combined with a parallel one of establishing themselves in the domestic market with their own retail outlets and brand names. So far, retail outlets, with formidable reputations, like Popley and Tribhuvandas, have dominated the domestic market. The new jewellery manufacturers are using advertising campaigns to bring about an attitudinal shift from the ‘family jeweller’ to the ‘corporate jeweller’ with gold purity certificates. They have made use of studies done by the World Gold Council and Andersen Consulting to gauge consumer attitudes and market segments. Su-Raj and Titan have chosen to occupy the high category with Rose and Gili in the medium slot and Panacea and Estelle at the lower end.

The Medium and Small Firms

Processing of rough diamonds shared the same problems of irregular raw materials supply and fluctuating consumer demand with traditional handicrafts production. It is not surprising that processing or polishing firms, popularly known as galas adopted the subcontracting and piece rate systems. It takes one skilled worker and a capital of Rs 30,000 to Rs 50,000 to set up a firm and procure orders through contacts and trust. By the 1970s, there were thousands of processing firms in Surat and Mumbai, varying only in size, i.e. the number of workers and scaifes. Small ones have between four and eight scaifes, medium ones have nine and 15, and a few large ones have 16 to 30 scaifes. Some are registered, many are not registered, a few perform specialised tasks like laser cutting but most are engaged only in processing rough diamonds. Most are housed in industrial estates in the city’s suburbs of Dahisar, Goregaon, Malad, Borivili and Kandivili. They are poorly built, with minimum facilities, and cheap to rent out. They epitomise the stereotypical concrete jungle with not a spot of green. Young workers in gaudy clothes swarm the areas. Inside the poorly ventilated galas, there are rows of scaifes under garish tube lights with one side partitioned off as the boss’ cabin.

Industrial estates form clusters of galas, which work as an informal network helping each other with surplus orders. These firms compete
fiercely with each other and keep the price of polishing competitive. It is common to see many down their shutters overnight and mushroom in boom times. At present they process roughly half the amount of rough diamonds imported into India. Traders and large jewellery making firms find it economic to subcontract processing to these galas in spite of diamond switching, irregular deliveries and low quality work. They are the older models of a flexible firm with a flexible workforce, hired and discharged according to supplies and demand.

Through the years, these firms have not significantly changed. There are no trends of growth or modernisation. Some of the more established ones have large firms with better facilities and workers in uniforms getting better wages and benefits. However, growth in the polishing galas is deceptive because the small-scale sector hides expansion in the form of split firms. One owner may set up a second unit in another industrial estate under his own or an associate's name. Only a few firms have ventured into the new area of specialised laser cutting of rough diamonds. Laser cutting eliminates physical contact of saw and stone by the use of high-power laser light beams. The initial expense of Rs. 500,000 and the availability of cheap labour has slowed the acceptance of these machines. Another new trend is the establishment of ancillary firms attached to a large firm. There are very few formally designated ancillary firms. Most of them may be partial to a particular firm but operate as independent ones doing jobs for other firms as well.

CONCLUSIONS

By using the pre and post liberalisation policy approach to assess the situation of each industry, it is possible to say that the plastic processing industry went through a veritable upheaval. Large firms, especially the raw material manufacturing ones, were quick to protect their market and simultaneously restructure for expansion and competition. The large product manufacturers with access to finances joined the restructuring bandwagon. The small and tiny ones with few overheads and low infrastructure costs could quickly relocate but the medium ones doing independent sub contracting jobs were caught between the restructuring manoeuvrings of the large ones and the liberalisation policies of the state. With cheaper and better quality goods coming from East Asia, there was little hope for them.
The diamond polishing and jewellery industry was favourably affected by the new economic policies. As an export oriented industry, it has been the beneficiary of lower duties, import facilities and tax holidays as early as the 1960s. The industry was afraid that the government might withdraw these concessions. They have devised strategies to expand, improve production and seek new local and international markets. The medium and small firms in the industry are mainly polishing firms. Their claim to fame is that they polish half of the 70 per cent rough diamonds imported into India. Their fortunes are dictated by the release of material by De Beers, worldwide recession and changes in worldwide demand from the West and Japan. Unlike the large firms, they have not seen much change in their functioning or fortunes. They continue to mushroom and die according to raw material supplies and consumer demand. Only a few of them have turned to specialisation of tasks or modernisation of the production process. Nor is there a trend towards ancillarisation, which would give some stability to medium and small firms. The numbers of these firms are diminishing slowly as large firms centralise all stages of production and trading of roughs is at a low.

**Endnotes**


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<th>1.1 million tonnes</th>
<th>Imports</th>
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