ON THE CLUSTERING OF SMALL FIRMS

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1 INTRODUCTION[1]

Small firms have long occupied a major role in the development debate. The economic viability of small firms remains a key issue in that debate. The need to make progress on this question has rarely been more urgent. Great hopes are pinned on the contribution of small scale industry to economic recovery and income generation. Many national and international agencies have devoted an increasing share of their resources to small enterprise development, but are searching for ways of spending them. Who should be helped and how? There has been some useful analysis of the relative (in)effectiveness of different measures (e.g. Fuhr 1990; Liedholm and Mead 1987; Stewart 1989; Teszler 1989), but the practitioners' work remains hampered because the underlying issue of the viability of small firms remains unclear. And this issue is central even where the prime concern is poverty alleviation (rather than growth): small scale activities are only worth supporting if they can be economically viable. Viable here means able to grow or at least survive, keeping in mind that standing still is rarely sufficient for survival.

Even though the volume of research on small enterprises has grown enormously over the last two decades — much of it policy driven — the findings on the question of economic viability are meagre. At the risk of exaggerating this dearth, the results can be summed up in two conclusions:

a Contrary to early views that small-scale industry would diminish in the process of economic growth, advanced and less developed countries continue to have a sizeable small-firm sector.

b Generalisations on the viability of these small firms are not tenable.

The main method of researching the small enterprise sector has been cross-section surveys. In view of their limited results, some authors have advocated branch-specific studies or the subsector approach (Boomgard *et al* 1991; Schmitz 1982). Studies which adopted this approach have been useful in identifying bottle-necks and leverage points for policy intervention, but threaten to blunt the search for general principles, broader categories and theorisation.[2]

The purpose of this paper is to stimulate this search. In trying to find a way forward it would not be useful to take on small scale industry as a whole. The world of small scale producers encompasses too many different situations. For an initial grouping I propose to distinguish between dispersed and clustering producers. Section 2 gives the reason for this distinction. Section 3 shows briefly how and why industrial clustering was dealt with in the recent literature on industrial organisation in advanced countries. It also indicates why this literature is relevant for LDCs. Section 4 lists what are considered to be the main questions in further research in LDCs. Some of the main conceptual problems for such research are raised in Section 5. And finally, Section 6 makes suggestions for empirical work on clusters of small firms in LDCs.

2 DISPERSED VERSUS CLUSTERING FIRMS

My starting point is that it is useful to distinguish between:

a Geographically and sectorally **dispersed** producers. Most rural small industry falls into this category. The village blacksmith or carpenter are the archetypal examples. Their growth prospects essentially depend on demand from local agriculture. The scope for division of labour and hence for economies of scale is small.

b **Clusters** of small enterprises. Clustering is meant here to embrace both geographical and sectoral concentration. In contrast to the previous case, there is wide scope for division of labour between enterprises and hence for specialisation and innovation, essential for competing beyond local markets. There is also substantially greater scope for collective action.

In practice, small producers do not always fall neatly into these categories; the boundaries may be unclear, in some cases there may even be a continuum. However, this difficulty does not alter the essential point that clustering opens up efficiency and flexibility gains

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[1] Helpful comments on an earlier draft were provided by John Humphrey, Bernard Musyck, Khalid Nadvi, Juan Such, Roberta Rabellotti and Jesper Rasmussen.

[2] Indeed, as pointed out by Fitzgerald (1989), the undertheorisation on small scale industry is particularly striking if one looks at the comparable field of peasant studies of which Ellis (1988) provides an excellent overview.

which individual producers can rarely attain. The concept of collective efficiency helps to capture these gains.

However, as will be stressed later, such gains do not necessarily result from clustering. A group of producers making the same or similar things in close vicinity to each other constitute a cluster, but such geographical and sectoral concentration in itself brings few benefits. It is, however, a major facilitating factor, if not a necessary condition, for a number of subsequent developments (which may or may not occur): division of labour and specialisation amongst the small producers; the provision of their specialised products or operations at short notice and at great speed; the emergence of suppliers who provide raw materials or components, new and second-hand machinery, and spare parts; the emergence of agents who sell to distant national and international markets; the emergence of specialised producer services in technical, financial, and accounting matters; the emergence of a pool of wage workers with sector specific skills; the formation of consortia for specific tasks (e.g. exporting) and of associations providing services and lobbying for its members. The more of these elements that are present, the more real the notion of collective efficiency becomes.[3]

Even where a collective capacity to compete, adapt and innovate has emerged, it is important not to expect an island of unity and solidarity. Collective efficiency is the outcome of an internal process in which some enterprises grow and others decline. In order to understand this process it is useful to distinguish between vertical and horizontal inter-firm relations. As regards the **vertical**, firms buy products and services either through the market or subcontracting arrangements. The nature of the relationship can range from exploitation to strategic collaboration. The scope for conflict is greatest at the **horizontal** level, because producers are often in plain competition for orders. However, competition does not exclude joint action for solving specific problems, particularly in pre-competitive areas such as the provision of sites, services, training, etc. Thus, the notion of collective efficiency does not deny conflict or competition amongst enterprises in the cluster. On the contrary, clustering makes the market more transparent and induces competition. Equally important, it facilitates collective action to tackle common problems, either directly through producer associations or indirectly through local government.

3 THE RELEVANCE OF THE EUROPEAN EXPERIENCE

The idea that there are gains in clustering is old hat in industrial economics. It can be traced back to Alfred Marshall's analysis of industrial districts in Britain. In his *Principles of Economics* (first edition, 1890) Marshall stressed the economies which 'can often be secured by the concentration of many small businesses of a similar character in particular localities' (eighth edition, 1920:221). The inspiration for this article, however, comes from the recent success of small firm industrial districts in Europe, particularly the Third Italy.[4] The strength of small scale industry in these districts cannot be grasped by analysing individual firms. Their strength lies in their clustering and cooperative competition. As a result there is a collective ability to adapt and innovate. Italian economists such as Becattini (1989, 1990) and Brusco (1986, 1990) made decisive contributions to understanding the success of such small firm industrial districts.

The international recognition of their competitive strength was greatly enhanced by the flexible specialisation literature, especially Piore and Sabel (1984). Elsewhere I have commented on the enormously refreshing influence of their work (Schmitz 1990). The trouble is that there is no clear definition and hence much of the debate on flexible specialisation suffers from confusion over what it means. As suggested in the introduction to this Bulletin, this problem is hard to solve, because flexible specialisation covers different forms of industrial organisation which defy a common definition. Disaggregation is necessary. A useful step is to distinguish (in line with Sabel 1986) between the small firm variant and the large firm variant. This article, and indeed the entire Bulletin, focuses on the small firm variant, where flexible specialisation results from the clustering of small firms and a strong inter-firm division of labour.

Having distinguished between these different forms of flexible specialisation, one needs to ask what lies behind the success of the small firm variant. Here the notion of collective efficiency may take us a small step further, because it captures the essential point that economic viability can neither be understood nor enhanced by focusing on individual firms.

What is the relevance of all this for LDCs? While small firms in the contemporary European industrial

[3] Clustering, especially geographical proximity, is less critical for large firms because they can internalise many functions, for example, employ personnel for repair or marketing.

[4] See the collections of articles in Goodman and Bamford 1989; in Pyke, Becattini, and Sengenberger 1990; in Pyke and Sengenberger 1992; and in Zeitlin 1989. The introduction to Pyke and Sengenberger (1992) provides an excellent overview of research and policy issues that come out of the European debate on small firm industrial districts.

districts often use advanced technologies, the emergence of collective efficiency is not conditional upon the use of hi-tech. The gains from collective efficiency, I would argue, are equally significant for incipient industrialisation. Vertical and horizontal links between clustering firms induce the diffusion of know-how and skills, reduce technological discontinuities and increase the capability to respond to changes in the market.

These issues are explored in a previous paper which examines the relevance of the European experience for LDCs in greater detail (Schmitz 1990). Some of the main conclusions are:

a In LDCs, even more than in advanced countries, competitiveness requires the capacity to adapt to disruptive circumstances.

b Clusters of small firms are conducive for the development of such capacity due to the potential for collective efficiency and flexibility.

c However, where firms cluster around certain processes and products fast adaptation and innovation do not necessarily follow.

d The large labour surplus in most LDCs induces competition based on low wages rather than competing-by-innovating and inter-firm cooperation.

e Amongst the least understood questions are how cooperative competition is strengthened by socio-cultural factors and how collective efficiency can be fostered through public policy.

These conclusions emerge from an initial review of existing studies. The remainder of the article is concerned with how to investigate the economic and institutional conditions which enhance the collective efficiency of small firms.

4 RESEARCH QUESTIONS

The previous section of this article mentions the dynamic growth of small firm industrial districts in Europe. The overall question for further research is whether such small firm growth has also occurred in LDCs and what the conditions are which either produce, modify or prevent such growth. If one breaks this down, a number of sub-questions arise, such as:

— Is the cluster merely a multiplication of producers making similar products or has specialisation and inter-firm division of labour developed?

— Do these vertical links include a network of suppliers (of raw materials, equipment, spare parts, and repair services) and of purchasers (of intermediate or final products)?

— Are there examples of horizontal cooperation and how significant are they?

— How have local labour markets influenced competitive strategy and market entry?[5]

— How have socio-cultural factors influenced exit costs[6] and inter-firm relations?

— Has there been quantitative growth (increase in output) and qualitative growth (improved product quality, product variation and innovation)?

— Can one distinguish between different phases in this growth process?

— How has this growth been influenced by national macro-economic policies and legislation?

— What has been the role of local institutions (public and private)? If they have played a negative role, what is required to turn them into institutions enhancing small-firm development effectively?

The above is far from an exhaustive list, but it includes some of the main questions to be addressed in future research. Investigating these questions requires case studies of small-firm clusters. The steps required for the empirical part of such work are outlined in Section 6. There are, however, a number of conceptual matters which would need to be addressed beforehand. Some of the most important and trickiest are raised in Section 5.

5 CONCEPTUAL HURDLES

It was suggested above that a **cluster** has two defining characteristics: geographical agglomeration and sectoral specialisation. Tensions could arise here between the geographical and the economic part of the definition. For example, what about a firm (say a supplier of inputs) that is not geographically close but plays an important role in the sector? While such a firm is not part of the cluster it would clearly need to be included in the research. Reality is often too messy to fit neatly into our categories. In such cases it is important to remember a lesson from the research on the informal sector (Moser 1984): more important than boundaries are the connections between economic agents.

[5] Elsewhere (Schmitz 1990) I have discussed various ways in which local labour supply influences competitive behaviour and market entry.

[6] The term 'exit costs' is used here in Rasmussen's sense (inspired by Hirschman; see Rasmussen in this Bulletin). Inter-firm exchange or cooperation require trust. Such inter-firm relations are less likely to develop if the penalty for not keeping an agreement or deal is small. For example, in ethnic minority groups the exit cost for a small entrepreneur is high; not honouring a business commitment means not only being shunned by business partners but also by the social group. See also Colletis, Courlet and Pecqueur (1990) who stress the importance of reciprocity as a regulatory mechanism in local industrial systems.

Systematic differences in connections make for different types of clusters. It is probably useful to distinguish between **a** hierarchical clusters, for example where a large enterprise farms out parts of the production to small enterprises and thus orchestrates the division of labour, and **b** non-hierarchical clusters, in which equals compete or cooperate. Ines Smyth's Indonesian case study in this Bulletin shows a mixture of both.

Clustering is an important but in the end merely subsidiary category used in this paper. It is introduced to mark the contrast to dispersed small enterprises. This distinction is thought to be important because the viability issue poses itself differently, at least this is the proposition put forward above: clustering facilitates efficiency and flexibility rarely attainable by dispersed small firms. Hence collective efficiency is the central concept in this paper. However, further work needs to be done on the definition of collective efficiency, in particular on how it relates to Marshall's distinction of internal and external economies.

This conceptual work would need to distinguish between:

a planned (consciously pursued) and

b unplanned (circumstantial) collective efficiency.

b overlaps substantially with Marshallian external economies and includes both 'real' and 'pecuniary' economies. The former affect the actual conditions of production while the latter affect the monetary terms on which they take place, that is, the prices of inputs and outputs. **a** refers to collective action to pursue common interests. Action could emanate from public institutions, for example, regional or local government agencies. Or it could come from private bodies such as business associations. Such bodies in turn can be of two types: paternalistic (controlled from above) or participatory (controlled by members).

Since much of the research on small scale industry is policy driven, the question of how to bring about collective efficiency inevitably occupies a central place. In order to deal with this question it seems important to distinguish between different stages in the development of a cluster. The European experience suggests that public and private institutions have helped, but that they only came into play at a certain stage in the development of local industry (Brusco 1990; Schmitz 1992). Indeed, more generally, it may be useful to distinguish between at least two stages: a stage of early growth which is largely spontaneous (even though shaped by history) and a second stage with deliberate institutional involvement.[7] Associations and local government can probably only be expected to play a major role in a second stage, once there is a critical mass of industrial activity.[8] However, collective action does not necessarily occur with the growth of local industry. Fiona Wilson (in this Bulletin) suggests that the growing differentiation in Mexican knitwear clusters led to a breakdown of collective interests.

To sum up, our conceptual apparatus for analysing the viability of small firms remains poor, but a few distinctions can be made to disentangle the issue. Contrasting dispersed to clustering producers is merely a first step. For the latter one needs to distinguish between different types of clusters and stages of their development. The scope for both planned and unplanned collective efficiency varies with the type and stage of the cluster. The next section outlines what empirical work is needed for a better understanding of the economic and institutional conditions enhancing the collective efficiency of small firms.

6 METHODOLOGY IN EMPIRICAL RESEARCH

It follows from the previous sections that the research would not focus on any type of **small** scale enterprise because it is not the size dimension as such that counts. What is of interest is a type of industrial organisation in which **collective efficiency** can emerge and grow.[9] Hence the proposal to initiate case studies on **clusters** of small firms. But it needs to be borne in mind that clustering does not necessarily lead to collective efficiency.[10]

Each case study would be a research project in itself not least because statistics on small firm economies tend to be poor. Their development would have to be reconstructed using a variety of different research methods in order to weld together a true picture of their performance and of the conditions which shaped it.

Fieldwork would need to proceed in four stages: the **first** stage would consist of a questionnaire survey from which the contours of the small firm economy can be drawn in quantitative ways. Questions would be few

[7] For the case of Europe, especially Italy, the issue of typologies has been addressed most explicitly by Garofoli (1991). See also Colletis, Courlet and Pecqueur (1990).

[8] Small firm incubators however can be a useful measure at an early stage.

[9] The advanced country literature tried to capture this in the concept of flexible specialisation (Piore and Sabel 1984) but for purposes of empirical investigation this term has its problems. It contains elements which in themselves need to be subjected to research: for example, the existence of institutional forces which steer competition towards innovation. A similar problem arises with the term 'industrial district'. In some Italian contributions (for example Becattini 1990), success was practically defined into the term.

[10] Conversely, one cannot rule out that collective efficiency develops amongst geographically (not sectorally) dispersed producers. This is, however, less likely in the case of **small** firms.

in number, simple and closed. The **second** stage would consist of in-depth case studies of selected firms using a structured but open-ended interview schedule. The purpose of the **third** stage would be to assess the 'view from below', as expressed by the small producers, against information from other sources. Data from the small producers themselves are necessary but rarely sufficient. Additional information is needed from large firms which compete with or sub-contract small firms, from technology suppliers (producers of new machinery, repair shops), from firms which supply the raw materials (producers of these materials or intermediaries), from suppliers of credit, and from agents who buy the small firms' output (compare Boomgard *et al* 1991; Moser 1984; Rasmussen 1992 and Schmitz 1982).

Understanding how a cluster works and develops is not just a function of the number of enterprises covered but also of the way the information is collected; thus the producers interviewed (small and large) should be conceived of not just as 'sources of data' but also as 'informants on what is going on in the industry' (Peattie 1982). Interviews with respondents who have key positions in the industry, for example suppliers of materials, prove particularly useful since they tend to have a good overview. Particularly, in situations where the sampling universe is unknown, interviews with such 'key informants' are important.

The three stages outlined above focus on producers and related firms. A **fourth** stage would concentrate on **institutions**, both private (for example sectoral associations) and public (local, regional and central government agencies), as well as foreign donor agencies. These four stages need not necessarily be carried out in this order.

Finally, a point made earlier about the delimitation of the research is worth repeating. While the focus in the fieldwork is on enterprises in the cluster and local institutions, it is essential that outside actors who have a critical influence over the development of the cluster are included. Examples are a competitor in another region, a department in central government or an overseas buyer. The sectoral connection has priority over geographical proximity.

7 CONCLUSION

This paper is concerned with the viability of small scale manufacturing in LDCs. Its purpose is to put forward a few categories which may help to disentangle the issue and to suggest a line of research.

The starting point is the distinction between dispersed and clustering producers, since there is a substantial difference in the dynamic governing their viability. Clustering facilitates gains in efficiency and flexibility which are rarely attainable by dispersed small firms. The concept of collective efficiency is put forward to capture these gains.

The Third Italy provides the best known example of small firms attaining international competitiveness in this way. There is, however, a problem in making the Third Italy the yardstick of what has been achieved elsewhere or the model that others should follow. The Italian small firm clusters themselves have gone through different stages and may yet undergo further changes.[11] This underlines the need, in future research on LDCs, to distinguish between clusters of different types and at different stages. The initial distinctions put forward here are between clusters which are hierarchical and those in which equals compete or cooperate; and between stages in which collective efficiency comes about spontaneously and in which it results from planned action.

Such distinctions may also help to bring some realism into the current debate on the role of local and regional government in industrial policy. This debate is driven by the desperation with which poor regions observe those which are prosperous. Government or government sponsored institutions cannot create an industrial organisation which competes on the basis of collective efficiency. However, once private initiative has led to a minimum concentration of industrial activity and know how, they can play an important part in helping local industry to innovate and expand.

[11] For example, Prato, one of the success stories of the 70s and 80s, is struggling to avert decline in the 90s (based on discussion with the Mayor of Prato).

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