

IMAGE AND REALITY OF SUBCONTRACTING AS A PRINCIPLE OF MANUFACTURING ORGANISATION IN INDUSTRIALIZING COUNTRIES

ANNAVAJHULA J.C. BOSE

"Subcontracting has become a major industry in its own right. No firm can afford to ignore the opportunities for placing work on subcontract, or for obtaining such work on favourable terms. The subcontract network is often widespread and complex. Its efficient management is vital to economic manufacture."—"Profiting from Sub-contracts", *North-West Industrial Review* (England), Vol. 11, No. 2, April 1970.

The Issue :

Several inquiries into the forms of capitalist production in industrialized countries have brought out the point that their dynamic has indeed been an uneven and combined process; there is no inevitable tendency towards vertically integrated or composite and large plants. Vertical disintegration through subcontracting¹ had been a mainstay of industrial production in distant past. It has been so, interestingly, in several industries—traditional and modern—even in the contemporary period.

Likewise, in industrializing countries, the boom in empirical research on urban small-scale activities, especially in the wake of ILO's official endorsement of the concept of 'informal sector', has revealed, inter alia, subcontracting relations in traditional and modern industries. Artisans, outworkers/homeworkers, and wage labourers have been found to be interlinked by a series of subcontracting relations to petty, small, medium and large-scale capitalist (foreign and native) production. This discovery has substantiated the hypothesis that 'peripheral' industrialization, whether exogenously or endogenously induced, does not destroy petty and small-scale producers but very much incorporates them into its dynamic.² Thus, in the sense that subcontracting has persisted with weed-like tenacity, we can draw close parallels between the industrialization process in the industrialized (or developed) 'core' and that in the industrializing (or less developed) 'periphery'.

A mixture of 'spontaneous', 'compulsory' and 'encouraged' subcontracting—domestic and international³—has developed in the industrializing countries. Both official and industrial circles have made the case for subcontracting. Also global and regional bodies such as UNIDO, UNCTAD, OECD, the World Bank, ESCAP, APO,⁴ RCTT⁵ etc., have directly or indirectly involved themselves in fostering subcontracting networks in these countries. For example, the World Bank decided in 1978 to channel funds for the development of small firms⁶ through subcontracting and marketing links, portrayed as "mutually advantageous co-operation between small and large firms" which will allow small firms "to function alongside and reinforce big firms in doing the things that they, as small undertakings, do best."⁷

According to these protagonists of subcontracting, the imperative for subcontracting in industrializing countries comes from its industrializing and employment generation effects in capital scarce economies with unlimited

supplies of labour. Also subcontracting is expected to help to (a) reduce costs and increase profitability of the large units in the organised sector, and (b) develop small-scale production units. For the industry as a whole, it is expected to bring about economies of scale in production and increases in efficiency through social division of labour and economy of specialization, technology upgradation, competitive strength and above all flexibility of productive operations.

This is the quintessential 'image' created by the ideologues of what we may term 'subcontractism'. The image, especially with respect to small firm development, is an idealized version of subcontracting, the Japanese style, popularized by certain scholars as relevant for the industrializing countries.⁸ But many claims for this style of subcontracting remain unproven. The reality, in most cases as brought out by the detractors of subcontracting, does not correspond to the 'image'; large firms do seem to parasitically siphon off surplus of the small firms and use them as 'relief-valve'.

Certain Qualifications :

First, generalizations pinpointing main trends cannot be made simply because they just do not apply in all cases. There is wide variation in the levels, strategies and institutional arrangements of industrialization. However, we can safely say on the basis of diverse literature that international and domestic subcontracting and subcontracting exchanges (which create nexus between firms within a country or between countries) could be found in most of them, significantly or insignificantly in some industrial branch or the other.⁹ For example, in Greece, the state units procure technically advanced components from East European 'socialist' countries. Also foreign and nationally owned corporations are linked via joint production facility or subcontract work in their laboratories, especially in pharmaceutical and veterinary products and cosmetics.¹⁰ Further, multinationals, especially of the West German origin (eg. Siemens), have set up subcontract-export platforms in Greece. They have subcontracted in textiles, clothing, steel, aluminium, fruit and vegetable processing and canning, assembly of telecommunication equipment and television sets, cables and assembly of transport equipment.¹¹ Even in a country said to be at the bottom of the development-ladder such as Bangladesh, there exists domestic subcontracting in non-standardized parts for local producers of radio and television receiver sets and international subcontracting too : one electronics module is made for a Swedish company.¹²

Secondly, it is difficult to differentiate in reality between domestic and international subcontracting. Much of the literature is vague as to how much of subcontracted work is of international nature and how much due to the autonomous expansion of native capital. The capital-ownership-type of the parent firms is not always specified. This is a very important matter because foreign investments-export-oriented or inward-oriented or a mix of the two orientations-play a significant role in many of these countries. What appears to be domestic subcontracting could very well be international subcontracting in as much as the subcontract-order-flow is, in many cases, never straight-forward but usually percolates down from the foreign origin via many foreign and domestic intermediaries. On the other hand, there is the pitfall of not recognising subcontracting due to locally-owned firms' drive. Official statistics provide inadequate information or nothing on these inter-firm relations.

And lastly, it has been maintained in some of the literature that there is "little subcontracting in Asia"¹³ or that subcontracting in manufacturing sector remains "shallow" in comparison with its magnitude in industrialized countries, especially in Japan.¹⁴

The shallowness of domestic subcontracting is attributed to (1) lack of scope for subcontracting in traditional industries and/or initial development of chemicals, food, agriculture or beverage-based industries that do not involve a number of subcontractable intermediate items, (2) slow growth of capital goods and assembly industries, (3) limited transfer of skilled personnel from 'formal' to 'informal' sector due to their shortage in the former itself and the wide earnings gap in-between, (4) small domestic markets, (5) lack of cost-down competition due to import barriers or import ban plus restrictions imposed by governments on production and investment of large firms resulting in an unthreatened sellers market, (6) legacy of integrated plants and 'quasi-monopoly' position of medium/large parts makers, and (7) preference by petty and small units to work for the highly profitable repair and replacement market and so on.¹⁵

Such generalizations, however, need to be qualified. They certainly do not stand up to recent empirical research in traditional and modern industries in America Latina and Asia. For, native petty-small-medium companies have proliferated, albeit suffering high mortality, in subcontract position due to not only expanding export demand and tourist demand but also expanding domestic demand and valorization of native capitals.

More importantly, the key to the difference between the extent of subcontracting in industrialized countries and many industrializing ones is that the very character of capital ownership of parent firms is different. The potential firm in these countries, especially those largely dependent on foreign capital and trade, is often a foreign subsidiary or joint-venture. In the cases where these are assemblers, a major objective of foreign capital participation has been precisely to import key parts, components and other critical widgets manufactured efficiently by the plants of their parent firms or of their parent firms' subcontractors situated in industrialized countries or even in industrializing periphery. And in the cases where foreign capital participation is to make component parts, its major objective has been to re-export them to the final assembly plants of their parent firms wherever they are located. In either case, to energetically promote indigenous subcontracting would defeat a main objective of these parent firms' business in less developed countries.¹⁶

The development of some local subcontracting due to imposition of local content plans on foreign capital is an additional issue that needs critical scrutiny if one were not to be carried away by the 'bushwa propaganda' of the governments concerned.

It is in this wider context that this survey critically examines subcontracting phenomenon in industrializing countries. It also considers the related issues concerning the questions why is subcontracting limited and why are the subcontract-based linkages weak and spasmodic in certain less developed countries.

Subcontracting in America Latina :

In Peru, industrial firms and commercial firms (foreign retailers or shops in Lima) have offloaded production to an outworking chain. Most of the

outworkers are formerly self-employed manufacturers who found it increasingly difficult to survive as independent producers.

In clothing, merchant capitalists farm out work to small work shops run by tailors which in turn farm out to other outworkers. In footwear, multinational Bata has subcontracted to small workshops which in turn subcontracted to cobblers. Subcontracting is also common in the making of refrigerators, transport vehicles and stationery products. Apart from labour cost-down and flexibility, the large manufacturers' motives are to save on premises and pass on the acquisition and maintenance of equipment to subcontractors.¹⁷

In Colombia, the shoe industry¹⁸ is divided into small producers (with less than 15 people) situated in low income neighbourhoods and medium-large, mechanised units (with more than 50 people). Contrary to the general impression, most of the small shops have been set up by skilled or trained workers from the medium-large sector.

The shoe production is mostly for the growing domestic market— a market which has become segmented in terms of style variations. There is some exporting via international subcontracting. For instance, the large-scale, mechanised units subcontract from Bata Canada/US.

While the large-medium units mass produce within a narrow-style range, the small units bring out a wide style-range. The retail stores advance materials and farm out the whole work to small producers who subcontract between themselves on the basis of detailed specialisation. Almost all units, irrespective of size, subcontract out the stitching of uppers. The medium and large subcontract to small invisible shops to reduce costs by avoiding minimum wage payments plus the legally required fringe benefits. The very small units without the equipment to undertake stitching of upper subcontract to others' equipped to do that work.

A study in Argentina refers to the persistence of subcontracting in some industrial branches without being an obstacle to capitalist development in them.¹⁹ But another study in Brazil points out the opposite case that as industrialization increases, subcontracting practice would wither away because of the mounting organisational difficulties associated with it.²⁰ This study's finding is rather peculiar and does not stand up to the findings of Schmitz's branch-specific studies in Brazil.²¹

In the three internal-market oriented branches—knitting and clothing, hammock and weaving—that Schmitz studied, most of the small producers are the former skilled workers in the 'formal' sector. Though they have set up their own shops, the possibility of own-account production and direct access to market is ruled out because of growth constraints and virtually all of them become mostly unregistered subcontractors.

The fundamental growth constraints are access to rawmaterials and credit (for working capital needs). The availability and price of rawmaterial-(yarn) is controlled and manipulated by the big firms and the government (which procures from big spinning companies) at higher prices. Moreover, the large makers supply yarn on the condition that the finished product be supplied to them at a price lower than what it could have been otherwise. Thus, they suffer a squeeze from the higher prices for rawmaterials and lower prices for finished products. Having become subcontractors, the small have to live or die with irregularity of work and exploitative domination of the big.

In knitting and clothing, the large firms do not subcontract. They cater to the predictable mass market. But the medium-sized units subcontract out part or whole of work to small units which resubcontract between themselves. This medium-small connection caters to the unpredictable fashion market. The distribution network is so diffuse in the fast-fashion sector that a few small producers may directly break way to the segmented market. Sub-contracting persists here because its flexibility outweighs its organisational dilemmas.

In the hammock industry, the subcontracting chain extends from factories to unregistered family workshops to women home-workers (who do finishing operations). There is no technology transfer to the small units apart from the fact that some of their owners are ex-workers at big firms.

In weaving, the city firms directly or indirectly subcontract to registered small producers so as to reduce their fixed capital commitment, increase flexibility and cope with small-batch orders. But in this branch, the parent firms are increasing internal production and cutting back or keeping constant the extent of subcontracted production for three reasons: first, quality of subcontracted work is often inferior to that of in-house work; secondly, automatic looms would outcompete the mechanical looms currently-used; and finally, to contain noise pollution in urban/residential areas, the government regulation is forcing the small units to shift themselves to remote special industrial districts. This would entail fresh investment on the part of the subcontractors to buy a plot and build a workshop—an investment far beyond the means of small units. So, numerically the subcontractors would become fewer.

In Mexico, craft production is not an atavistic survival of native custom but has been expanding due to growing foreign market, tourist market and the market of affluent Mexicans for hand-made items with unique or exotic aesthetic qualities. The export and tourist demand-boom has given rise to a complex chain of subcontracting under increasing merchant control.²² For example, in textile crafts, the city wholesalers get orders from importers in the US or Europe. They then pass them on to small-town middlemen or their agents who in turn take the order to the artisans. The artisans depend on factory-made materials supplied by merchants on credit. This means that the artisans have to return the finished product at a price lower than would otherwise be paid.

The central point here is that subcontracting enables the entrepreneurs/wholesalers to meet the changing fads and fashions of the foreign, tourist and domestic markets with a few commitments and risks. The co-ordinators of the social division of labour need to just invest in storage facilities, for, the artisans provide their own tools and workplaces. Labour costs are kept down by avoiding labour laws. In the case of ruined work, the cost of materials is deducted from the wage of the artisans who risk having their supply cut off in addition.

Such an organisation of production in Mexico is not without organisational difficulties like embezzlement of materials, problems in ensuring quality and intensifying work in periods of peak demand and the like. Nevertheless, in the circumstances and given the unmechanised nature of the trades, there is no alternative to subcontracting.

Subcontracting in Asia :

The growth of many industries-textiles, garments, gloves, handicrafts, toys, leather, food-processing, paper, plastic and rubber goods, musical instruments, machinery, electronics etc. in the four Asian Tigers (i.e. South Korea, Taiwan, Singapore and Hongkong), the Philippines, Thailand etc., since the mid-60s has been largely or entirely through international subcontracting and resubcontracting arrangements.²³

International subcontracting has been an eminent corporate strategy of international firms of American, Japanese and European origins to lower costs and increase flexibility of their production and distribution.²⁴

The employment creation due to international subcontract-based industrialization in these countries has been unstable on account of the "shifting approach" of the multinational firms. In Hong Kong, many subcontractors survive the instability of subcontracting relation by serving many spatially proximate customers but this may not be the case elsewhere. The horrible exploitation of female and child labour has been documented well.²⁵ Moreover, the linkage effects, especially the technological type, are pointed out to be nil or minimal. Exceptions to this could be found, though.²⁶

Consider capital goods production. While in industrialized countries the final manufacturers do designing and final assembling and may produce certain key parts, and subcontract the rest (numerous parts and components and processes like casting, forging, and heat treatment), in industrializing countries the manufacturers are said to be more vertically integrated. Only small proportion of total cost is accounted by subcontracted work.²⁷

The limited subcontracting in Korean and Taiwanese metal and machinery industries has not been due to the underdevelopment of indigenous capacity as pointed out by APO,²⁸ but more due to the following reasons.²⁹ First, locally-owned firms as well as firms with foreign capital participation in Korea and Taiwan import parts and components. These could be direct imports, or via intra-transnational firm trade or due to tied-in clauses in licensing agreements. Secondly, there are cases where large parent firms find in-house production of certain items worthwhile because in-house demand for them is sufficiently large. Thirdly, parent firms change production-mix so rapidly that subcontractors based on conventional technology would not find parts-making worthwhile at all. Fourthly, parent firms face poor quality of subcontracted components and delivery problems so much so that the extra costs of co-ordinating a subcontracting network and providing technical assistance can be higher than the increase in costs due to vertical integration (for e.g., via idle capacities). Hence there is the preference for verticalization.³⁰

The argument that the small size of the domestic markets is responsible for the constriction of subcontracting seems to be a blind alley. In fact, Korean and Taiwanese production has been right from the beginning mostly export oriented. Domestic demand also has been on the rise. The export production of machine tools has been particularly remarkable. For example, CNC lathes, manufactured for export on the basis of computer-controlled production technology, have also been fast diffusing among 'low-performance', 'low income' buyers even up to small subcontractors. It is highly plausible that computer-based automation would be used to overcome the problems, for example, in South Korea, of many firms making too many types of final

products on too small a scale and of the consequent demand for very small series of variegated parts.

The size, rate of growth and type of foreign markets have been crucial determinants of the modes of production in these countries. The way these have stimulated the growth of subcontracting has been clearly established in the case of the Taiwanese machine tool industry.

The increase in market size for Taiwanese firms, generated largely by exports to the US, Europe, Japan, Australia, New Zealand, and Asia over the '70s, has increased not only division of labour within firms but also between firms. Job production system has given way to assembly line production in order to meet the marketing aim of selling a large number of general purpose machines. Parallel to this "a well-articulated system of subcontracting and satellite shops has evolved, similar to that in Japan. . . Some small firms continued to produce machine tools but began to subcontract a substantial proportion of value added. Others have begun to devote themselves exclusively to manufacture of parts and components for export and for local industry. Typically, a small machine tool company will itself manufacture key parts—spindles, the leadscrew and gears (although these have begun to be made in Taiwan) and subcontract the rest. The result has been a dramatic jump in quality, both of components and finished tools."³¹

That domestic market constraint is no explanation for limited subcontracting is also revealed by other studies. In Pakistan,³² there exists well-developed industrial base and widespread subcontracting in the manufacture of agricultural machinery, textile machinery and household durables (gas cooking ranges, water heaters, washing machines, fans, water coolers and so on). The subcontracted work involves casting, sheet metal cutting, machining, complete components, painting etc.

Most of the subcontractors are ex-skilled workers. The metal working industry comprises large-scale parent firms, medium-sized parent-cum-vendor firms and small-scale, pure vendors. The parent firms practise multi-sourcing and the subcontractors have diversified customers. There are specialized subcontractors which are larger than parent firms. Many parent firms select only those vendors who have a wide range of machining equipment and extend them loans to cover working capital needs. The financial assistance for the acquisition of fixed assets is little because that would contradict one of the basic motives of subcontracting, namely, minimising investment on capital equipment.

The credit subsidy by the parent firm enables it to have better control over subcontractors (for contract enforcement as also for getting new components made). Subcontractors are said to be more frequently satisfied with pricing. Those who considered the contract prices low are tied to parent firms via credit to develop new components, but these vendors have no complaints against payment schedules. Skilled machinists of parent firms frequently visit the subcontracting units to improve the quality of work.

Take the case of the Malaysian bicycle manufacturing industry.³³ The minimum economic size for a (general roadster) bicycle plant is such that the domestic market (a protected one) is more than sufficient for the two large makers—the foreign subsidiary of the parent firm, Raleigh, and the locally-owned firm, Far East Metal Works. In fact, the market can accommodate more than four such firms, on examining techno-economically viable scales of production. Even the key, high-tech components can be efficiently produced.

Raleigh and Far East have liaison with a number of subcontractors which supply to the original equipment market (OEM) as well as the replacement market. The subcontractors supply such OEM parts as frame, fork, mudguard, handle-bar, chain guard, luggage carrier, stand etc., which require relatively simple, labour-intensive manufacturing processes of cutting, grinding, thread forming, pressing, bending, welding etc. The sophisticated, specialized components such as crank, chain wheel, hubs, pedal and bell are either self-manufactured or imported by the large firms.

A point here is that in spite of efficient in-house manufacture and low-cost procurement from the subcontractors, Raleigh's final prices are higher than Far East's. This is because Raleigh creates a better image of itself as a high quality producer and charges an extra, high premium whereas Far East sells low priced, average quality bicycles.

A dissection of the motor vehicle industry in East and Southeast Asia (South Korea, Philippines, Thailand, Indonesia, Malaysia) would undermine the weightage assigned to domestic market constraint and tilt the balance towards other factors that go to explain why local subcontracting is shallow.

Typically, majority of the assemblers (foreign subsidiaries, joint ventures, licensees) began as importers or sales agents of completely-built-ups imported from industrialized countries. Later they became assemblers of imported CKD (completely knock-down) kits. And then, especially from the early '70s' they have been subject to government localization or domestic content programmes. The aim of local production has been to Asianize the production as much as possible in order to save on foreign exchange and give a fillip to small and medium firm development.

But governments have not made a sharp distinction between in-house manufacturing and subcontracting. For, localization has not meant local procurement; Asianisation is still highly import-intensive; much of local production has been done via in-house production and little via backward linkages with subcontractors.³⁴ And most of the subcontractors are foreign concerns, or joint ventures, followed by locally-owned concerns with or without foreign technical tie-ups.

The domestically supplied items through subcontracting are technologically easy metallic and non-metallic items or items having replacement demand or both. Items with scale economies involving big outlays on fixed investment are not subcontracted because of low volume final assembly. They are either part of CKD import or made in-house.³⁵

Under the localization schemes, the price of locally produced components is to be deducted from the CKD package price. The price deleted—the discount given by the exporter of CKD pack on its price when a certain component is deleted from it—is called "deletion allowance". But the parent firm fixes this far lower (by as much as one-third or one-fifth) than the price of the same component when it is imported individually for sale in the spare/replacement market. The sum of all deletion allowances would not add up to the price of the entire CKD pack.

The deletion allowances are deliberately kept low so as to discourage or prevent domestic manufacture of components. This apart, "if spare cost reflects actual cost, then the difference is transferred to the parent company, although there exists no actual transaction of goods. Even though the product is no longer imported, the local factory still must pay 70 per cent of the price. On the surface, the manufacture rather than importation of a product would seem

to be an industrial advance, but in reality means prohibitive taxation of private enterprise or unreasonable profit-making.³⁶

The difference between the actual cost of locally produced (whether in-house or subcontracted) item and the deletion allowance (inclusive of taxes) granted by the foreign assembler on the equivalent product is termed "cost penalty", which, simply, refers to unit cost-up due to overall inefficiency of small domestic market-oriented localisation. That is, cost penalty increases as domestic content ratio³⁷ rises. This rise in costs is said to be a deterrent for the growth of local sourcing including subcontracting in these countries.

The exponential curve capturing the connection between domestic content ratio and cost penalty is called the "Barranson curve".³⁸ Now, to argue entirely on the basis of this curve that the absence of large market has been the cause of lack of vertical disintegration through subcontracting would not enlighten us much. For, after all, the Barranson curve would have occurred in the early phases of Japanese automotive industrialization too and yet they (the Japanese) developed a wide and deep subcontracting system.

Interestingly, the East and Southeast Asian countries in late '70s can in fact be roughly and not unreasonably likened to Japan in early '50s in terms of technology, market, cost penalty and international (price) competitiveness.³⁹ The comparability of domestic content ratio—cost penalty relationship in Korea in the late '70s' with that of Japan in the '50s is particularly remarkable. So, the right question is why comparable subcontracting network has not developed and why are these countries still largely dependent on imported automobile parts and components—both original equipments and replacements. The answer to this lies, as emphasized earlier, in the character of capital ownership in these countries and in the preference for better and internationally acceptable parts which are readily available at cheaper prices than the locally produced ones,⁴⁰ and in the absence of programmes by the foreign concerns or many governments to develop the capabilities of the native suppliers like in Japan and so on.

A postulate as to why subcontracting is limited in Southeast Asian assembly industries is that while the problem (in the initial phases) of shortage of financial and other resources compelled the Japanese assemblers to subcontract out and concentrate on core processes,⁴¹ in Southeast Asia where assemblers began their business in early '70s, there was no such problem. However, a more recent study points out that as credit situation became tighter and real wage decline stopped by late '70s, the assemblers have started subcontracting to small-medium firms.⁴²

Hill's field study in the Philippines throws some light on the weak linkages following the connection between assemblers and subcontractors, which may also hold good for some other countries. Instead of one-to-one stable subcontracting relations the Japanese style, there are plural and unstable ties. The assemblers practise multisourcing to apply competitive pressure. Majority of the contracts are short-term. Delivery schedules are often revised by both assemblers and subcontractors. Small suppliers are not interested in longer-term agreements because they do not get price revisions with the rise in the rawmaterial costs.

There is no technological spinoff in terms of former employees leaving and setting up subcontract shops. Since very simple items are farmed out to local suppliers, technological assistance to them is minimal. Blueprints and samples are given but they are just the necessary corollary of subcontracting,

not technological assistance. There are only a few cases where demonstrations follow them or where new processes and raw materials are used. There are no technical or training programmes for subcontractors. Nor is there any guidance and assistance in regard to acquisition, layout and use of machinery. Visits by assemblers' technicians are infrequent. However, simple quality control procedures are taught to improve conformance.

The assemblers do not give any direct assistance in the form of equity capital. Nor do they offer indirect assistance in terms of order guarantees for highly specialized operations or industry-specific components. They do not give loans, down payments or indirectly facilitate subcontractors' access to the lower interest rates in the formal credit sector. Their payment schedules are very elastic leading to cash-flow crises at the subcontract shops.

Furthermore, assemblers do not procure raw materials on behalf of the suppliers and thereby pass on to them part of their pecuniary economies of scale because that would contradict their motivation to streamline their operations. Also because they find that the subcontractors substitute inferior raw materials for what they supply or because the subcontractors blame the rejects on defective raw materials received from the assemblers.

Lastly, the dependence of subcontractors on many customers and the negligible guidance and assistance of the assemblers are interconnected. Assemblers do not substantially prop up the subcontractors because they cannot appropriate a major part of it as competitors will equally benefit from upgrading a supplier.

Compulsory Subcontracting

The division of labour between large and small firms through subcontracting in Argentina, Brazil, India, Poland, Israel etc., has been brought about to some extent by 'compulsory subcontracting'.⁴³ This kind of subcontracting refers to (1) governments' binding agreements with foreign concerns in such a way that the latter offload some specified percentage of work in a specified span to local firms; (2) governments' purchasing regulations whereby a given percentage of the value of items ordered by the government or government-controlled organisations from large firms or contractors is expected to be subcontracted to small firms, and (3) the control exercised by the governments in giving or withholding approval of large firms' expansionist plans, in granting or withholding concessions or privileges or issuing licences to import the required machinery.

But the role of governments in many developing countries has been very inconsistent in that promotional measures and strong restrictive policies have run parallel to each other, leading to net negative effect on the spreading of subcontracting relations. A few such contradictions are as follows: first, the system of business taxes which are levied on turnover everytime a transaction is made instead of on the value added makes it profitable (on the tax savings grounds) to integrate operations within a single enterprise;⁴⁴ secondly, fiscal incentive schemes encourage in-house manufacture because only large firms receive such benefits, for example, as in the Philippines⁴⁵; thirdly, distorted tariff structure creates an incentive to import rather than to look for indigenous suppliers. The distortion has happened in two ways: (a) the import price of raw material is greater than the import price (landed cost inclusive of tariff) of the component itself⁴⁶ and (b) capital and intermediate goods are given

smaller 'effective rate of protection' than consumer goods⁴⁷; lastly, components classified as locally made-up are, as pointed out above, highly import-intensive, some involving little more than 'screw-driver' assembling of imported kits. For the same reason, saving on foreign exchange is open to question.

V

Subcontracting in 'socialist' periphery

International subcontracting relations exist between industrialized countries and industrializing 'socialist' countries,⁴⁸ between 'socialist' countries themselves; and between socialist countries and 'capitalist' industrializing countries. The latter two varieties happen as an 'instrument of industrial co-operation' and as a search for cheap labour in labour-intensive activities and also as a means of overcoming the problem of labour shortages in 'socialist' countries.⁴⁹

A well-structured subcontracting system too exists within some socialist countries. For example, the Chinese subcontracting system extends beyond the urban areas to the rural areas. The pyramidal subcontract chain is compared to 'dragon dance'. The head of the dragon is the parent unit in a city or town and the tail consists of a large number of small and medium plants in the urban and rural areas, which supply a number of intermediate items to the parent units.⁵⁰

Small business in China has the same structural features as in capitalist countries though there exist *differentia specifica* by way of their ownership and relationship to the state. The state has created and maintained a clear dualism between the large state enterprise sector on the one hand and urban and rural collective sectors on the other quite similar to the dualism between organised and unorganised sectors in capitalist/mixed-economy countries.

The bigger state controlled and sponsored industries subcontract to urban collective sector in order to (1) cut down their risks by shifting the burden of adjustment to changes in state plans to the collectives; (2) to cut costs by offering workers in the collectives lower pay, less job security and fewer fringe benefits and welfare provisions than those in the large state sector; and (3) to avoid managerial problems and inflexibility associated with large scale operations.⁵¹

This is not all. Both state enterprise and collective sectors use labour-only subcontracting or contract labour system; they hire peasants through contract with rural collectives/production teams to which the peasants belong. The state commerce also employs contract labour.

The peasants stay in the factory dormitories, separated from their families in the countryside. Thus, they create no pressure on urban land, institutions and services. They also relieve the state of the burden of supplying 'commodity grain' to the regular workers. They are cheaper than regular workers even though they do the same work as the regulars do. They incur travel expenses to and fro their homes. They do not get any fringe benefits like medical insurance, accident insurance, pensions, sick leave etc. They ensure for the management labour discipline and allocative flexibility. Finally, contract labour system in China is the way of reducing rural underemployment and unemployment 'in a planned way' by avoiding the risks of uncontrollable migration of peasant labour to towns in search of jobs.⁵²

It may be noted here that in the analyses of Marx and Lenin, subcontracting systems were treated as traditional systems and attacked as technologically conservative lower forms of capitalism based on the worst forms of exploitation of labour. But subcontracting is not yet dead and the practitioners of Marxism and Leninism have been silent about its exploitative character.

VI

The Case of India

In India, even today the increasing commercialization of production of various handicrafts is predominantly based on subcontracting to household units. The days of independent artisans are practically over; units working on own-account are fewer. Now the order of the day is enforced by middlemen, agents or subcontractors; they act on behalf of manufacturers, merchants or exporters by providing the artisans with raw materials, tools, designs, miserable wages and an outlet for their products.⁵³

There is a view that the subcontracting practice based on traditional technology is incompatible with the rigorous demands of the export market in terms of large volumes, punctual delivery and strict and consistent quality control. In fact, a main criticism of subcontracting in Indian handicrafts is that it has not permitted upgradation or product innovation to meet the demands of export market. The persistence of this system nevertheless indicates that it has considerable advantage over the integrated factory system.

The compulsion to modernize the process and standardize the product and improve quality control and prevent embezzlement of materials has ushered in workshops or factories; but they are numerically insignificant. Moreover, there are many instances of factories closing down or reverting to subcontracting system. The decisive trend is towards breaking the semi-urban handicraft factories into small units employing less than 10 people in order to circumvent the rigour of Factory Acts and other legislation and the militancy of organised labour. In some cases, the splitting up has been ingeniously achieved through 'labour-only subcontracting'.⁵⁴

In the cotton textile industry, the government had frozen the capacity (loomage) of large mills and allowed uncontrolled powerloom expansion. It is now no secret that the mill owners had been subcontracting to powerlooms to overcome the freeze on expansion. The nexus between the Bombay mills and the Bhiwandi powerlooms is a neat example in this connection. This is also economical to the mills because powerlooms have low capital costs and low overhead and labour costs. The Bombay mills could minimise revenue loss despite the largest strike in history involving more than 2,50,000 workers during 1982-83 by subcontracting to the powerlooms in Bhiwandi and elsewhere.⁵⁵

In garment making, subcontracting has occurred not only within the factory and non-factory sectors, but also between them. Similarly, in the production of hosiery, sports goods, leather and footwear, match-making etc., the manufacturers and traders have taken recourse to decentralization via subcontracting.⁵⁶

As regards modern industries, we could not have more salient findings.⁵⁷ There are cases of subcontracting and re-subcontracting chains—from big to medium to small to smaller. There has been a strong tendency

towards the formation of split units. It is no more a secret that a number of these units are the 'benami' properties of the families, relatives and business associates of the management of the big and medium (umbrella) units. A number of them also have come into existence due to small units splitting into smaller units. Most of these split units are subcontract shops or alternative sources of supply. The parent firms have actively supported their split units with contracts for supplying materials, components, semi-finished and finished items.

A number of whole-component or product or subassembly subcontractors (whether controlled by umbrella units or not) have resubcontracted less sophisticated single operations (like tapping, plastic moulding, sheet metal work, galvanization, polishing, welding, painting, electroplating etc.) to other small subcontract units. The split units serve the motives of the parent firms of expanding, and reducing costs by bypassing labour and fiscal legislation and by avoiding labour concentration and troubles. The parent firms also benefit from various privileges (eg. reservation of items), exemptions (eg. from excise tax) and forms of aid granted to the small sector by the government. The parent firms can get scarce inputs; they can also "evade tax by shifting profits to the lightly taxed small units through a kind of 'transfer' pricing, overstating the price of the latter and hence high profits and thereby increasing its own tax-deductible input costs."⁵⁸ The split units are also used for diversifying product range and for ensuring timely supplies

There are instances of skilled workers, engineers/technicians of big shops leaving on their own or on encouragement from parent units and setting up subcontract businesses. There are also instances of big units helping them out with second-hand machinery or materials. Some subcontractors could become own-account production units and achieve rapid growth but a majority of them do not follow such a path.

The pricing linkage is usually 'combative', the outcome being worse for small subcontractors unlike for larger and independent suppliers (serving the whole industry, as a case study of the automobile industry points out. The low prices thrust upon small suppliers are considered by parent firms as a compensation for the initial high 'search costs' and costs of 'guidance and assistance.'⁵⁹

Some studies have found that parent firms (wholesalers and manufacturers) procure complete items from small units (in organised and unorganised sectors) at very low rates and then price them high in the domestic market so as to realize higher profit margins than those that would have materialized through their own production.⁶⁰ But this may not be the case in regard to goods so lifted for export markets due to fierce competition.

How much of the growth of the modern small-scale industry has been due to subcontracting rather than competition with the large-scale industry is a question that cannot find a satisfactory answer in quantitative terms. The exact number of subcontractors/ancillaries and the dimensions of their supplies over time across industrial branches and across regions is not known and is not possible to estimate with precision.⁶¹ Moreover, the available estimates are open to question as neither the definition nor the method of estimation is specified.⁶²

Notwithstanding the difficulties in arriving at precise estimates and industry specifics and limited subcontracting in some industries like shipbuilding,⁶³ there is a lot of direct and indirect evidence to show the

increasing integration of small-scale production into large-scale production through subcontracting.⁶⁴ Interestingly, for example, considerable part of the total value of exports of large firms in the labour-intensive hand, small and cutting tools industries of the engineering sector consists of value added through subcontracting liaison with small firms.⁶⁵

The important point is that this integration has occurred in Indian industries despite the "artificial division" between large and small sectors and even because of it. In fact, the stated objective of the 1980 Industrial Policy Statement to remove the artificial division and foster integrated development of large and small industries is nothing but the avowal of the already existing high level of integration through subcontracting and ancillarization.⁶⁶

It may be interesting to note that firms of equal size and different sizes have been interlinked by work-order-flows from abroad. Large firms including FERA (Foreign Exchange Regulation Act) companies, 100 per cent export-oriented units or 'green card' companies and those in free trade zones account partly for the growth of international subcontracting in India. The literature points out both 'unsatisfactory' growth and growing interest of multinationals in subcontracting to firms in India in the fields of electronics, textiles, leather, chemical (pharmaceuticals), hand tools and machine tools, machinery, transport equipment (especially auto parts, original or spare), other light engineering, electricals and so on.⁶⁷

Interestingly, labour-only subcontracting has risen considerably in chemical industries, basic industries (eg. steel plants and coal mining), textile mills and so on, over the '70s.⁶⁸

What accounts for subcontracting in India? The particular factor or congeries of factors that govern the impulse to subcontract may vary between firms. However, some general factors that may have induced the emergence of subcontracting in India can be identified.

The decision of many firms to subcontract has been undertaken to benefit from scale economies and the use of specialized machinery and services of subcontractors. Large firms, operating at full capacity constrained to expand further due to government regulation in terms of MRTP (Monopoly Restrictive Trade Practices) licensing laws, reservation policy or otherwise have resorted to subcontracting. In the '70s subcontracting increased as a way of overcoming rises in cost of capital in the organised sector. Also in the '70s the number of excisable products, especially in engineering, shot up in the large sector. As against this, some small units were exempted and others were subject to low rates. Hence subcontracting to small units gained currency.⁶⁹

Subcontracting could also have emerged as a strategy to reduce the risk of future fluctuations in the light of the 1966-69 recession. Further, the growth of inter-firm competition consequent upon the recession and labour problems go a long way to explain the diffusion of the subcontracting practice across the industrial spectrum.⁷⁰

Postulates

In the wake of increasing importance of subcontracting, a number of postulates have been advanced on its rationale. A postulate is that as small units get concessional finance, large firms subcontract and extract longer credit from the small firms.⁷¹ This hypothesis cannot stand up to the growing reality of non-availability of timely financial assistance from banks etc., to

small units. Also large firms generally delay payments irrespective of the financial situation of the ancillaries in the process of husbanding their own cash position.

Subcontracting may have grown as a means of growth for small firms, albeit with low profit margins, in the context of marketing problems encountered by them.⁷² However, the point is that many small units, unable to directly penetrate the oligopolised markets, are perforce subject to exploitation by large firms through subcontracting of whole products. It is unlikely that this exploitation permits high profitability and growth of small firms in general. In this connection, a study by National Small Industries Corporation found that despite the unequal power relationship between the parent firms and ancillaries, affecting the profit margin of the latter, there are ancillaries whose entrepreneurs could manage to make high profits and "relax in air-conditioned comfort" on the basis of super-exploitation of cheap labour.⁷³

However, whenever the parent firms find themselves in a downturn, the first victims would be subcontractors. For example, many engineering ancillaries in and around Calcutta thrived due to the brief boom during the Third Five Year Plan on the basis of the railway expansion programme. But when the mid-60s crisis hit hard the engineering industry, the orders were withdrawn and the ancillary boom collapsed. These ancillaries also lost to competitors in Bombay and Faridabad. Even in the boom period, the self-employed owners of ancillaries could not earn for themselves a wage equivalent to that paid to their workers.⁷⁴

The decline in factory concentration (by size of employment) could imply the growth of subcontracting.⁷⁵ But this might also be due to labour displacing mechanisation or splitting up or labour only subcontracting or employment of casual labour at the cost of the permanent workers.

Subcontracting may be due to the interest shown by some sections of big business in actively supporting the development of a diversified ancillary industry in order to break the monopoly power of limited sources of supply.⁷⁶

Lastly, it has been argued by some scholars that subcontracting is one of the ongoing re-organisational changes under conditions of relative stagnation that would resurrect the growth rate of the industrial economy.⁷⁷ Though it stands to reason that subcontracting reduces costs, increases profitability and thereby growth of a firm, in quantitative terms it may not be possible at all to find out the extent of subcontracting/ancillization in industries amenable to subcontracting, as stated earlier. Also, there is the problem of knowing how representative these industries are in terms of their changing relative weights in the manufacturing sector as a whole so as to speak about subcontracting as a factor facilitating growth or inducing structural change. Furthermore, there is no reason why the growth of subcontracting itself could not be determined by a steady, high growth rate of the economy, say at about 8 to 10 per cent, which could create competitive conditions in industrial investment or capacity utilisation to service expanding markets.⁷⁸

Problems and other features of Indian subcontracting

Why is it that, despite the rise of subcontracting, it is considered to be 'unsatisfactory' so as to militate against the integrated development of large and small industries in India? From the parent firms' side, the constraints are as

follows, First, the role of public sector enterprises in developing ancillaries or ancillary industrial estates has been attacked and found to be a failure in general⁷⁹, although the concept of ancillarisation has been recognised by the government as integral to the industrial development process and the state units have been expected to play an exemplary role in this regard⁸⁰. It is said that the public units in general follow minimum purchase formalities and limit themselves to a few ancillaries proper while having several informal subcontractors because of the 50 per cent offtake-rigidity imposed by the official definition of an 'ancillary'.

Parent firms in general do not offload technologically advanced items to firms they cannot control or monitor closely. Therefore ancillary work tends to be of low technology. This is also to do with lack of loyalty between the parent and ancillary firms. There are cases where the cost of small units is not less than the in-house cost of the big units, possibly because of lack of required machinery or low-price, high quality raw materials. Or, cost-ineffectivity is attributed to reservation of markets for subcontractors. Alternatively, the high cost may be simply due to lack of minimum efficient scale of production of the subcontractors concerned.

Many ancillaries are reported to be faulting on delivery schedules. More importantly, the growth of subcontracting could have suffered because the definition of job-work did not permit free flow of rawmaterials and components to subcontractors and of semi-finished items back to parent firms. The to and fro transactions have been made subject to excise and sales taxes etc., leading to the cascading effect of multi-point levies.

From the subcontractors' viewpoint, the constraints are many. They do highly risky business and are dependent on the growth of large units. A five per cent fall in the growth of the large unit is said to result in a 100 per cent fall in demand for ancillary items. For example, when the 1974-75 auto slump broke out, and many big units downed their shutters, several ancillaries sank.

The subcontractors have undefined workload and volatile manufacturing schedules because of irregular and erratic and even 'one-off' work orders, shortage of power or essential rawmaterials and obsolescence in their production methods and quality controlling in relation to technological progress absorbed by the parent firms. Also, this may be due to lack of mass production programmes at the parent units, a credit crunch on parent firms, product market fluctuations faced by the main units, rejection of goods and so on. The relationships are not long-term and durable.

Their cash-flow management is often bad because of delays of payments from parents. This delay may be deliberate or, due to credit crunch or product market downturns on parent firms. Whatever be the reason, the working capital of subcontractors is blocked. In this milieu, they suffer from a de facto credit squeeze by banks. And if they manage to borrow from banks by discounting bills, they suffer additionally from the penal interest rate on this borrowings, which tends to wash away their low profit margins. If the ancillary stops supplying to the parent, the latter will go to others and repeat the same practice till it is able to pay and come back to the former ancillaries. The point here is that the availability of easy credit at the 'appropriate time' seems to be a sheer myth. This was an important finding of a field study of an industrial estate near Madras⁸¹.

Multi-sourcing by parent firms leaves the subcontractors with no scale economies. Besides, there is no 'fair price' in this game. Parent firms do not usually grant price increases corresponding to increase in input costs of

subcontractors. Cut-throat competitive bidding between smaller subcontractors leads to below-cost quotations to grab work orders. The tender system practised by several state units and departments is said to militate against the health of ancillaries. The mushrooming middlemen (in the form of 'bogus' units) appropriate the orders by making bids or tenders at cut-throat quotations and pass them on to the jobbers. The 'middlemen-jobber clique' system indirectly kills real investors, who just cannot cope with the price-warfare. There is no clue to how widespread this tender—contract system is today, though.

Most of the subcontractors suffer from delays in inspection of goods and acceptance by parent firms. When such delays take place, there seems to be no sharing of the inventory holding costs between the parents and subcontractors; the parents perforce force their suppliers to bear those costs. Many suppliers, especially in industrial estates, are heavily dependent on one parent firm. Thus, their survival and collapse is neatly intertwined with the fate of the parent firm.

Interestingly, in this precarious context, many small firms on subcontract in the engineering industry, as part of their survival and risk minimisation strategy, have resorted to exports so as to reduce their dependence on a few domestic large parent firms. This exporting tendency may increase their market viability and bargaining power vis-a-vis the domestic large firms. It may also improve their cash-flow situation because of the prompt payments by the foreign parties⁸².

VII

Concluding observations

Despite the daunting diversity of the industrializing countries in various respects in the context of the above discussion, we may end with some common and relatively safe observations.

In traditional industries based on the system of batch production of low technology products with limited or without any technical scale economies and subject to fast changing demand, social division of labour and specialisation through subcontracting has been by and large the form of production organisation.

In modern industries, since not all items/operations can be internally done at their respective efficient scales of production, it is very reasonable to expect the tendency to purchase and subcontract out certain standardized and non-standardized items.

Such tendencies in these industries are also influenced by changes in inter-firm competitive, labour market and product market conditions, changes in government policies, nature of capital ownership-type of parent firms etc. An inquiry into the effects of these changes in relation to country, industry, firm and product specific studies would avoid the pitfalls of sweeping generalization.

Further, for parent firms, subcontracting is a means to several ends, especially cost reduction and flexibility augmentation in a broad sense. As for the destiny of subcontractors, usually, the adjustment costs of changes effected at the parent firms are passed on to them to their disadvantage and even collapse which is also governed by many other fundamental growth

constraints they face. In this sense, there is a wide gap between the image and reality of subcontracting.

This survey has emphasized, first, that contrary to certain overstretched generalizations, subcontracting is widespread in Asia and America Latina; secondly, that whether subcontracting could develop in many industrializing countries, especially those with export-orientation, has been largely determined by the internal and overseas dynamic of Western and Japanese capitalisms themselves; thirdly, that the relatively 'shallow' spreading of subcontracting relations in these countries cannot be squarely attributed to the small domestic market constraint; and finally that the idealized version of Japanese subcontracting in relation to small-firm development seems to be largely a myth in industrializing countries⁸³. In reality, subcontracting is largely an asymmetrical, unsymbiotic and unstable relationship between firms in the industrializing periphery. The survival and growth of subcontractors—not many—seems immediately to depend mainly on their ability to diversify in terms of products/operations and clientele in the milieu of precarious business environment in which they often operate.⁸⁴

Notes & References

1. There exists subcontracting if a firm does the following types of work according to technical parameters and design specifications of the order set out in advance, from another firm : (1) production of materials, parts and components or (2) performance of any subassembly or assembly or (3) any processing or (4) any service or (5) even manufacture or assembly of an end-product. The giver of the order is called 'parent firm' and the taker, 'subcontractor'. For discussion on definition and a general perspective of this 'phenomenon', see Annayajhule JCB, 'Subcontracting of Industrial Production—An Anatomy', *The Asian Economic Review* (The Journal of the Indian Institute of Economics) Vol. XXXI No. 2, August 1989.
2. We draw from Lucio Kowarick, 'Capitalism and Urban Marginality in Brazil' in Ray Bromley and Chris Gerry (ed.), *Casual Work and Poverty in Third World Countries*, John Wiley & Sons Ltd., 1979, p. 69 and *passim*.
3. The parent firms in international subcontracting are transnationals, especially of American, West European and Japanese origins. The subcontractors could be foreign subsidiaries (which completely export to the parent firm or which export and/or sell in the country in which they are located), joint ventures, independent foreign enterprises located in LDCs and independent LDC-firms. See Annayajhula J.C. Bose, 'Demystification of International Subcontracting', *Social Scientist* 198-199, Nov.-Dec. 1989.
4. Asian productivity Organisation, Tokyo.
5. Regional centre for Technology Transfer, Bangalore, India.
6. David L. Gordon, 'The Bank and the Development of Small Enterprises', *Finance & Development*, Vol. 16, No. , March 1979.
7. See Cheryl Payer, *The World Bank A Critical Analysis*. Monthly Review Press, New York 1982, pp. 69-71. . .
8. For example, it has been propagated that "subcontracting can smooth the path of small enterprises and make them a suitable instrument for mass employment creation in developing countries that are committed to industrialization"; that "subcontracting can lessen the obstacles to small entrepreneurs setting up business and can help them, once they are established, to survive and flourish"; that subcontracting is a tool of technology transfer from the large to the small producers. In this connection see Susum Watanabe, 'Subcontracting, Industrialisation and Employment Creation' *International Labour Review*, Vol. 104, No. 1/2,

- 1971; Susumu Watanabe, 'Technological Linkages Between Formal and Informal Sectors of Manufacturing Industry'. Working Paper 34, WEP 2-22, ILO, Geneva 1979; and APO, *International Subcontracting : A Tool of Technology Transfer*, Tokyo 1978.
9. UNIDO, *Subcontracting for Modernizing Economies*, UN, New York, 1974.
 10. Evangelia Dokopulon, 'Foreign Manufacturing Investment in Greece, Competitiou and Market Structure', in F.E.Ian Hamilton (ed.), *Industrialization in Developing and Peripheral Regions*, Croom Helm 1986, p. 203.
 11. Dokopulon, 'Multinationals' and Manufactured Exports from the Enlarged EEC Periphery', in F.E. Hamilton (ed.) *op.cit.* pp. 214-15.
 12. *Electronics Information & Planning*, 'Report of the Seminar on Subcontracting and Complementation in the Electronics Industry in Developing Countries of ESCAP Region', Vol. No. 6, March 1983, p. 338.
 13. Seiji Naya, 'The Role of Small Scale Industries in Employment and Export of Asian Developing Countries', *Hitotsubshi Journal of Economics*, Vol. 26, No. 2, December 1985, p.158.
 14. Susumu Watanabe (1979), *op. cit.*
 15. OECD, *Promotion of Small and Medium-sized Enterprises in Developing Countries Through Collective Actions*, Paris 1969; Watanabe (1979), *op. cit* pp 87-88.
 16. My thanks are due, to Dr. Sudipto Mundle for his clarificatory comments on these lines.
 17. Alison MacEwan Scott, 'Who are Self-Employed?', in Bromley and Gerry (ed.), *op. cit.*
 18. Lisa R. Peattie, 'What is to be Done with the Informal Sector?' in Helen I. Safa (ed.) *Towards a Political Economy of Urbanization in Third World Countries*, OUP, 1982.
 19. This is a conclusion of a French study, translated and cited in Hubert Schmitz, 'Growth constraints on Small-Scale Manufacturing in Developing Countries : A Critical Review', *World Development*, Vol. 10, No. 6, June 1982, p. 436.
 20. A. Ph.D. thesis cited in Schmitz, *op. cit.*
 21. Hubert Shmitz, *Manufacturing in the Backyard : Case studies on Accumulation and Employment in Small-Scale Brazilian Industry*, Frnances Pinter, London 1982.
 22. We draw from, the very fascinating article by the anthropologist, Alice Littlefield, 'The Expansion of Capitalist Relations of Production in Mexican Crafts', *Journal of Peasant Studies*, Vol. 6, No. 4, July 1979.
 23. See Linda Gail Arrigo, 'The Industrial Workforce of Young Women in Taiwan', *Bulletin of Concerned Asian Scholars*, Vol. 12, No.2, April-June 1980; A. Wei Djao, 'Traditional Chinese Culture in the smtall Factory of Hong-Kong', *Journal of Contemporary Asia*, Vol. II, No. 4, 1981; Victor Fung-Shen Sit, 'The Nature and Intensity of Subcontracting in Small-Scale Industry', *Small Industry Bulletin for Asia and the Pacific*, No. 17, 1981, pp. 69-74; Rosalinda Pineda-Ofreneo, 'Philippine Domestic Outworkers : Subcontracting for Export-oriented Industries', *Journal of Contemporary Asia*, Vol. 2, No. 3, 1982; Rene ofrenco, 'Contradictions in Export-led Industrialization The Philippine Experience', *Journal of Contemporary Asia*, Vol. 14, No. 4, 1989; Chirayu Isaranghun, 'Development of Small-Scale Industries and their Linkages with Large and Basic Industries', *Small Industry Bulletin for Asia and the Pacific*, No. 16, UN, New York, 1979.
 24. There is a veritable explosion of knowledge on the phenomenon of international subcontracting; a detailed analysis is beyond our perview here. See Annavajhula J.C. Bose, *Social Scientist*, *op.cit.*
 25. For instance, see the moving Christiani Conference of Asia and Urban Rural Mission, *The Plight of Asian Workers in Electronics*, Hong Kong, October

- 1982; and Rachel Grossman, 'Women's Place in' the Integrated Circuit, *Manushi*, December '79-January 80.
26. In Shibōri industry for example, "Shibōri is a silk material used for high quality kimonos. Because of the mounting labour shortage, Japanese shibōri-makers started subcontracting the most labour-intensive process to Korea in 1962. At first only the tying of dots on imported silk fabric was done in Korea to be dyed and finished back in Japan. Gradually, however, cocoon-raising and spinning and weaving of silk fabric used for shibōri processing was local. At the same time the dyeing industry gradually improved its technological standard and now does a considerable amount of the dyeing too." See APO (1978), *op. cit.* p. 38.
27. Daniel Chudnovosky et al., *Capital Goods Production in the Third World*, Frances Pinter, London, 1983, pp. 138-39.
28. APO (1978), *op. cit.* pp. 106-17.
29. Chudnovosky et al., *op. cit.*
30. It may be noted that in order to improve the quality of work done by small-medium subcontractors, the Korean government has established Korea Production Technology Corporation that works for their uplift.
31. See Alice H. Amsden, 'The Division of Labour is Limited by the Rate of Growth of the Market: The Taiwanese Machine Tool Industry in the 1970s', *Cambridge Journal of Economics*, Vol. 9, No. 3, September 1985, p. 276.
32. Ijaz Nabi, *Subcontracting and Industrialisation in Developing Countries*, Discussion Paper No. 48, Economic Growth Center, Yale University, May 1985.
33. Fong-Chan Ong, 'Appropriate Technology: An Empirical Study of Bicycle Manufacturing in Malaysia', *The Developing Economies*, Vol. 18, No. 1, March 1980.
34. For a good discussion, see chudnovosky et al. *op. cit.*; Hall Hill, 'Subcontracting, Technological Diffusion and the Development of Small Enterprise in Philippine Manufacturing', *The Journal of Developing Areas*, Vol. 19, No. 2, January 1985; and Halimah Todd, 'Jostling for a Stake in the Big Car Parts Bonanza', *South* No. 37, November 1983, on the so-called 'Malaysian Car'.
35. Konosuke Odaka, 'Is the Division of Labour Limited by the Extent of Market? A Study of Automobile Production in East and Southeast Asia', International Development Center of Japan (mimeo), January 6-8, 1982.
36. Ohara Ken, 'Strategies for Asian Regionalism: World Auto-Industries and National Government', in *Ampo Japan-Asia Quarterly Review* (Special Issue), Tokyo 1977.
37. That is, the proportion of the product value that is accrued to domestic production.
38. Because it was Jack Barranson, *Automotive Industries in Developing Countries*, The Johns Hopkins University Press, Baltimore 1969, who for the first time established such relationship in his study of automotive industry in Argentina, Brazil, India, Mexico and New Zealand.
39. Odaka (1982), *op. cit.*
40. In the Philippines, according to APO (1979), *op. cit.* p. 56; "almost the only item that is cheaper than those of imports is seats but even in this case 30 percent import duty is the key element and the question of quality is neglected."
41. Odaka (1982), *op. cit.*
42. Hill, *op. cit.*, p. 257.
43. UNIDO, *op. cit.* p. 59 and *passim*.
44. Konosuke Odaka, 'The Motor Vehicle Industry in Asia: A Study of Ancillary Firm Development' (mimeo), Manila, June 1980.
45. Hill, *op. cit.*
46. *Ibid.*

47. Isaranghun, *op.cit.*
48. Frobel et. al., 'Tendency Towards a New International Division of Labour', *Economic and Political Weekly*, Annual No. 1976.
49. Dimitri Germidis (ed.), *International Subcontracting A New Form of Investment*, OECD, Paris 1980, pp. 17-18.
50. Ram Vepa, 'Small and Medium Industry in China', *Laghu Udyog Samachar*, February 1979.
51. See Martin Lockett, 'Small Business and Socialism in Urban China', *Development and Change*, Vol. 17, No. 1, January, 1986.
52. Marc Blecher, 'Peasant Labour for Urban Industry : Temporary Contract Labour, Urban-Rural Balance and Class Relations in a Chinese Country', *World Development* Vol. 11, No. 8, 1983.
53. Vincent Cable and Ann Weston, *Indian Handicrafts and Handlooms—Production for the World Market*, ICRIER, New Delhi, October, 1983.
54. Under this system, the parent firm employs workers alongside (or at the cost of) its regular workers through outside subcontracting companies or hiring agents or through inside 'central' workers. The workers so employed perform ancillary or even mainline tasks at the plants of the parent firm.
55. Cable and Weston, *op. cit.*; R. Nagaraj, 'Subcontracting in Indian Manufacturing Industries', Working Paper No. 192, Centre for Development Studies, Trivandrum; and personal communication with Prof. Jan Breman who had done field work in Bhiwandī.
56. See U. Kalpagam, 'Labour in Small Industry Case of Export Garments Industry in Madras', *Economic and Political Weekly*, November 28, 1981; *Business India*, 'Enterprise : A Smashing Success', April 23-May 6, 1984, pp. 99-101; Frontier, 'Hosiery Strike', June 23, 1984, pp. 11-13; A.N. Bose, *Calcutta and Rural Bengal : Small Sector Symbiosis*, Minerva Associates Publ. Ltd., Calcutta 1978; Annapurna Shaw, 'The Informal Sector in a Third World Economy : A Case Study of Calcutta, India', *Bulletin of Concerned Asian Scholars*, Vol. 17, No. 1, 1985; and Timir Basu, Calcutta's Sandal Makers', *Economic and Political Weekly*, August 6, 1976.
57. We draw from S.K. Goyal et.al., *Small Scale Sector and Big Business*, IIPA, New Delhi, February 1984; Bharat Bhushan, 'Ancillarisation : A New Production Strategy', *Business India*, January 16-19, 1984; John Harris, 'Character of an Urban Economy Small Scale Production and Labour Markets in Coimbatore', *Economic and Political Weekly*, June 5 & 12, 1982; Jan H. Van der Veen, 'Study of Small Industries in Gujarat State, India', Occasional Paper No. 65, Department of Agricultural Economics, Cornell University, May 1973; Hein Streefkerk, 'Too Little to Live on, Too Much to Die on Employment in Small Scale Industries in Rural South Gujarat', *Economic and Political Weekly*, April 11, 18 & 25, 1981; Michel Cartillier, 'Role of Small-Scale Industries in Economic Development Irrigation Pumpsets Industry in Coimbatore', *Economic and Political Weekly*, November 1, 1975; and T.S. Papola and R.S. Mathur *Inter-Sectoral Linkages in Manufacturing : A Study of Metal Engineering Industry in Kanpur*, GIDS, Lucknow, 1978.
58. Aditya Bhattacharjee, 'Small, Large Industries Concept of Economic Federalism', *Economic Times*, October 30, 1980.
59. Sanjaya Lall, 'Vertical Inter-firm Linkages in LDCs : An Empirical Study', *Oxford Bulletin of Economics and Statistics*, Vol. 42, No 3, August 1980.
60. A.N. Bose, *op.cit.*; Shaw, *op. cit.*
61. For example, consider the problem of estimation of the number of ancillaries. Suppose the official definition of an ancillary has the following components : the unit's upper size limit is more than a small unit's, it is paged at Rs. 45 lakhs worth plant and machinery. It should not be a subsidiary of, or owned or controlled by any other undertaking. It can produce parts, components, subassemblies, specialities like tooling, bearing, instruments, maintenance requirements or intermediates or auxiliary supplies

- or render services like sandblasting machinery, pressure cleaning, grinding, finishing materials packing, and packaging materials etc. It should supply or propose to supply at least 50% of its production to one or more parent firms. The parent firm can be large, medium or small-sized. The ancillary should register itself with its respective State Directorate of Industries. Now, the point is that such definition is very restrictive; it excludes units supplying less than 50% of their production, unregistered units controlled by large, medium and small firms, parent-cum-subcontractors, units making whole products on subcontract, subcontracting between larger firms or between a small parent and large subcontractor and so on. Also there are units such as those making commercial sulphuric acid and considered to be ancillaries by industrialists but their larger size does not correspond to the upper limit set by the official definition.
62. The magnitudes of estimates vary according to different ways of arriving at it, namely, value of subcontract or ancillary supplies as a percentage of total cost or total value of production or sales; or number of subcontractable or subcontracted items as a percentage of total number of parts and components at aggregated or disaggregated levels at different points of time.
 63. *The Hindu*, 'Towards a Modern, Viable Shipbuilding Industry', October 23, 1986.
 64. See FEII, *Seminar on Marketing Strategy for Small Engineering Industries*, September 20, 1978, pp. 8-9; V.V. Bhat, 'Decision Making in the Public Sector : Case study of Swaraj Tractor', *Economic and Political Weekly*, May 27, 1978; Ajay Kumar Rath, 'Local and Global Operations of Multinational Corporations : Unilever in India', *Social Scientist*, October 1982; A. Nag, 'Growth of the Small-scale sector-An Assessment', *Yojana*, December 6, 1978; J.C. Sandesara, 'Small Industry Production in 1982-83 A Quick Estimate', *Economic and Political Weekly* April 29, 1978; C.T. Kurien, 'Small Industry in New Industrial-Policy', *Economic and Political Weekly*, March 4, 1978, p. 460.
 65. See Murali Patibandla, 'Role of Large and Small firms in India's Engineering Exports', *Economic and Political Weekly*, May 28, 1988.
 66. Bhattacharjea, *op. cit.*
 67. APO (1979), *op. cit.*; *Business India*, 'What Ails India's Free Trade Zones', August 6-19, 1979 *Business World*, 'A New Boost to Free Trade Zones', February 13-26, 1984; K.K. Subrahmanian and P.M. Pillai, *Multinationals and Indian Exports*, Sardar Patel Institute of Economic and Social Research, Ahmedabd, 1978; Ashok V. Desai, 'New Forms of International Investment in India', NCAER, New Delhi 1983.
 68. A Group of Researchers, 'Contract Laour in a Steel Plant', *Economic and Political Weekly*, November 1986; Sujata Patel, 'Contract Labour and Public Interest Litigation. *Economic and Political Weekly*, December 7, 1983; Bharat Bhushan (1984), *op. cit.*
 69. Bhushan (1984), *op. cit.*
 70. 'FICCI, *Report on the Seminar on Prosperity through Balanced Industrial Development*, February 5, New Delhi 1970; Ashok Desai, *Market Structure and Technology*, NCAER, New Delhi, August 1982; Bharat Bhushan, 'Technology and Work Organisation in the Indian Electrical Engineering Industry', Ph.D. Thesis, University of London, September 1982, pp. 60-62 and *passim*; Andre Gunder Frank, 'Unequal Accumulation, Intermediate, Semi-peripheral and Sub-imperialist Economies', *Review* No. 3, Winter 1979; pp. 316-22.
 71. Nagaraj, *op. cit.*
 72. *Ibid.*
 73. *Ibid.* p. 45.
 74. A.K. Bagchi and N. Banerjee (ed.), *Change & Choice in Indian Industry*, CSSS, Calcutta 1981, p. 284.

114 *Business Analyst*

75. Nagaraj, *op. cit.*
76. H.P. Nanda, 'Factors Affecting the Growth of Ancillaries', *Lok Udyog*, March 1980.
77. For instance, Jairos Banaji, 'Accumulation and Exploitability—Some Notes for a Study of Industrial Capitalism in India' (Mimeo), Bombay, 1980.
78. R. Poornam, 'Ancillary Industry Development', *Lok Udyog*, March, 1980.
79. Bindoo Pandhi, 'The Ancillary Relationship—A Case study of a Public Sector Unit and Its Ancillaries' (Mimeo), No. date.
80. Bureau of Public Enterprises, *Guidelines for the Growth and Development of Ancillary Industries, by Public Sector Enterprises*, Ministry of Finance, Government of India, 1978; Planning Commission, *Third Five Year Plan : Progress Report 1961-62*, New Delhi, 1963, p. 127.
81. *The Hindu*, 'Ambattur Industrial Scene', August 20, 1985.
82. Patibandla, *op. cit.*
83. See Annabhula JCB, 'Japanese Subcontracting Systems', *Economic and Political Weekly*, February 25, 1989.
84. Annabhula JCB, 'Subcontracting in Electronics—A Case study of Keltron', *Economic and Political Weekly*, August 27, 1988 brings out similar conclusions through a case study in Kerala.