

Editorial Introduction — Industrial Restructuring in the Global Economy

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There is now widespread recognition by economists and industrial planners that, after some decades of historically unprecedented economic growth, the world economy is in a period of transition. The conditions which govern and shape *best-practice* industrial accumulation are changing, and new types of economic structures are now required for competitiveness to be achieved. This transition is reflected in a significant decline in both productivity growth and GDP growth in Europe and North America, a phenomenon which first emerged in the late 1960s. By contrast, in Japan and the Asian NICs it is reflected in a sustained high rate of growth. These changing conditions of industrial accumulation affect all economies — including developing countries — and require appropriate policy responses if economic decline is to be averted.

There have been a variety of attempts in the academic literature to record and explain this transition. Four sets of literature are relevant here. The first is that to be found amongst the French *Regulationist* school [Aglietta 1979; Lipietz 1987]. Their view is that any sustainable path of accumulation requires both a *regime of accumulation* (which balances consumption, savings and investment) and a *mode of regulation* (institutional forms and social patterns of behaviour which underwrite the regime of accumulation). Industrial restructuring became necessary because of changes in both the regime and mode of accumulation. The crisis of the 1970s is explained in terms of a fall in the ratio of productivity growth to capital intensification; thus the central conditions which had enabled the post-war regime of accumulation to occur were altered. This was complemented by a crisis in the mode of regulation, in which the Taylorist patterns of work organisation which had evolved over the decades since the 1930s were proving to be increasingly unworkable. They were no longer able to ensure the industrial harmony which allowed capital accumulation to continue satisfactorily.

The second set of theories attempting to explain the current structural transition is that provided by the *neo-Schumpeterian structuralists* [Freeman, Clark and Soete 1982]. They begin with the observation that industrial history has been characterised by 50-year, 'long-wave cycles'. These cycles are explained through the development and diffusion of a series of heartland

technologies. Each one of these technologies has pervasive applications across sectors, is seen to be in unlimited supply and is characterised by declining costs. They are of such significance that they lead to clusterings of innovations which propel the economic system into new trajectories of growth. In previous decades, these heartland technologies have included textiles, steel, railroads and the internal combustion engine. In the most recent period the conditions defining a heartland technology have been met by microelectronics technologies. These technologies find application not only in computers, military goods and consumer products, but more significantly in the control mechanisms of machinery. This allows not only for the more efficient use of labour but also for the production of better products, (manufactured with shorter lead-times) and the optimisation of inputs. In many cases the introduction of electronic machine controls also saves on the cost of capital. In the face of the competitive benefits resulting from the development and diffusion of microelectronics technologies, economies are forced to move on to a different path to accumulation. And because this new path involves a radically different set of production technologies and a new form of matching institutions, its diffusion is uneven.

The third explanation for industrial transition focuses on the exhaustion of the *mass production paradigm* [Piore and Sabel 1984]. This pattern of manufacture was based on the production of standardised commodities, using special-purpose machinery and a Taylorist division of labour. In recent decades it has come to be supplanted by a new paradigm of production, known as *flexible specialisation*. As the name implies, flexible specialisation overturns the industrial commitment to standardised products, and does so by producing smaller batches of differentiated goods through the use of general-purpose flexible machinery and new forms of work organisation. The mass production epoch — with its inexorable growth in scale — began to experience difficulties in the 1960s both because of internal factors (such as the growth of conflict at the workplace) and external factors (such as the oil-price rises of the early 1970s).

Finally, in our own work we have characterised the dominant trend as being one towards systemic integration, the transition from *machinofacture* to *systemofacture* [Hoffman and Kaplinsky 1988]. In

systemofacture the focal point of organisation moves from the individual unit (machine, plant or firm) to the integration between units. This is reflected in automation technology itself (where computer integrated manufacturing integrates previously discrete subprocesses), in interfirm relations (where arms-length relationships are supplanted by close relationships and coordinated production and product development) and in the interrelatedness of work-practices and factory organisation (where managerial orientations move to what has come to be called 'total productivity control'). In each case, the transition to systemic links requires significant changes in organisation and attitude so that the primary area of policy attention is first on social relations, and only subsequently on the adoption of the new flexible automation technologies.

The complexity and nuances of each of these different approaches often masks a considerable degree of analytical overlap. Moreover, each of these approaches is suggestive of broadly similar policies designed to facilitate a transition in industrial paradigm between the old order (often referred to generically as *Fordism*) and the new order (*post-Fordism*). There are two central and related differences between Fordist and post-Fordist patterns of industrial accumulation in all four of these analytical approaches.

First, the basis of competition of Fordism was one of price, and hence the primary focus in production was on cost reduction. Product homogeneity best enabled this competitive objective to be achieved, and the optimum location of production was at the site of least cost. Since labour costs were an important component of cost in many sectors, this was an important source of comparative advantage to LDCs, and helps to explain the rise of export-oriented industrialisation in the 1970s. By contrast, in post-Fordism, product characteristics and product innovation are the primary determinants of competitiveness, and instead of optimal location being affected by low costs, it is much more likely to be near final markets so that consumers can be served more effectively.

Paradoxically, it seems that the appearance of conflict between these two alternative objective functions is illusory. There is increasing evidence that an organisational strategy which focuses on product characteristics also leads to lower costs of production. The converse — that is, that a cost-oriented strategy leads to greater rates of innovation — is, however, not the case. Hence, it is argued, it is not a matter of post-Fordist production being relevant for the industrially advanced countries (IACs) and Fordism for the LDCs. Rather, post-Fordist production in its various forms is now inherently superior, and is of direct policy relevance to all economies.

There is also common agreement on a second major difference between Fordism and post-Fordism. This

concerns the role of labour in achieving competitiveness. Since price was the dominant form of competition in Fordism, labour was seen as a cost of production which had to be minimised. By contrast, in post-Fordism, innovation is the most important competitive attribute, and labour is seen as a primary resource. Thus whilst Fordism required the subordination of workers by management, to be most effective, post-Fordism requires a cooperative relationship on the shop-floor. From the point of view of LDCs this diminishes the competitive advantage of cheap labour and throws the emphasis on skill creation. Clearly, here, there will be a differential impact on different LDCs, with those in Asia (with a relatively skilled labour force) being favoured and those in Africa (possessing a cheap but unskilled labour force) disfavoured.

Of course, these issues are contentious and there are a number of elements of intense debate. For example, some argue that the new post-Fordism form of work-organisation involves a radical change in attitudes by management and that it is inherently favourable to labour; others see it as Taylorism in a new form, merely intensifying the exploitation of labour. There is also debate about the nature of the current thrust of technical change. Is it revolutionary in nature (and is microelectronics the key heartland technology) or does it merely represent a general speeding-up of technological change and a growth of knowledge-intensity in production?¹ And, perhaps most importantly, the theorisation of industrial restructuring depends in part on a series of sectoral studies and there are some observers who question the extension of these sectorally-specific conclusions to other branches of the economy.

The Arena for Policy

The Fordist pattern of production evolved over many decades. It was reflected in a variety of technological, organisational and institutional patterns including the philosophy of production organisation, the labour process, and the development of large-scale factories utilising inflexible machinery. It also inevitably permeated the strategic orientation of institutions — not only productive firms, but also the service sector and government itself. Many of these systemic features are now anachronistic, and restructuring to post-Fordist production is required on four major fronts. These are with respect to the adoption of:

- a) **Radical Technical Change.** The most important area of radical technical change is that involving the utilisation of microelectronics. Other emerging areas of importance include new materials technologies and biotechnologies. The intro-

¹ See the debate between Dore and Freeman in the *European Journal of Development Research*, Vol 1 No 1, 1989.

duction of these new technologies in both product and process serves to expand markets and satisfy consumer needs (including basic needs) through the timely introduction of new products, improvements in product quality, the re-innovation of mature markets and the rationalisation of production (thereby reducing product costs).

- b) **New Managerial Paradigms and New Work Practices.** The experience of innovation of these new production technologies in the industrialised countries has been that without matching changes in organisational orientation and work-practices, the benefits of innovation are difficult to achieve. More pertinently, it appears that in many sectors these organisational changes are low-cost, easily assimilable (including in LDCs) and make it more possible to meet local needs for basic goods at lower scales than those which were thought to be optimal during the Fordist era.
- c) **New Forms of Inter-Firm Relationships.** The Fordist era was characterised by fiercely independent and arms-length relationships between interrelating firms. This was true for relationships between firms involved in a chain of production (vertical integration), and between firms producing similar products (horizontal integration). The lessons emerging from many countries is that these previously adversarial relationships are no longer appropriate, and that new forms of cooperation are more efficient. These new forms include the phenomenon of small firms producing similar products and collaborating with each other to share indirect costs (such as marketing or design) and to allocate particular areas of specialisation; this pattern has been prominent in the so-called 'Third Italy'.² New forms of inter-firm collaboration also include close cooperation between component suppliers and assemblers in the design of new products. Many of these (vertically) collaborating firms may be of a large size.
- d) **New Forms of State-Industry Relations.** The experience of successfully industrialising countries suggests the need for new forms of state-industry collaboration, since market forces alone appear to be unable to generate the thoroughgoing restructuring which is now required. In part this requires the generation of a sectorally-based industrial

policy involving close collaboration between the state and the private sector. But it also appears that there is an important role for the district level state, and this has especially significant implications for larger LDCs.

It is sometimes argued that this transition from Fordism to post-Fordism is a policy challenge only for the industrially advanced economies (IACs). This is because the production of differentiated products in the IACs has come to be associated with the manufacture of higher value added goods. Yet there are reasons to believe that the association of post-Fordism with higher income products and Fordism with cheaper wage-goods is more an historical accident than an inherent feature of these two forms of production organisation. In part this coincidence has arisen because the transition towards post-Fordism has occurred in richer countries where consumers are more interested in income-elastic goods. But in part it also reflects the increasing prevalence of non-tariff barriers in trade which restrict import volumes through quotas. Clearly those countries with a fixed volume limit on exports (generally the more rapid adopters of post-Fordism who have reaped major competitive benefits and who have therefore increased their penetration of world markets) will concentrate on higher value products rather than the production of basic wage goods. This has been one of the primary factors leading to the marketing of 'designer products' manufactured in Japan, Italy, Sweden and the Asian NICs. The recent experience of Hong Kong's garment producers is particularly indicative for LDCs, since they have responded to export restrictions by moving upmarket into the production of design-intensive garments.

Yet, as argued above, there is increasing reason to believe that the introduction of many elements of post-Fordist practices will also increase the efficiency with which basic wage goods can be produced. This is especially true in relation to the adoption of new forms of organisation and work-practices, cooperation between small firms, and state-industry collaboration in identifying sectoral foci. The adoption of electronics-based flexible automation technologies is perhaps less relevant to the needs of LDCs, especially in the short- and medium-run.

Thus post-Fordism offers a range of new opportunities for LDCs. For example, it alters the perspective on the role to be played by small-scale industry. The gains arising from horizontal collaboration between small firms means that the small-scale sector need no longer appear as a 'residual' category of firms whose primary function is to mop-up unemployment. Rather it should be seen as a dynamic instigator of industrial development in many sectors and a major potential producer for world markets.

A further advantage for LDCs in this transition to

² It has also often come to be identified with the concept of 'flexible specialisation'. This is unfortunate, since if flexible specialisation is reduced to small firms involved in horizontal collaboration it loses much of its explanatory power and policy relevance. In addition, the sectors involved in the Third Italy (garments, shoes and furniture) tend to be associated with small batch production. The identification of flexible specialisation with these traditional sectors leaves little scope for the flexible mass production strategies of Japanese firms.

post-Fordism arises from the primacy of introducing organisational change. As has already been pointed out, it appears from the experience of the IACs that not only do major competitive gains arise from the adoption of new forms of organisation and work-practices, but without these, expensive investments in new flexible automation technologies are wasted. This means that if LDCs are able to adopt these new forms of social relations, they will be able to increase productivity without having to incur expensive investments in capital- and import-intensive embodied technologies. Moreover, it is possible that the old industrial countries are caught-up in Fordist attitudes and forms of organisation and that they will find it more difficult than many LDCs to make the transition to post-Fordist organisation. In this case there may be scope for what has come to be called 'leapfrogging'.

These potential benefits for LDCs arise in relation to production for both domestic and foreign markets. Insofar as import substituting industrialisation is concerned, the transition to post-Fordism appears to be associated with a significant reduction in production scale economies. If this is the case, it opens new possibilities of efficient production for domestic and regional markets, thereby circumventing the 'inevitable exhaustion of the easy stages of import substitution', a process frequently remarked on by industrial planners. In relation to production for foreign markets, post-Fordist production allows for the manufacture of better quality and more income elastic products, thereby allowing export receipts to be increased. Moreover, although the transition from Fordism to post-Fordism has best been documented for the industrial sector, there is reason to believe that it is also relevant to the provision of services, and to the very organisation of the state system itself. In this case, the adoption of these new principles of organisation will clearly have manifold implications for LDCs.

The transition to this new form of industrial organisation represents a radical change from past practices. (It can be easily recognised as a 'paradigm change' in the Kuhnian sense — see Kuhn 1970.) For this and other reasons, if this process of restructuring is left to market forces alone, the spread of technological diffusion will be slow. The state thus has a critical — and enabling — role to play in industrial restructuring, often supplementing (rather than substituting for) the operations of markets. Since innovation is required at a number of levels, this will often involve corporate and state initiatives at the plant, firm, sectoral, regional and national levels.

Study Seminar 123

In recognition of the policy challenge raised by this transition in the structure of industrial accumulation,

the Institute of Development Studies convened a six-week study seminar (number 123 in the IDS's short-course programme) to consider these issues. It was aimed at both LDC policy-makers and academics, and was designed to rapidly familiarise them with both the constraints and opportunities offered in this period of transition. SS123 took place between 12th September and 21st October 1988 and included participants from Brazil, Cyprus, India, Kenya, Korea, Mexico, Tanzania and South Africa (African National Congress). In addition, three colleagues also participated from Eastern Europe (two from Poland and one from Hungary) which in many respects is experiencing economic problems and policy challenges which are similar to those occurring in LDCs.

Two major changes were made to the structure of a previous version of this study seminar which had been run in 1985. First, the subject matter was widened to incorporate both the issues of flexible automation and changes in organisation and work-practices. (The earlier study seminar had concentrated almost exclusively on flexible automation.) And, second, the pedagogic content was altered. The earlier Study Seminar was predominantly comprised of state-of-the-art lectures on a large number of topics and a limited number of visits to British enterprises. By contrast, in SS123 each day was generally limited to a single issue. The morning was taken up with guided reading, and the early afternoon with group discussion. Then in the late afternoon the guest lecturer arrived and instead of providing a formal lecture, engaged in discussion with the participants. This mode of knowledge transfer — learning rather than being taught — proved to be a significant improvement over traditional patterns.

The most important stage of the seminar involved a week-long tour around enterprises in the UK which had pioneered the implementation of new forms of organisation and work practices, as well as the innovation of flexible automation technology. These included large and medium-sized firms, and British and foreign-owned firms. Participants were unanimous that these visits were the most important stage in the Study Seminar, allowing them to cement the knowledge gained in the abstract through reading and discussion.

In terms of subject matter, the first segment of the Seminar was devoted to a broad outline of industrial development, focusing on the recent transition from Fordism to post-Fordism. Thereafter the nature of electronics technologies, their incorporation in capital goods and emerging problems of software and systems integration were considered, before attention turned to new forms of organisation and work-practices. Case studies were also presented by innovative local firms and by specialists in the garments and automobile industries. In addition to factory visits

made in the first three weeks, the fourth week was spent visiting British enterprises. The policy-lessons learned from these visits for the participants' home countries were written-up in the final two weeks, interlaced with lectures and discussions of the policies adopted in other countries (such as Japan, Korea, the USA and the EEC). A selection of these reports is presented in this *Bulletin*.

Contents of this *Bulletin*

This issue of the *IDS Bulletin* comprises a selection of papers prepared by participants in SS123, trying to relate what they had seen and learnt in the UK to the economic problems which their own countries are facing. One set of papers examines the relevance of post-Fordism to Brazil and attempts to chart the progress of its introduction. The various authors make a number of points which are generally sceptical of the content of this policy agenda. Filho, Marx and Zilbovicius offer doubts on a number of points. First, they question whether Fordist organisation was ever relevant to the process industries, in which case the process of industrial restructuring is less dramatic than it may seem. Second, they point out that, contrary to the expectations of post-Fordism (and specifically the school of flexible specialisation), differentiated production is aimed at the global markets, and standardised 'Fordist' products for the international market. Third, (and perhaps somewhat contradicting the previous observation), the primary impetus for innovation arises from the requirements of producing for global markets. Fourth, the instability of the Brazilian economy makes any coherent set of firm policies difficult (see also the article by Lima). And, finally (a view shared by Carvalho and Schmitz), those elements of post-Fordist practice which have been introduced in Brazil, including the adoption of electronically controlled capital goods, are being utilised to reinforce the Fordist domination of the workforce.

The unanimity of these perspectives on Brazil is striking, but they nevertheless leave a number of questions unanswered. What of the productivity gains being recorded by Brazilian firms which have begun to introduce organisational reform? [see Hoffman and Kaplinsky 1989]. And perhaps more importantly, even if most Brazilian enterprises are introducing post-Fordist practices to reinforce Fordist social relations, is this a fruitful area of innovation, or merely a dead-end? For it is possible that these innovating firms will find it little easier to cope with competition from global (and Brazilian) post-Fordist production than they did by utilising classically Fordist forms of production.

This conclusion throws the focus of analysis on the political conditions under which post-Fordism can be

implemented. The Brazilian contributions seem to be arguing that under the existing political dispensation, post-Fordism cannot be successfully implemented.³ A similar viewpoint emerges from Kim's contribution on Korea. He believes that the older Fordist attitudes towards labour which underlay Korea's industrial development are now anachronistic, and that not only are new attitudes required of management towards labour, but so too is there a need for a comprehensive system of training and social security. For only when these socio-political changes have been adopted can Korea make the transition from seeing labour as a cost of production which has to be minimised to one which sees labour as a resource which should be maximised.

Sieckeris extends this discussion of upgrading labour force skills to the context of Cyprus, which has recently adopted an industrial strategy of flexible specialisation. He examines the requirement for general upgrading and for the training of multi-skilled and flexible labour. Costa's contribution is complementary, considering the financing environment in which a post-Fordist strategy can be pursued in Cyprus. In particular, he concentrates on the intangibility of competitive benefits (which are no longer confined to the quantity of output) and the absence of collateral in organisational reform, and concludes that an industrial restructuring loan facility may be an important instrument in promoting the transition to post-Fordist production.

The challenges of post-Fordist production are raised for Eastern Europe by Sipos and Sitarska. They show how at the level of technological development, Eastern Europe has played a pioneering role in flexible automation. Yet, outside of the military sector, this is not reflected in the diffusion of these technologies into production. The severity of the economic crisis has forced Poland into short-term crisis management which is particularly damaging to continued technological development and transfer. In Hungary it appears that elements of 'systemic failure' make it difficult not only to introduce the organisational reforms required in post-Fordism, but also to endogenise technological change (the so-called 'Schumpeterian motor') into accumulation.

Finally, the contribution by Gibogwe, Ngeno and Sisulu examines the relevance of post-Fordism to 16 poor sub-Saharan African economies which are grouped in the Preferential Trade Area (PTA). They are rightly sceptical of the relevance of flexible automation technologies to these foreign-exchange starved economies, and point to some of the difficulties involved in introducing the organisational changes required by post-Fordism. Given the assault by the World Bank, the IMF and other donor countries on the developmental state and on the

³ A similar perspective applied to South Africa can be found in Kaplinsky (1989).

provision of education to their populations, these countries face an uphill struggle. But this struggle is perhaps even more evident for the mastery of Fordist patterns of production which are not only capital intensive and of large scale, but through their inflexibility are often also associated with high levels of excess capacity.

Conclusion

The discussion of transition and industrial restructuring is at the moment almost entirely confined to the IACs and a limited number of NICs. Most LDCs find themselves reacting to a policy agenda set by the World Bank and other agencies which defines their problems in terms of state-failure and the necessity for introducing market-clearing prices. Yet, as can be seen from the experience of successful industrialisers, and as recounted in the literature cited above, this is a

wholly inadequate specification of the problems of industrial transition and dynamic comparative advantage.

The articles in this *Bulletin* represent the first stage of application of these ideas to non-NIC environments. By their nature — based as they are on a short exposure to the issues — they represent only a first shot at a response. They are tentative in nature and should be read more in terms of raising a research agenda than in defining a policy response. Yet they are suggestive of a much wider set of policies which have application not only in industry but also in services and probably in agriculture. Any period of transition — often reflected in conditions of economic crisis — represents both a set of dangers and a set of opportunities. If LDCs fail to respond to these challenges and only react to the policy agenda set by others, they are more likely to suffer the costs than to achieve the benefits of industrial transition.