

**SME Competitiveness:
The Power of Networking and
Subcontracting**

Albert Berry, Ph.D.

Washington, D.C.
January 1997--No. IFM-105

Albert Berry has a Ph.D. in Economics from Princeton University and is a Professor of Economics at the University of Toronto, Canada. He has conducted extensive research on Small and Medium Enterprises. The author would like to express his gratitude to Frank Pyke for his useful comments on the pervious draft of this paper and Juan José LListeri not only for his comments but also for his guidance and support through all phases of the process. Remaining errors and misinterpretations are his own responsibility and do not necessarily reflect the position of the Inter-American Development Bank.

Abstract

Effective participation of SME in a developing economy has many advantages, as demonstrated in the successful development of such countries as Taiwan and, earlier, Japan. While there has been some progress on other aspects of SME support (especially credit provision), "linkage-inducing" policy is for the most part a new and experimental area. There is ample evidence that both large-small and small-small linkages are important in Latin America, albeit less so than in the "model" cases of East Asia. The challenge for policy in this area is to understand the source of potential payoff to increased inter-firm cooperation, the contexts which facilitate it, and the potential instruments to induce it. The theoretical grounds for suspecting that market forces will not on their own generate a near-optimal level of cooperation are strong, since socially desirable cooperation often requires either high levels of interpersonal trust or very low transactions costs or both. The detailed analysis of cases where it appears that policy instruments used have been effective (i.e. "best practices" implemented) is important to sort out what works or might work in Latin America.

The typical economic logic of large-small subcontracting lies in the fact that large firms can do some things better than small ones but other things less well. Horizontal cooperation among SMEs contributes to "collective efficiency"--the competitive advantage derived from local external economies and joint action. The benefits from trade between--or cooperation among--small firms are related in part to the fact that the most efficient small firms are usually those that restrict the range of functions they perform, relying on market transactions to supply the other required products and services. Often the main pre-requisite for a dense subcontracting system is better performance on the part of potential subcontractors. This is one of the requirements of successful clusters of SMEs as well. Public policy is important both in the provision of relevant general and technical education and of technical assistance, short

courses and the like. The successful SME countries of East Asia, beginning with Japan, have strong technical support systems to complement large-to-small technical assistance and to raise the efficiency of smaller firms more generally. Latin American countries need such networks. Most existing programmes are too new to permit a judgment of whether they will soon bear significant fruit. Several types of support for inter-firm cooperation involving SMEs are solid candidates for "best practice" status. These include: (i) support for local and international fairs; subsidies to foreign buyers to visit fairs, producers' groups etc.; (ii) support for relevant business associations--sometimes umbrella SME associations, sometimes industry-specific ones, often local ones; (iii) practically oriented support for large-small linkages, e.g. along the lines of the SEBRAE programme in Brazil; (iv) SME network support programmes, of which the Danish Network Cooperation Programme and Chile's PROFOs are good examples; (v) support for education and training institutions and other types of infrastructure which could contribute to potential or actual groups of SMEs; (vi) encouragement of SME suppliers through public sector purchasing (e.g. the Cear program); (vii) subcontracting exchanges; though it is not clear whether they will often have a large payoff, their modest costs makes them a logical component; (viii) collection and organization of information on the important SME sectors, relationships among firms, the leaders in each sector and region; serious monitoring of the programmes which are put into place.

As for how policies should be implemented, two points deserve comment. First, support should be provided on a group basis where possible, in order to increase the chances of inter-firm cooperation. Second, the modus operandi of support systems and their components should be one-shot or time-limited when possible in order to avoid the creation of permanent bureaucracies, at least until the benefits have been shown to be clearly satisfactory. Thus, for

example, subsidies for participation in any given network should normally be time-limited. Effective policies to strengthen inter-firm linkages will thus, for the most part, be both complementary to market forces and "light touch" in character.

Contents

Concepts and Distinctions	1
The Economic Benefits of Interfirm Cooperation	2
Background Factors and Conditions Affecting the Potential for Gains from Interfirm Cooperation	
Factors Underlying the Development of Effective Horizontal Cooperation Among Small Firms and of Clusters	6
Frequent Features of Clusters	
Factors Underlying the Intensity of and Payoff to Horizontal Cooperation	
Matching Policy to Context and Institutions	
Who are the Important Institutional Actors and What Can they Do?	
Factors Underlying the Development of Subcontracting and Other Interactions Between Large and Small Firms	16
Inducing Vertical Subcontracting: The Korean Way	
Factors and Policies for Vertical Subcontracting	
Strengthening of Potential Subcontractors	
Instruments to Faster Large-Small Linkages	
The Tax and Subsidy System: Formalization	
Dispute Settlement	
Overall Policies to Improve SME Inter-firm Linkages	21
The Relevance of Overall Industrial Policy as Context for Deepening Interfirm Cooperation	
The Importance of the Trading Function; Support for Trade Fairs and Trading Companies (Empresas Integradoras)	
Support for Business Organizations	
Training Institutions and Service	
Multi-Pronged Approach to the Encouragement of SME Linkages	24
Lessons for the IDB: Areas of Possible Involvement	26
Assistance in the Development of SME Network Support Programs	
Assistance in the Development of Support Systems for Large-small Linkages	
Strengthening Local Training Institutions	
Other Specific Institutional Improvements	
Improving Information Systems	
Bibliography	29

Concepts and Distinctions

The effective participation of Small and Medium Enterprises (SME) in a developing economy has many advantages, as demonstrated by the successful development of a number of economies with vibrant SME sectors most notably Japan and Taiwan. The entrepreneur is the central figure in the success of SME firms, hence entrepreneurial development is closely tied to SME strength.

Another determinant, at least in many contexts, is the effectiveness with which SMEs interface with large firms (often via subcontracting arrangements) or with other small firms. It is therefore important to consider how to take full advantage of these types of interactions. While there has been some progress on other aspects of SME policy (especially credit provision), it is generally recognized that “linkage-inducing” policy, is for the most part and in most places, a new and experimental area, with considerable potential.¹ Precise numbers are lacking, however, there is ample evidence that both large-small and small-small linkages are important in Latin America, albeit less so than in the “model” cases of East Asia. Nadvi and Schmitz (1994) conclude that clustering is common in many developing countries, and that some clusters in Latin America and Asia have attained great depth. Various studies have

¹ Spath (1993, 21) cites various reviews in support of her opinion that most of the special incentives and support programmes for SMEs financed by the international agencies have tended to be isolated interventions with significant limitations. She concludes that “Direct intervention stands a chance of success only if it is grounded in a general economic environment favorable to small firms.” How favorable that environment is may be judged directly by an appraisal of relevant macroeconomic and other policies. The presence of clusters may also be thought of as a signal that such conditions are at least minimally present, with the implication that other support steps have a good chance of paying off.

pointed to the considerable frequency of subcontracting in Latin American countries.²

The challenge for policy in this area is to understand the potential payoff to increased interfirm cooperation, the source of that payoff, the environments that facilitate it, and the instruments that may induce it. The theoretical grounds for suspecting that market forces will not generate a near-optimal level of cooperation on their own are strong, since socially desirable cooperation often requires either high levels of interpersonal trust or very low transactions costs or both. The detailed analysis of cases where it appears that policy instruments used have been effective (i.e. “best practices” implemented) is important to sort out what works or might work in Latin America.

The purpose of this document is to suggest ways (i.e. identify best practices) to increase the contribution of interfirm cooperation to the efficiency of industrial sectors, and to identify how IDB programs and projects may facilitate such cooperation.

Which instruments may be wielded effectively to promote desirable linkages clearly depends on, among other things, the competence of the public sector. The range of possible instruments is greater in so-called “hard states” (those capable of substantial economic management without extensive bureaucratic inefficiency or leakages)³ than in “soft states” (which do not meet those qualifications). Most Latin American countries probably fit somewhere in the middle of this spectrum of public sector capacity, with

² For example, Berry and Escandón (1994) for SME exporters in three Colombian sectors-garments, leather footwear and metal products; Ruiz (1995) for Mexico, and Kagami (1993) for Brazil.

³ This distinction is employed, among others, by authors in the USAID Employment and Enterprise Policy Analysis Project (EEPA), such as Young (1994).

some of the lower income ones towards the soft side.

The concept of *Best Practices* is especially useful when a certain way of doing things produces superior results in a wide variety of settings. There are likely to be great benefits to identifying and disseminating such practices, since what is very successful or productive for one firm, industry or region, will tend to be very successful or productive for all or nearly all others. Unfortunately, though there is persuasive evidence that interfirm cooperation can raise economic efficiency and competitiveness, it is harder to sort out the interventions that help to increase such cooperation. Further, the importance of productive SME interface with other firms, how it is likely to happen, the form it takes, and the policies most likely to promote it are likely to vary by setting and by level of market development in the economy. The concept of best practice must therefore be understood in this constrained sense. Accepting that different settings will imply somewhat different optimal practices, it is still desirable to

distinguish a moderate number of settings between which best practices may differ significantly, but within which it varies little.

The basic distinction in the analysis of best practices in the promotion of cooperation and support for interfirm cooperation is between large firms and small firms (mainly vertical subcontracting), and cooperation among small firms. The form that prevails and the other features that characterize the cooperation vary by industry, reflecting differences in technology, industrial structure, etc. Though this dichotomy provides a useful starting point, the range of possible patterns of cooperation is wide. Humphrey (1995, 149) emphasizes that, although stylized models (like certain versions of the Japanese system with its high density of subcontracting) are a helpful reference point in the consideration of new industrial organizations in developing countries LDCs, the key is to understand the dynamic processes whereby firms and sectors are transformed to create the system that finally emerges.

The Economic Benefits of Interfirm Cooperation

The strong growth and distribution performance of the East Asian countries, beginning with Japan, but also including Korea, Taiwan and others, suggests that the benefits of interfirm cooperation and linkages can be large. In Italy, the region most noted for its industrial districts, Emilia Romagna, had the fourth largest increase in per capita income (14%) in the country between 1963 and 1984. (Pyke, 1995, 6).⁴

The typical economic logic of large-small subcontracting lies in the fact that large firms can do some things better than small ones but other things less well. The commerce between large and small firms can at one end of the

spectrum be arms-length, involving nothing more than the purchase or sale of goods and services. Where the smaller firms need assistance for such a mutually beneficial exchange to occur, other elements will be involved. The smaller firms' limitations, which make the assistance and collaboration of the larger partner important, typically fall in the areas of access to technological information, and guidance on quality control; access to finance; assistance in purchase of materials or equipment, in workplace organization, in financial management or in other determinants of effective performance; and market stability (security of demand over a period of time).

Horizontal cooperation among SMEs contributes to "collective efficiency" the competitive advantage derived from local external economies and joint action. Schmitz (1995, 530) emphasizes the importance of both of these

⁴ The industrial district model seems generally to have been associated with favorable employment growth in the 1970s and 1980s in Italy, Germany, Spain, Denmark and other countries (Pyke and Sengenberger, 1992), though some of these regions now appear to be running into trouble.

aspects, noting that “external economies are essential to growth but not sufficient to ride out major changes in product or factor markets; that requires joint action.” The advantages of cooperation among SMEs is usually derived either from economies of scale (in purchases, sales, investment in infrastructure, dealing with the public sector, etc); the benefits of dissemination of information (on technology, on markets, etc); or the benefits of division of labor, which can best be reaped when transactions costs are low. Collective efficiency also depends on adequate infrastructure, training facilities and public services.

The determinants of how effectively information flows among firms and of their ability to pursue interests collectively are very important. In some cases effective horizontal cooperation is the basis for more effective interaction with other firms, for example, willingness to act as co-fiduciaries allows a group of small firms to borrow from credit institutions which would consider lending to the individual firms too risky. Similarly a group of small firms might be able to fill an order from a large buyer, whereas individually they would be unable to do so.

The benefits of trade or cooperation among small firms stem from the fact that the most efficient small firms usually restrict the range of functions they perform (Mead, 1992), relying on market transactions to supply needed products and services. This, however, requires that the enterprise master a whole other range of management skills and makes the contracting mechanisms and the firms' ability to make use of them very important. Transactions costs among firms can be lowered in many ways, among them: by improving the flow of information, by creating risk-reducing “guarantee” mechanisms and by creating a more trusting society. Technological improvement can be fostered by the provision of adequate incentives and creation or the improvement of diffusion mechanisms, for instance.

Effective cooperation pays off in some combination of lower costs and the resulting higher competitiveness, higher profits and/or wages, better working conditions, greater capacity to respond quickly leading to increase

more competitiveness in industries where demands or styles tend to change quickly, and lowered risk. The security which an effective cluster provides involves not only the safety net mechanisms whereby more fortunate members of the cluster may help those currently in difficulties, but also the often noted resilience and sustainability of the district as a whole, a resilience based both on built-in flexibility to alter factor payments, and work conditions, and the defense provided by social solidarity and the desire to overcome problems.

The dynamics of interfirm cooperation are clearly varied (see below), and not yet well understood. Its character often changes substantially over time and in response to changing conditions and challenges. Cooperation may be particularly important during certain phases of a country's industrial evolution. Even if it is not a permanent feature of industrial structure it may play a pivotal role in economic progress. The test of the overall value of clusters and the cooperation on which they are based involves both their contribution to healthy growth (while they are themselves an important component of the industrial structure), and their legacy after they cease to be directly important (if this is indeed what happens).

Background Factors and Conditions Affecting the Potential for Gains from Interfirm Cooperation

Some settings encourage productive interfirm cooperation more than others. Relevant considerations include the complementary or competitive relationship among firms of different sizes; the degree of to which firms or outward-oriented, the macroeconomic setting and the degree of social cohesion.

Complementarity or Competitiveness Across Firm Sizes.

Complementarity between SME and large enterprises (LE) creates the possibility of useful vertical linkages. Cases in which the two groups compete with each other may make cooperation between small firms particularly important while situations in which LEs are absent may call for a

different sort of small-small cooperation. In some settings there is both complementarity and competition with LEs, albeit in different activities. Situations in which SME efficiency can be increased by specialization raises the payoff to cooperation whether with other SMEs or with LEs.

Outward-orientation.

Gains from interfirm cooperation tend to be greater and that cooperation easier to achieve when the cooperating firms sell their product(s) outside the region and/or outside the country. When the demand for a product is inelastic (so that the cost savings associated with improved levels of efficiency are mainly passed on to the consumer), the incentive for firms to undertake cost-reducing improvements is curtailed. When increased efficiency raises a firm's market share, the total gains to all producers are likely to be less than the individual firm's cost reduction, making cooperation less attractive. When the demand facing a group of producers is elastic and collaboration and/or imitation generalizes the gains to any cost-reducing firm, then the total gains can be much greater. An elastic demand both raises the payoff to imitation and reduces the incentive of the first-mover to prevent copying by others. This would seem to be a key ingredient in the fact that "clustered" firms usually sell in a large market.

In light of current trends toward greater openness, special attention should be given to those types of interaction most likely to work in relatively open economies. Since new international customers often have higher standards than national ones, it can be important for local institutions to help firms to improve their production and design capabilities. A special challenge in Latin America comes from the fact that, in the past, most manufacturing exports were produced by large firms in relatively capital intensive ways. As trade becomes a more important share of GDP there is a danger that its weak employment creating performance will accentuate the worsening income distribution

which has afflicted many countries of the region in recent years. The experience of Taiwan and Hong Kong, and even more that of Korea, suggest the value of an export push which heavily involves SMEs. Taiwan's manufactured export growth was based, for the most part, on relatively small firms, as was that of Hong Kong. Korea relied initially on very large firms both for exports and for overall growth, but by the mid 1970s a heightened concern for employment creation helped underpin a strong push to encourage SME growth and linkages with LEs. The next two decades saw a dramatic increase in the relative role of SMEs in manufacturing output and employment, while income inequality fell markedly, approaching the level of Taiwan. Korea thus provides an interesting model of what might be attainable in Latin America. Though the reasons for limited vertical cooperation in Latin America may have been different from those in Korea, the similarities are also considerable. As for small-small cooperation, Taiwan and Italy, in different ways, exemplify the strength of effective interaction among such firms in pursuit of export success.

Macroeconomic Settings

Dense transactions networks among firms have the potential to reduce costs and raise overall efficiency, but they increase the level of dependence of firms on each other. Such dependence poses risks which rise with macroeconomic instability, which often creates or reflects sharp relative price changes, unavailability of inputs, bankruptcies and other phenomena which increase the dangers associated with dependence on others. Quintareta (1993) suggest that the frequently unstable macroeconomic situation in Argentina discouraged interfirm cooperation.

The stop-go cycles which characterized many Latin American countries, as a combination of inflation and fixed exchange rates led to periodic balance of payments crises, were no doubt an infertile soil for certain types of interfirm cooperation. Openness, as it has evolved in Latin America over the past decade or so has brought

a different problem, namely, unstable capital movements and real exchange rates, which have led to periodic import surges and sharp changes in the profitability of exporting, putting many SMEs, as well as LEs, under stress and sometimes out of business. The effects of this instability will offset some of the above-noted benefits for interfirm cooperation of more open economies. Latin America's pursuit of macroeconomic stability will continue until the region finds a way to deal with it.

Social Cohesion

A background determinant of the effectiveness of collaboration among SMEs, between them and LEs, and between firms and government is the extent to which they view themselves as having shared goals and mutual interests. There are many examples of effective cooperation among the members of certain ethnic groups, when comparable cooperation is absent in the larger society or between such groups. Some settings, such as the pursuit of external markets, may lend themselves more to collaboration than others. In inegalitarian societies, large-small firm links may be discouraged by the greater social distance involved⁵ as well as the usually greater technological gap between the larger and the smaller firms. A tendency to social cleavages is likely to increase employer-employee conflict and to diminish the potential for interfirm cooperation and for worker flexibility (with respect to job content, wages, etc.)

The importance of social cohesion as a determinant of the gains from interfirm cooperation depends on how much of the benefits are associated with getting firms to lower their guard against transfers (of knowledge, workers, etc.) to other firms. Although cohesion and trust are important in most types of business dealings, they appear especially valuable for small-small cooperation (see below).

In summary, the setting for SME interaction depends on the physical and human infrastructure, the quality of markets and information, the degree of mutual interest among firms, the level of social cohesion, and (influenced by the cited factors) the firms' capacity to interact effectively and to undertake collective action, e.g. through business associations. These factors determine both the degree of success of interfirm interaction and the extent and ways in which the government can be productively involved, including such background activities as setting the rules of the game in the market, providing relevant education and training and so on.

⁵ Knorringa (1994) suggests that the caste system has had such an effect in the Agra shoe cluster.

Factors Underlying the Development of Effective Horizontal Cooperation Among Small Firms and of Clusters

The most dramatic type of small-small cooperation is represented by the “clusters” of firms which interact with each other in a number of mutually productive ways. Geographic clustering tends to occur both in (i) craft industries, usually grouped in small towns or confined segments of larger cities, and (ii) in higher technology sectors like electronics, metal-working, computers and software, biotechnologies, etc., more frequently found in larger urban centres. In developing countries the first category is the dominant one. Sometimes the cooperating firms are few, say 5-15 members or so, and hence unlikely to place their stamp on the locality, as do larger groups. An important question is the extent to which cooperation within small groups of firms provides a building block for larger clusters later.

Frequent Features of Clusters

Networks of mainly small firms, collaborating through specialization and subcontracting, have been the key to the success of many industrial districts in developed countries and more particularly in Italy, which figures prominently in the discussion of clusters. In this so-called “Italian model” (see, for example, Sengenberger and Pyke, 1992, 1), the key to competitive success is not in especially low factor prices (as one would expect in developing countries), but in the collective efficiency of these groups of firms. Piore and Sabel (1984) argued that the vitality of the small firms in the “Third Italy” lay in the cooperative competition among communities of enterprises grouped in particular locations and on the broad skills of the laboring community.

Some of European industrial districts⁶ are made up entirely of relatively small firms which have collectively generated the dynamism and taken care of nearly all of the functions involved in producing and marketing of their goods. Many successful clusters in Latin America and in other developing countries appear to differ in significant ways from that model. In some of them, local large enterprises have played key roles; in others an intermediary from the outside seems to have been a catalyst. In the Italian districts many of the firms are sophisticated producers, something which is less frequently the case in developing countries (Humphrey, 1995, 157). Still, there is much that is common to most clusters. Production units often deal with each other not only via market price signals, but also through a variety of co-ownership agreements, informal contracts and social ties,⁷ most of which tend to be strongest when the parties are in close contact. Clustering tends to develop where the contribution of such informal relationships to a firm's competitiveness is important. Cooperation co-exists with competition; sometimes the former is found mainly among firms producing different things and the latter mainly among those doing the same thing. Cooperation can act as a sort of informal insurance against the instability of demand and profits for individual participants.

⁶ Precise definitions and boundaries between concepts vary among authors. Humphrey and Schmitz (1995, 8) define a cluster as a sectorally and geographically concentrated group of enterprises; an industrial district exists when implicit and explicit forms of collaboration among local economic agents and strong sectoral associations are also present; finally, a network exists when there is cooperation among firms, mutual learning and collective innovation, but in the absence of large clusters.

⁷ A group of small furniture producers in Guadalajara, who constituted an Empresa Integradora in 1994, exemplify several general principles. Formed mainly with the objective of achieving economies of scale in purchasing inputs and selling

Innovation and diffusion are facilitated by the cooperative atmosphere, by the sense of involvement of workers, and by the small social distance (if any) between them and the employers.

These conditions matter most when there is high potential for “bottom up” innovation where most new ideas come from the shop or arise in collaboration with it. Pyke (1995, 12) notes an increasing awareness of the role of the worker's active participation in production upgrading; it tends to lessen internal hierarchies. The great success of the small firms of Emilia Romagna may be substantially due to this learning and sharing process. Producers may also visit each other frequently, discuss their production problems with each other, and ultimately share innovations. The common “amoeba-like” evolution in the array of products and techniques of production contrasts with the discontinuous leaps more characteristic of mass production (Piore, 1992, 55).

Factors Underlying the Intensity of and Payoff to Horizontal Cooperation

A number of background factors tend to be associated with high levels of interaction among small firms, whether in the specific context of “clusters” or more generally. It is important to understand how and why these factors (including the social basis for cooperation as well as those more directly tied to production and marketing) develop and change.

products, they have with some effort achieved a degree of standardization of product and at time of interview (1996) sold half of their output collectively. The group's formation was induced in part by the downturn of the Mexican economy; representatives of this and several other groups indicated that the Mexican businessman is very independent and not prone to cooperate. Both wives and children tend to participate in group activities and there is considerable social interaction among the families—our informant indicated that this was important, **inter alia**, to avoid destructive jealousies.

Group success depends on both supply and demand conditions the capacity to turn out a competitive product (good quality, price, etc.) and effective linking to markets. The role of demand, and hence of buyers and traders is often a pivotal one.⁸ Humphrey and Schmitz (1995) suggest that public support for SMEs in developing countries tends to be overly supply-oriented and insufficiently focused on demand. External (demand) factors often have a definitive influence on the way districts develop, as witness the Sinos Valley case in Brazil, the Jepara furniture industry in Indonesia (Berry and Levy, 1994), and many others. Successful customer-oriented assistance programs may work through participation at trade fairs, through public procurement, or through SME delivery contracts with large enterprises.

Minimum levels of contact and trust, and potential mutual benefits may be necessary to underlie interfirm cooperation. Once it exists for some types of interaction it is more likely to deepen and to extend to other areas, suggesting “economies of scale” in cooperation. Rabellotti (1995, 36) refers to a “diffused sense of belonging to an old established community,” something which most of the surveyed Italian footwear entrepreneurs considered important for easy exchange and cooperation with other firms.

Cultural and/or ethnic affinity; proclivity to collective behavior.

Clusters and districts, wherever found, tend to be embedded within a cooperation-fostering culture, based in varying degrees on family structure, ethnic groups, political parties, the church and/or other loci of ethnic/cultural affinity. The main question is whether the sort of easy and cooperative relationships to which this culture contributes can be achieved by the accumulation of “practice” as well as by

⁸ Humphrey and Schmitz (1995) argue, on the basis of experiences in Brazil and Indonesia, that the more dynamic clusters and networks tend to be buyer-driven and that public support for upgrading SMEs has more impact in buyer-driven than in supplier-driven chains.

historical legacy. Such cohesiveness contributes to lower transactions costs by providing a high level of trust among members of a group; possibly also it tends to imply a greater homogeneity of objectives, behavior patterns and the like, which may in turn facilitate cooperative interaction. It is present, in one degree or another, in such Latin American clusters or “pseudo-clusters” as Sinos valley (Brazil) and Rafaela (Argentina).

Members of most cultural groups are likely to interact more easily with members of the same group, but groups may also differ in their general proclivity towards collective behavior. Chinese business networks involve much more than arms-length relationships; their social importance can provide strong sanctions against opportunistic behavior, helping the dense interaction among small firms in countries like Taiwan and Hong Kong to work smoothly. In contrast, both insiders and outsiders comment that the typical Latin American businessman is highly individualistic, and not easily inclined to collaborate or to place a high degree of trust in partners. In the case of contacts between large firms and small ones, social distance can create an unease in the relationship; such distance tends to be less in the more egalitarian countries of East Asia.

Cooperation tends to reflect not only cultural-social factors which facilitate it and diminish damaging conflict, but also regulations and practices which provide support. Piore (1992, 58) points to the existence of rules and standards of behavior designed to curtail the sort of exploitation among members of the community which would foreclose cooperation between them, e.g. limits on (wage) competition and procedures for distributing demand to ensure good utilization of the districts' resources. Because both collectively provided services and these rules of behavior impose burdens on the community as a whole, it appears that it must have a natural or deliberately chosen perimeter which defines and hence limits membership. How these rules emerge and the level at which they are enforced is not easy to detect.

Structure of the Cooperating Group

Level of trust and willingness to cooperate in a certain set of functions depend on the structure of the group of cooperants. In some situations it appears that trust is based partly on the participants being of about equal size and economic power, such that none are afraid of being dominated or taken advantage of by others. This may be especially the case in the early stages of small groups but less relevant in larger clusters, where externalities of location and information play a more important role and collective action in purchasing, sales, lobbying, etc. is relatively less important. Older clusters tend to be more differentiated in terms of firm size. And, though one might expect self-help institutions to be more important for the smaller firms in a cluster, recent data from Sinos Valley show that membership and use increase with firm size.⁹ Peasgood and Schmitz (1994) conclude that the benefits derived by smaller firms from the clustering are more from the incidental external economies than from joining collective efforts. Schmitz (1995, 551) speculates that it may have been different prior to and during the first years of the Sinos Valley's export boom, when there was much less differentiation.

If it is generally possible for potential cooperants to choose themselves in such a way as to form a group which can work well, then structure may be less a determinant of whether success is achieved than simply an outcome of natural group evolution. Our understanding of the relevant dynamics is not yet adequate enough to answer this question.

Adequate Supply of Entrepreneurial Skills

Levy (1990) has interpreted the early prevalence of dynamic small firms in Taiwan as due in part to a high stock of entrepreneurial skills (in turn

⁹ This relationship could, however, be due to a correlation of size with age of firm, or level of success and time to spare, if such factors were the real determinants of such involvement.

partly the result of selective migration from the mainland). Without an adequate supply of these skills, the generalized level of performance, which is necessary to induce firms to accept a high level of dependence on others, will not be present. The small Taiwanese firm could rely both on the efficiency of other firms and of the markets connecting it to them. Much evidence indicates that confidence in other firms' capacity to do their part of the job in any collective endeavour is pivotal; members of successful "empresas integradoras" in Mexico place a striking emphasis on their need for and the time required to generate confidence in their co-members, not only at a personal level (will they take advantage of other members?) but also at a professional one.¹⁰

Rural or Small Town/City Setting.

Klein (1995, 6) notes that almost all of the Italian clusters are spread in valleys and rural areas, and suspects that clusters based on mainly unskilled workers are less suitable for urban areas, where workers can too easily be pulled away to other activities. Urban clusters (e.g. clothing in American cities) are usually built around an ethnic group. The rural or smaller town setting tends to be correlated with the sort of cohesive sociocultural setting noted above and sometimes with ethnic group as well (Sinos Valley, Rafaela). Immobility of the population is greater for logistic reasons as well as cultural ones. If small centers provide a better environment for effective clusters, a polycentric urban structure like Italy's, Brazil's or Colombia's may raise the chances of having a large number of clusters.

Export Activity and other Linkages with the Outside World are Important.

As Becattini (1990, 169-70) observes in the context of Italy, a habit of contacts and exchanges with foreign countries increases the flow of technological and market information. Tourists triggered the export boom of up-scale

¹⁰ Based on interviews conducted in Mexico D.F. and in Guadalajara, Feb., 1996.

clothing from Bali and of carved wooden furniture from Jepara, Indonesia (Berry and Levy, 1994).

A vigorous community of traders can contribute to the development both of the SME sector in general, and of its export capacity (Levy, 1988; Scitovsky, 1985). In Taiwan, they were particularly valuable in identifying markets and aggregating goods from dispersed producers for sale in bulk to foreign buyers (Young, 1994, 12). Traders are often important to the manner and pace at which clusters develop (Weijland, 1994; Humphrey and Schmitz, 1994). The arrival of export buyers can promote collective action, particularly in pursuit of better transport, improved customs, information on external markets and trade fairs. Private intermediaries tend to be more successful than public ones though the latter can contribute via trade fairs. Buyers can jump-start dormant clusters as some producers receive new orders, others try harder, a sense of rivalry among producers can come from the transparency of the process, innovations get copied and so on.¹¹ Schmitz (1995) suggests that, though some small firms can break into distant markets and grow on the basis of externalities (piggy backing of larger companies that paved the way), what makes clusters as a whole move forward is that some firms invest in cooperative relationships, particularly with their suppliers, and in collective efficiency. This initiative seems to come more from large than from small firms.

Many of the clusters which have received attention are exportoriented. The economies most noted for large, effective SME sectors with high levels of firm interaction, such as Taiwan and Hong Kong, are also heavily exportoriented. The association between such interaction and export activity suggests that access to a large

¹¹ Gereffi (1992) refers to buyer-driven commodity chains, where retailers and international companies market and organize the chain rather than being much involved in the production side. Such an emphasis on the importance of good market access to induce effective collective action and lead to growth mirrors common findings in studies of individual SMEs-marketing is often the center of attention.

market is important. The size of individual orders and the usually higher quality and delivery requirements of a large market put pressure on firms and sectors and induces them to cooperate. In addition, this also provides an incentive for governments (perhaps especially local ones) to collaborate with them. Since, almost by definition, a cluster is engaged in exporting at least to other regions of the country, the additional impact of being involved in international markets will be a matter of degree depending on the industry, the country and other factors. For example, in the case of wood products in Chile, the act of exporting seems to have provided a catalyst by inducing a series of cooperations that raised efficiency. In today's global economy, such situations will be frequent; complementary policy steps will need to reflect this situation and take full advantage of it. All this being said, it must also be remembered that some districts which now engage heavily in exports were well-developed clusters before entering world markets (Sinon Valley in Brazil, and several districts in Italy) or had considerable though less varied interaction among firms (footwear industry in parts of Mexico).

Special Settings

Some clusters evolve out of special settings such as labor-business conflicts, as was the case of the Italian districts and the famous knitwear cluster in Tiruppur, India. Until the early 1960s the knitwear industry of Tiruppur was mainly organized in factories. Following a long period of unrest and strikes, they were replaced by a system based on subcontracting with small units and (by the end of the decade) a piece-rate system. The cluster started to export around 1980, after which growth accelerated (Swaminathan, 1995, 5) and the network increased in complexity. Once the new decentralized system of production had been established it proved its superiority through very rapid growth and export success.

Other clusters have their origins in shocks like the outright failure of larger firms or the pressures of macroeconomic events. Several shoe producing clusters in Peru date from the

collapse of the large firms in the region;¹² former workers make use of their skills and the physical capital of the prior employers to re-establish a local producing center. Many *empresas integradoras* in Mexico were spurred into existence, at least in part, by the crisis of the trade opening *cum* recession of the last few years.

Matching Policy to Context and Institutions

Most of the clusters which have been studied (whether in developed or developing countries) owe their success to a combination of resources, social milieu, and institutions which facilitate interfirm cooperation, and to adequate market access, which may or may not be effectively promoted through collective action. Although the role of government has not been predominant, it appears to have been at least reasonably important in a number of cases. It might more frequently be pivotal in the future; only very recently have governments given much priority to such promotion. The task for policymakers is to assess the optimal role of the public sector and how that role varies according to the setting.

Who are the Important Institutional Actors and What Can they Do?

Effective institutional support and policies to foster effective interfirm linkages and cooperation largely overlap with those which contribute to healthy SMEs in a more general sense. Where SMEs are unable to perform well in general, their scope for effective interaction either with LEs or with other SMEs is reduced. It is thus inappropriate and unrealistic to treat policies to support interfirm linkages independently of overall SME support. Strong overall support for SMEs, together with some special support for linkages, will have the added benefit of making such linkages easier to achieve and more productive.

¹² For example those found in Trujillo (Vargas Peña, 1995)

A number of institutions frequently play significant pro-active or usefully responsive roles in the development of effective interaction among small firms. In the specific case of clusters, it appears that the main and early initiatives usually come from private sector institutions (associations, etc.), but the collaboration or at least non-opposition of those representing labor and government are clearly important as well. The labor side matters especially when there has been a history of conflict and where efficiency requires labor flexibility or other “concessions.” In less urban settings labor institutions may not be developed enough to be very relevant. Government may play a key indirect role by facilitating the creation and effective interaction of private sector institutions.

Several general points deserve emphasis. First, in the context of clusters (or other groupings), policy should generally be designed to take advantage of interfirm cooperation and to foster it. Provision of services on a group basis often makes sense (by lowering average costs, etc.); for clusters, it is all the more desirable since firms are already engaged in relatively high levels of cooperation and there is a payoff to increasing that level, especially in nascent clusters. Second, the apparent correlation between good market access and cluster success, coupled with the fact that for many small firms (whether in clusters or on their own) marketing is the biggest challenge, suggests an emphasis on that function. A recent public purchasing scheme in Ceará highlights the potential for a demand driven approach led by the public sector, coupled with both technical support and collective action.

Local Associations : Klein (1995, 15-16) contends that local associations are typically the first visible manifestation of clusters. Trade associations can compensate for scale deficiencies. In Italy, the National Confederation of Artisans provides its thousands of small firm members with bookkeeping and other services. Trade associations and even trade unions, are tending to supplement traditional bargaining and representation roles with more developmental activities (Pyke, 1995, 9). Coping with the cost

of R&D is important; in Emilia Romagna, for example, raising the innovative capacities of small firm by strengthening their links with educational, research and other institutions is considered by employers organizations, trade unions and regional governments alike as a priority area.

Banks: *Becattini (1990) argued that the presence of local banks was important to the success of some of Italy's industrial districts. Such presence, and more generally the stance and competence of banks to handle the needs of SMEs does matter, especially to firms that are in a position to grow rapidly. In most countries of Latin America the private commercial banks are uninclined to service smaller firms, unless given special incentives to do so, incentives like those created by World Bank credits designed for on-lending to SMEs. The role of the specialized development banks as a source of SME finance is diminishing as part of the financial reforms. The relative lack of bank support for SMEs in Latin America at present provides a contrast with the situation in some of the countries where this sector has been most successful (e.g. Japan). Although strong commercial bank support for SMEs in general appears unlikely for the time being, those SMEs organized into clusters may have better luck. Joint liability among several small firms may be useful as a way to diminish the risk-avoiding reaction of the banks.*

Educational and training institutions: Educational and training institutions of one sort or another are important to the success of most clusters. The role in the historical evolution of the Emilia Romagna districts has been widely discussed. Universities are especially relevant to high tech firms and clusters. In such industries as metal-working, where many entrepreneurs are engineers, contact with university personnel seems more frequent and more productive, as noted in the case of Korea by Kim and Nugent (1993). More generally, the firms making up a cluster tend to need the same skills in their workers, and it is a short step to recognition of this and to taking the steps to satisfy them.

Government: Both the European experience and the scattered evidence from LDCs suggest that government, especially local and regional government, can play a significant role in assisting clusters and networks of SMEs to raise their competitiveness. That role is clearer where such groups already exist in some form than for the very early stages of cluster formation;¹³ this asymmetry is due in part to the fact that in the European success stories, regional or local government usually became active only at a relatively advanced stage of industrial development¹⁴ The importance of the role of local government in the Italian experience is, however, debated. Rabellotti (1995, 36) considers that the undeniable importance of institutional support (a broader category) in the growth process in the Italian districts has “fed the myth of an efficient local government.” In the footwear districts Rabellotti (1995, 36, 39) studied in Mexico and Italy, he found the local governments to be of at most modest significance. The local entrepreneurial associations were in both cases the main actors in supplying a number of services and in the promotion of initiatives to support the sector. (Humphrey and Schmitz, 1995), and in part to the fact that the early life of clusters is naturally less recorded than the later stages, after such groups have become prominent enough to capture attention. But even with respect to the later stages of the evolution of clusters, the precise contribution of government is unclear; the link between public policy and private performance is under-researched in the European cases and elsewhere, and the task of identifying what mattered more

¹³ As Schmitz (1995, 554) puts it, “Governments or government-sponsored institutions cannot create an industrial organization 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 industry to expand and innovate.”

¹⁴ The business service centres of Emilia Romagna are frequently cited as an example of positive government support. Despite its advantages, the local business environment was perceived as being slow to respond to new ideas and technologies. The remedy chosen was these strong and quasi-public centres, specialized in support services.

than what else is daunting in light of the many possible elements of context and policy which could be important.¹⁵

Government policy and support for interfirm cooperation can be indirect or direct. Sometimes strong general support for SMEs may be most useful, by contributing to productive high-performance firms. Sometimes the main form of support will be in fostering private associations. Piore (1992, 57) believes that the most important direct public services are R&D and training and education, though in some industrial districts one also sees governments providing financial services, marketing, materials purchasing services, and managerial consulting services. The division of labor between governments and other organizations (unions, business associations, cooperatives, and religious organizations), varies from district to district and also within districts.

Though most existing clusters have arisen endogenously, what and how much public policy can usefully contribute to the early stages of cluster formation is important, so particular interest attaches to those cases where it appears to have helped. An important facilitating role, particularly for regional governments, can be seen in cases like the Indian Punjab (Tewarie,

¹⁵ Schmitz and Musyck (1993), based on a literature review, emphasize that there is very little by way of evaluation of services supplied from the users' point of view. The business service centres of Emilia Romagna are frequently cited as example of positive government support. Despite its advantages, the local business environment was perceived as being slow to respond to new ideas and technologies. The remedy chosen was these strong and quasi-public centers, specialized in support services. The importance of the role of local government in the Italian experience is, however, debated. Rabellotti (1995, 36) considers that the undeniable importance of institutional support (a broader category) in the growth process in the Italian districts has “fed the myth of an efficient local government.” In the footwear districts Rabellotti (1995, 36, 39) studied in Mexico and Italy, he found the local governments to be of, at most, modest significance. The local entrepreneurial associations were in both cases the main actors in supplying a number of services and in the promotion of initiatives to support the sector.

1992, Kashyap, 1992) and Ceará, Brazil where the procurement policy of the state government was the main instrument (Amorim, 1994, Tandler, 1996). Schmitz (1995, 554) considers that effective demand was the proximate transforming force in the Sinos Valley case, and that a public institution (FENAC, the shoe fair organization) and private export agents were the critical transforming actors/agents, with the former being instrumental in bringing the latter to the Valley.

Given the importance of knowledge, the creation of an environment that facilitates cooperation and the spread of information (without killing the benefits of competition) is a central challenge. South Africa is establishing a nationwide network of locally controlled service centers for small firms, to provide them with the information they need and to act as a focal point for cooperation. The UNIDO program in Jamaica begins by persuading small firms in the same sector to open their workshops to each other for critical evaluation. This component is considered key to the program, which then promotes further collaboration. Such initiatives are often inspired by European models.

Government involvement in support of interfirm linkages takes a variety of forms. Denmark's well known Cooperation Network Programme was triggered by the recognition that SMEs, the backbone of the Danish economy, were ill-equipped to deal with global competition (Humphrey and Schmitz, 1995, 10). Interfirm cooperation was not part of the tradition of industrial culture. The programme demonstrates one way of promoting cooperation among SMEs through skilled external assistance, and has been copied in a modified form in several other countries. It is a nationwide initiative to promote cooperation on joint purchasing, sale and production among small firms, both those in the same activity and those which are complementary (Pyke, 1994), and whether they are part of the same cluster or not. (In fact, most participants do tend to be from the same region or town and to produce similar or complementary products.)

The impact of the public resources is increased by working with groups of enterprises, ranging from five to six firms and up, but generally rather small (Pyke, 1995, 9). The key figure, the "network broker," helps to identify opportunities, bring participants together and assist in implementing ideas or projects (Humphrey and Schmitz, 1995, 10). The program's high take-up has helped to make networking part of the evolving Danish business culture. It is largely government funded but of short duration. In a broadly similar U.K. program the participants pay most of the costs, making it harder to achieve scale quickly though having the advantage of eliciting a stronger commitment and perhaps greater sustainability. The level of subsidization is an important policy issue to be assessed by countries instituting such programs.

Recent experiences with fostering networks in Chile, Brazil and several other countries of Latin America are encouraging. SERCOTEC, the SME promotion agency in Chile, founded its development projects (PROFOs) program in 1990¹⁶ with the objective of creating small networks (usually 10 to 30 firms), increasing their take-up of other of its services, and creating focal points which will stimulate the development of local economies. The program assumes that the biggest SME problem is isolation rather than small size and that the state's role is to stimulate and coordinate the participation of public and private actors in the locality. After diagnosing the problems of potential clients and establishing its own credibility as a source of useful support--by no means automatic in this highly individualistic business culture, SERCOTEC and the firms proceed to the next (consolidation) phase with the appointment of a PROFO manager, who acts as an interface between its members and institutions and markets. A first task is to improve the delivery and take-up of support services, taking advantage of the lobbying potential of the group. A second is to improve relations between the participating firms, via

¹⁶ This section is based on Humphrey and Schmitz (1995, 21-24) who in turn draw on Dini (1993).

visits to each others factories, group workshops and group travel. The managers are appointed (and subsidized) for three years, after which the participating firms must take over all support for their salary. Early results of the PROFO initiative exceeded expectations, with some groups breaking into foreign or large firm markets. Encouraged, SERCOTEC developed a new program to channel funds to groups of SMEs wishing to export. There is evidence that if enterprises are assisted in the initial stages of export, they can often carry on subsequently by themselves (Roberts and Tybout, 1995). The critical hurdles of entry are sunk costs of gathering information on foreign markets, upgrading quality and establishing marketing channels.

Until recently, local governments participated little in SME support, partly because of limitations resulting from highly centralized administrative systems. Trend toward decentralization are now reversing this situation. Many examples from around the world indicate that, given reasonable resources, local governments are better placed and better motivated to become usefully involved than national governments. The hand of local government has been clearly visible, albeit not dominant in most of the better-known clusters in Latin America. For example, local governments were usefully involved in the Sinos Valley (Brazil) and in Rafaela (Argentina) although their involvement was often through effective response to and collaboration with associations and other private sector institutions than through real leadership.

Given the frequent lack of administrative capacity and recent introduction of local governments to certain functions, effective

collaboration among levels of government will remain very important for the foreseeable future, and important functions and contributions will need to come from the central government. An example of effective responsibility sharing comes from Japan, where the important regional technology centers are administered and largely funded (upwards of four-fifths) by the prefectural and local governments, although the central government ministry (MITI) influences how the system operates (Shapira, 1990).

NGO Service Institutions : Nongovernmental institutions provide support to SMEs in Latin America and elsewhere. One such institution, EMPRETEC, operates as an enterprise incubator to raise entrepreneurial capacity (Tarago, 1995). Institutional support and professional expertise are sought through an executive committee which typically includes people from business associations, development banks and government agencies concerned with the SME sector. According to Recart (1995), Chilean entrepreneurs discover the advantages of networking during training courses; however, these often erode after a period of non-involvement. Continued interaction is likely to depend on existing entrepreneurial associations, but their traditional focus on lobbying does not help young entrepreneurs who are looking for technological information, export groups, real business linkages and opportunities to exchange information and share experiences in private and confidential groups. While suggesting a potential role for groups like EMPRETEC in promoting cooperation, the Chilean experience also highlights the need for institutional change to facilitate their contribution.

Factors Underlying the Development of Subcontracting and Other Interactions Between Large and Small Firms

Like the interaction among small firms, large-small linkages (mainly subcontracting) can contribute to efficient industrial structures and

strong economic performance. Latin America is generally viewed as having an underdeveloped subcontracting system, reflecting the high

degree of vertical integration and limited specialization among firms. The high density of subcontracting in the exporting economies of East Asia suggests that the Latin countries may move in this direction as they liberalize their economies. However, not all SMEs can handle the stringent requirements of quality, just-in-time delivery and so on that go with hand-in-hand with competitive exporting (Kaplinsky, 1994). Under the liberalized import regimes being installed in Latin America firms struggling to remain competitive have the option of resorting to imports rather than domestically subcontracting inputs; many appear to be taking this route, at least for the time being.¹⁷ The situation was quite different when the dense subcontracting networks were established in Japan, Korea and Taiwan. These countries provide lessons of special interest. Vertical subcontracting, though not approaching the density found in the Asian countries, is nonetheless fairly common in developing countries, including some in Latin America.¹⁸

Inducing Vertical Subcontracting: The Korean Way

Korea's experience is of special interest since the rapid development of its subcontracting system allowed the SME sector to greatly expand its role in manufactured output and exports in a relatively short period-- the two decades since the mid 1970s. The radical change in industrial size structure during that period¹⁹ was partly a

¹⁷ Based on interviews with SMEs in Mexico. Toyota's Hermosillo plant imports most components because local suppliers are unreliable and slow, partly due to infrastructure problems.

¹⁸ It is much more important in Brazil, for which Kagami (1993) reports that 42% of SMEs in Sao Paulo had a subcontracting relationship, than in Argentina (Kantis and Yoguel, 1989; Gatto and Yoguel, 1994). 67% of Colombian SME exporters in the industries studied by Levy et al (1994, 7) subcontracted out.

¹⁹ The share of firms with revenue from subcontracting rose from 18.6% in 1968 to 70% in 1990 (Kim and Nugent, 1993, Table 2.25). In 1990

result of the changing composition of industrial output by sector, and partly due to a policy imperative to spread the fruits of industrial growth more widely (Baek, 1992). The later shift from low-wage strategy a development model in which interfirm networks gained importance (Cho, 1995, 2) also played a role.

A dense subcontracting system was built on cultural, economic and policy factors, and on direct incentives. Many linkages rest on mutual trust and interpersonal respect based on social relationships, such as common schooling and regional or family background (Cho, 1995, 13). At the same time, market forces encouraging subcontracting were complemented by government policy and pressure. Some of the new small firms are spin-offs from the large enterprises for which they subcontract, while others have arose independently. Legislation enacted in 1982 specified the SME industries to be promoted, excluded large firms from activities reserved for small ones and promoted subcontracting (Cho, 1995, 4). Since the late 1980s, externalization (transfer of production activities formerly handled within the large firm) to small subcontractors occurred rapidly.

Korea has thus been unusually vigorous in its promotion and mandating of large-small linkages, as it has in overall SME support policy, where a wide variety of institutions and programs cater to perceived needs. Kim et al (1995, 18) report that though few of these publicly provided services were given high average ratings for importance by a set of SME exporters in four industrial sectors, virtually all firms reported considerable benefit from one or another of the sources. The support system as a whole thus appears to have a considerable positive impact. The question from the perspective of other countries is the extent to which Korea's policy of mandating and nurturing increased vertical linkages might be replicable.

probably about half of the output of the smallest establishments was subcontracted.

Factors and Policies for Vertical Subcontracting

The experience of Japan, Korea and other countries suggests a number of factors which may be important to the development of strong vertical linkages; some are policy variables or can be influenced by them.

Strengthening of Potential Subcontractors

Often the main prerequisite for a dense subcontracting system is better performance on the part of potential subcontractors. Public policy is important in the provision of relevant general and technical education, and of technical assistance, short courses and the like. Several common needs are worth special mention. One is a recognition of the importance of proving oneself a reliable partner (Mead and Kunjeku, 1993, 26). Some small firms have limited ability to make realistic cost estimates; many are unaccustomed to the quality and timing demands of contractors. The same goes for market development and establishment of effective on-the-job training practices. The evolution of vertical subcontracting in Japan involved an important transfer of information and skills by the technicians of the larger partner. In countries where local technicians are less qualified and where there is a premium on moving quickly, depending on foreign experts may be the only realistic option (Mead and Kunjeku, 1993, 25; Berry and Levy, 1994). Cumbersome procedures for work permits are counterproductive.

The successful SME countries of East Asia, beginning with Japan, have strong technical support systems to complement large-to-small technical assistance. Japan's system of technology centers, with wide geographical coverage and a wide range of services, is believed by observers such as Shapira (1990, 1) to play a significant role in the relatively small technological gap between small and large firms. Korea started a system of this sort about 20 years ago, and now has branches scattered throughout the country. The head office invites foreign consultants, as necessary, from Japan, Germany and the U.S.A.

Latin American countries need such networks. Most existing programs are too new to permit a judgment of whether they will soon bear significant fruit.²⁰ SEBRAE's program in Brazil does respond in an innovative way to the challenge of upgrading small suppliers to assist them in meeting the increasingly stringent demands of large producers (Marx, 1993, cited by Humphrey and Schmitz, 1995, 19). A subsidized (to the tune of half the costs) diagnostic service focuses on the relationship between large and small firms, providing training for both contractor and suppliers, on both the technical and the behavioral sides of their relationship. The training is built around concrete issues arising out of existing orders, assuring both its relevance and the interest of the principals. Involving the large firms is felt to be important since they know what they want and can bring their own resources to bear along with those of the state.

Some large firms provide assistance to SMEs on their own. For example, some large Brazilian shoe producers had already started to provide assistance to SMEs prior to the SEBRAE initiative. But the initiative helped to put it on more agendas and to show how small suppliers, even homeworkers, can be fitted in.

The experience of SERCOTEC, in Chile, is that large firms usually do not have the resources, experience or incentives to promote small suppliers; input from public agencies provides the initial impetus to increase their capability and credibility in the eyes of the large firm. Once this has been done, the relationship can continue on its own dynamic (Humphrey and Schmitz, 1995, 20).

Instruments to Faster Large-Small Linkages

²⁰ The Japanese International Cooperation Agency (JICA) group, currently in Mexico to formulate a development and promotion plan for the supporting industries (parts and components manufacturing industries), concurs. They judge that it may take about ten years to get the system successfully started.

A variety of instruments have been proposed and/or experimented with to promote subcontracting and other large-small linkages. They range from directly mandating the linkages (for example, each large firm is required to develop links with a specified number of small firms), to a variety of incentives (e.g. tax-related), to what is probably the most common--the provision of information through subcontracting exchanges. Though few exchanges have been carefully evaluated, a common perception is that most make, at best, a marginal contribution. In an information-rich setting they may sometimes be superfluous (for example, business associations and other groups and situations in which businesspeople meet may already perform of the function for which the exchanges are intended). When duly reflective of the qualities needed in subcontractors, they may be reasonably useful. The requirements of subcontractors are much simpler in industries like clothing (some types) or footwear than in more complicated industries like machinery, where quite a bit of information may need to be transferred as a prelude to a partnership.

The impressive speed with which the Korean SME sector grew through subcontracting ties with large firms was probably due, in part, to the policy of mandating vertical linkages and reserving certain production activities for smaller firms. But given Latin America's generally weaker capacity to implement such "strong" policies effectively, it is not evident that this instrument would be effective. The foster parent program in Indonesia appears to have yielded virtually nothing (Berry and Levy, 1994). Doubts notwithstanding, this aspect of the Korean record deserves more study.

Most linkage-support policy packages (including Korea's) include a set of inducements, either with or instead of outright requirements. Since 1978-79 the Indian government has strengthened its policy of subcontracting by issuing comprehensive guidelines and incentives (Spath, 1993, 27). The number of units registered as ancillary has increased in several industries, including automobiles, engineering and bicycles.

This and other experiments deserve follow-up to assess their impacts in a detailed way.

One source of effective large-small links in East Asian countries, and to a lesser degree elsewhere in the developing world, is enterprise creation by former employees of large firms, often with the assistance of the former employer. Such arrangements usually benefit from a strong relationship of trust between the partners, and from good technical skills on the part of the new SME entrepreneur. In some institutional contexts they are discouraged by non portable fringe benefits, pensions etc. Labor law reform legislation may and should be designed to facilitate such shifts or, at the very least, not to discourage them.

Vertical linkages with large public sector firms or with the government itself offer another option. Subcontracting by parastatals is common in some countries, although the criteria guiding the selection of subcontractors do not always appear to be appropriate. As privatization advances it is likely to become less important. Direct purchase by governments can play a larger role in stimulating SMEs than it has in the past. Ceará's public purchasing scheme offered contracts to associations of small producers, and where they did not exist, SEBRAE helped to form them. The association was responsible for quality and product guarantees.

The Tax and Subsidy System: Formalization

Several features of the system of taxes and subsidies are relevant to the creation of an enabling environment for large-small linkages. If the final product is being exported, it is important that export rebates or other tax concessions be made available to indirect exporters as well as to direct ones; otherwise there is a built-in bias against subcontracting in exportable products. The tax system also needs to be user-friendly for SMEs (minimum red-tape, lack of harassment and bribery, reasonable tax levels), to encourage small firms to register and operate in reasonable conformity with government regulations. This is sometimes necessary if they are to engage in complicated supply systems. Finally, and especially if it is not considered desirable to mandate

subcontracting, tax incentives of limited duration after a new partnership has been established may be a useful instrument as long as the tax system is reasonably well-organized (to avoid cheating).

The policy issues in this area are subtle. Often the options are a two-tier system in which smaller and larger firms are treated differently in the laws and regulations, or acceptance of substantial de facto noncompliance by the former. Operating the latter option effectively requires considerable discretion.

Overall Policies to Improve SME Inter-firm Linkages

Although developing countries are increasingly aware of the potential contribution of SMEs to overall economic health, the resources devoted to SME support are likely to remain very modest. Moreover, the governments main role in SME support is likely to be private transactions and provider of infrastructure. This general proposition is especially true with respect to policies related to interactions between firms. Such linkages are undoubtedly important. The theoretical grounds for doubting that market forces will, on their own, generate a near-optimal level of cooperation are strong, which might suggest a central role for public policy. Unfortunately, there appears to be no simple and general recipe to bring forth the desired result. Attempts to legislate firms into each others arms seem questionable. While some degree of pressure to create vertical linkages may be appropriate, it needs to be exercised by technocrats who have a good understanding of the demands of a successful partnership.

Proactive steps in support of interfirm cooperation are of special interest in situations where a nudge from public policy could lead to a cumulative expansion of such activity. It may be that something of this sort happened in the Korean transition from an industrial structure in which SMEs played a rather modest role, to the current situation in which it is very important

Dispute Settlement

A low cost and speedy means of resolving disputes would help to overcome one source of reluctance on the part of some potential participants on both sides of the market. An intermediary institution could monitor arrangements and, when invited, mediate disputes. A problem in some countries is the perception of very unequal market power on the two sides of the arrangements. A number of countries have set up procedures to deal with this issue.

indeed. If so, it would be an especially valuable model for Latin America.

Effective policies to strengthen inter-firm linkages will, for the most part, be both complement market forces and have a "light touch". But several types of rather direct involvement have also shown distinct promise in one setting or another. State purchasing from SMEs has worked well in Ceará, Brazil; Denmark's Cooperation Network Program exemplifies the potential of such initiatives; educational and training institutions sometimes become the center of thriving groups of SMEs. What is common to the more successful experiences may be less the general type of policy intervention but rather the clear-headedness and professionalism with which it was carried out. Local governments have been central actors in many such instances, and good, or at least adequate, cooperation between the state and private institutions seems to have been prominent. Many notable successes, such as the Sinos Valley cluster, have evolved through quite different stages requiring correspondingly different public sector response. Definite element of good policy is flexibility.

The Relevance of Overall Industrial Policy as Context for Deepening Interfirm Cooperation

A recurring background question is whether a high level of interfirm cooperation is feasible in

the absence of a well-defined industrial policy that sets fairly clear directions for the future evolution of the sector. Hillebrand (1991, 185) articulates the key arguments: “*Countries which fail to develop a strategic perspective as a guide for corporative and government action and largely rely on spontaneous, ad hoc reactions and processes of trial and error underestimate in particular:*

-the importance of physical and above all non-physical infrastructure for the international competitiveness of enterprises;

-the time it takes to develop the main determinants of international competitiveness (human capital and technological infrastructures), and

-the adverse effects which uncertainty and risks have on aggressive corporate strategies.”

Two broad tendencies may be distinguished in the overall policy framework within which SME policy operates. In the approach followed by the most dynamic East Asian countries, there is broad industrial policy²¹ support. In addition, macroeconomic policy tends to favor industrial investment, in general, and certain sectors in particular. This is complemented by special assistance to SMEs. The alternative approach (followed by most other countries) involves simply assistance to SMEs, which usually consisting of special credit lines, industrial parks, technical assistance, regulations governing contracts, etc. Given the general shift toward more outward-oriented development

²¹ Both the Japanese and the Korean experiences suggest that a key ingredient in the development of a dense subcontracting network may be the pursuit of an industrial policy in which it is construed to play a significant role. In post-occupation Japan, MITI announced in 1951 the target industry policy as the backbone of national economic policy, with instruments including protectionism, provision of capital through various quasi-public bank channels and tax incentives. Small business policy shifted away from its previous focus on the promotion of free market conditions to the encouragement of subcontracting and productivity increases rather than relief-oriented measures for SMEs.

strategies, the range of instruments available to implement any given industrial policy has tended to fall over the last decade or so. It is true, however, that new approaches to industrial and technological policy differ significantly from the hierarchical control concepts popular in the past. They require social actors who are efficient and capable of compromising, learning and changing (Messner, 1992, 135). In addition, they may be effective with less apparent policy space than was available in the past.

A major issue, then, is the extent to which the density of linkages characterizing the East Asian experience may be attained in the absence of a strong, industrial policy that promotes stability. Export orientation, as noted, provides a set of incentives to effective subcontracting; may it, in a sense, substitute for the cited industrial policy? The experience of Hong Kong, a **laissez faire** economy but one with a high density of linkages, suggests some optimism on this count. In the other direction, will market-determined real exchange rates, in a world of large short-term capital movements, harm many SMEs and discourage the linkages that are important to them?

The Importance of the Trading Function; Support for Trade Fairs and Trading Companies (Empresas Integradoras) " | 2

The component of SME support strategy most systematically and positively judged is support for participation in trade fairs, both local and international.²² In the former case, support for the fair itself may be the key public sector contribution. In the case of professionally run trade fairs, which can be too costly for small firms, an option is to subsidize their participation. What option is to subsidize the participation of small firms in professionally run trade fairs, which can be too costly for them. In Brazil, SEBRAE offers to pay half of the exhibition cost for small firms (Humphrey and Schmitz, 1995, 16). Participation in local as well

²² The payoffs to attendance at international affairs are well demonstrated by the experience of Sinos Valley firms, Indonesian SME exporters (Berry and Levy, 1994) and many others.

as international trade fairs induces firms to be outward-looking.

Fairs are, a valuable tool in the generation of interfirm linkages, both vertical and horizontal. Small firms can make contacts larger firms and pick up new ideas at fair. Sandee (1994, 21) for example, has argued that the most effective first step in attempts to upgrade and stimulate rudimentary clusters is to take local producers to relevant fairs and markets, and providing them with training and technical or financial assistance afterwards. Support for groups rather than individual firms may be preferable for exhibition at distant, especially international fairs. In spite of the sometime lack of harmony, more follow-up tends to result (Humphrey and Schmitz, 1995, 16).

Given that market access is a central requirement of SMEs and provides much of the *raison d'être* for both horizontal and vertical linkages, how serious is the lack of a good supply of trading companies in most countries of Latin America? In the well-known Japanese case, general trading companies aggregated the output of many small producers and sold it abroad. Korea and Taiwan both benefited from the presence of some of the Japanese trading companies, as well as from the Japanese example. Taiwan's SME-based export experience was facilitated by a relative abundance of small international trading companies (Levy, 1988). Efficient intermediaries which connect groups of SMEs to the world market may, in the process, contribute to the creation of clusters or in other ways increase the productive cooperation among SMEs. Traders were important in the evolution of the Sinos Valley cluster and in many others.

In response to the lack of information or adequate commercial channels for SMEs with export potential, the Mexican government recently initiated a program directed at promoting "empresas integradoras" (EIs), groups of firms which together undertake buying, selling and possibly other functions. Much training occurs in-house in SMEs as well as in larger firms, especially in skills specific to a given industry. "Pirating" of workers is a

(Ruiz, 1995, 50). Over the course of the last (1988-94) administration, 90 such companies were created and a reasonable number appear to be reaping the predicted benefits of economies of scale in the purchase of inputs, marketing of output and use of selected services (accounting, legal etc.), as well as the advantages of specialization among members. It is too early to judge the likely success of the program. SECOFI (the Ministry of Commerce and Industry) has created a number of information and support programs. However, there appears, to be considerable skepticism among small and medium entrepreneurs interested in or currently involved in EIs as to whether the national government is seriously enough engaged in this program to put much weight and administrative support behind it. Such a "wait and see" attitude is to be expected in most Latin American countries which initiate programs of this sort.

Support for Business Organizations

Business associations, in particular those most likely to support socially productive cooperation can be thought of as a public good and may accordingly deserve public subsidy. Associations of SMEs can help to foster various forms of productive cooperation. Associations with both LE and SMEs can be a breeding ground for production associations of the vertical type. Some associations are captured by the large firms or even a subset of the small ones, in which case their value to SMEs often falls, making an alternative association desirable.

Training Institutions and Service Centers

By increasing the supply of efficient SMEs, training and technological assistance contribute to both horizontal and vertical linkages. When the relevant institutions also provide their services to groups of firms, or generate ideas and advice useful for the effective functioning of clusters and/or of vertical linkages, there is a further bonus.

frequent complaint of SMEs against their larger competitors and against each other, an irritant which can undermine the development of the

cohesive ambience which favors effective clusters. On the other hand, a certain degree of worker mobility cannot be proscribed and is desirable both for efficient reallocation of labor and for the diffusion of ideas and techniques. The extended family setting of small firm clusters may facilitate an acceptable compromise.²³ Apprenticeship rules, training subsidies, or some other system of socializing the costs of training best done in the firm can be helpful. The German system of sharing in-house training costs provides a relevant model. The absence of such a system tends to discourage SME participation in training and in skills upgrading in general.

Quick and efficient response to the varying needs and problems of SMEs can contribute a great deal to success. In the context of clusters, where many of the technological, managerial and other skill needs will be common across many firms, there is an important role for service centers which deal with a range of issues, sometimes as resolver of the problems, other times as intermediary to put the firms in touch with the person who can resolve their problems. Most public sector centers of this sort around the world have not been effective enough to make a real contribution, but there are centres in successful clusters (e.g. Italy, Taiwan) which provide interesting models. Experiments in progress in various LAC countries need to be evaluated.

Multi-Pronged Approach to the Encouragement of SME Linkages

Several types of support for interfirm cooperation involving SMEs are solid candidates for “best practice” status. These include:

- (i) support for local and international fairs; subsidies to foreign buyers to visit fairs, producers' groups etc.;
- (ii) support for relevant business associations--sometimes umbrella SME

associations, sometimes industry-specific ones, often local ones;

- (iii) practically oriented support for large-small linkages, e.g. along the lines of the SEBRAE program in Brazil;
- (iv) SME network support programs, of which the Danish Network Cooperation Program and Chile's PROFOs are good examples;
- (v) support for education and training institutions and other types of infrastructure which could contribute to potential or actual groups of SMEs;
- (vi) encouragement of SME suppliers through public sector purchasing (e.g. the Ceará program);
- (vii) subcontracting exchanges;(although it is not clear whether their payoff will be large, nevertheless, their modest costs makes them a logical component); and
- (viii) collection and organization of information on important SME sectors, relationships among firms, leaders in each sector and region; serious monitoring of the programs which are put into place.

With respect to how to carry out policies, two points deserve further comment. First, support should be provided on a group basis where possible, in order to increase the chances of interfirm cooperation. Second, the modus operandi of support systems and their components should be one-shot or time-limited, when possible, in order to avoid the creation of permanent bureaucracies, at least until the benefits have been shown to be clearly satisfactory. Thus, for example, subsidies for participation in any given network should normally be time-limited.

²³ A mutually satisfactory pattern in this regard seems to occur within the Japanese system. There is a considerable flow of skills from the large to the small and there does not appear to be too much complaint of pirating from the latter.

These specific initiatives and approaches should be complemented by a set of policies which are likely to improve the performance of SMEs in general, and with it the likelihood of effective interfirm cooperation. Since SMEs in clusters and/or interacting with large firms are often the most successful components of the SME world, the most important payoffs to such policies will often be reflected in the collective performance of these two groups of SMEs. Falling in this category are SME-friendly labor and tax legislation and administration, as red-tape-free a regulatory setting as possible, and an effective dispute settlement system. Achieving such policies usually means that the interests and potential contribution of SMEs are being taken into account in overall policy-making, something which has not been prominent in the history of policy-making in Latin America.

Not all elements of the above package will be relevant in each country. Some countries already have a good part of the list under implementation. For those which do not, it will normally make sense to begin with some of the simpler, more common steps; support for fairs would be the most obvious.

At this time, the evidence is too scanty to permit useful generalizations on a number of possibly useful components of policy for SME linkages. A variety of experiments are taking place whose

results are only starting to come in. The value of some types of support are established in other countries (e.g. technological support centers) but it remains to be seen whether they can be made to pay off in a reasonable period in Latin American countries. The following initiatives appear to fit in this category:

- (i) support for the development of intermediaries which show promise of connecting groups of SMEs to non-local (often international) markets (e.g. the trading companies of Mexico);
- (ii) mandated subcontracting (e.g. of the type implemented in Korea);
- (iii) a more competitive financial system, which might improve SME access to credit;
- (iv) invitation to MNCs which have experience with and interest in developing SME supplier networks (e.g. the Japanese in Mexico, Brazil);
- (v) support for service centers, where there are grounds to believe that they could perform well--not, it seems, the typical experience in developing countries.

Lessons for the IDB: Areas of Possible Involvement

Many of the countries of LAC are in broadly similar situations with respect to the current roles of SMEs, the overall policy setting and the challenges to be met. The record so far reveals a few impressive cluster-type phenomena and modest levels of vertical subcontracting. Past policy toward the SME sector has tended to be weakly designed and implemented, and the information base is not good. Some areas of possible IDB involvement are ones in which the first challenge is to figure out in detail what works in a given setting, drawing on the positive and negative experiences of other countries and parts of the world. Fortunately, there are a

number of recent promising policy initiatives in individual LAC countries.

Most types of involvement which warrant consideration would call for both financial resources and technical assistance. The IDB could take advantage of economies of scale that result from similar settings in many LAC countries, and the Bank's role as a repository of knowledge of what works and what does not.

Each of the suggested "best practices" mentioned in the previous section warrants some consideration, depending on the country. For example, though some countries have long

experience with trade fairs and with sending businessmen to fairs abroad, others may not.

As with government support activities in the region, IDB initiatives should normally be time-limited in character, with the possible exception of the professional secretariat role suggested.

Assistance in the Development of SME Network Support Programs. " \1 2

The Danish Network Cooperation Program, other European systems, and Chile's PROFOs provide interesting models for systems designed to facilitate interfirm cooperation among SMEs. Most LAC countries should contemplate something along these lines within the foreseeable future. Considerable assistance could be productively used at the design and early implementation phases for countries starting at ground level, and in strengthening or restructuring for countries which already have a system of this sort.

Assistance in the Development of Support Systems for Large-small Linkages. " \1 2

Brazil's SEBRAE program offers perhaps the most interesting model. The Japanese are participating in work along these lines in Mexico. Although not all countries might benefit from such a program, it deserves consideration in the larger, more industrialized ones. Outside assistance could again be useful.

Strengthening Local Training Institutions

Some educational and many training institutions are undergoing a process of reform in LAC, reflecting the evolution of technology, economic liberalization, and other factors. It is widely recognized that some of these institutions should be shifting their attention from LEs to SMEs, which cannot be expected to take care of all their training needs in-house, yet whose need for flexibility and capacity to handle medium-level technologies implies frequent retraining of personnel. In some LAC countries the evolution towards well-functioning institutions in this training-education domain is in its early stages; it may turn out to be one of the most important determinants of overall SME success.

These reforms are relevant both to SMEs in general and to those SME which participate in relatively dense linkage networks. As emphasized above, overall SME capability is a main determinant of their ability to enter vertical linkages. Although the large partner may take on the task of completing the "education" of the small one in how to be a good subcontractor, it will only do so for those which have already reached a certain performance level. In the somewhat different world of horizontal linkages, where the efficiency of firm clusters depends on each participant, performance skills usually depend significantly on public sector training institutions.

Other Specific Institutional Improvements

Trading companies, subcontracting exchanges, support for the creation of SMEs by former employees of large firms, and technology search and transfer institutions, all merit consideration. With respect to trading companies, a first step would be to locate experts to assess their potential, the forms of support which help to bring them into existence, and their likely effects.

Since the apparently modest success of subcontracting exchanges may be due to the simplistic manner of their introduction, expert assistance might help to counter this general weakness.

Fundacion Chile is the prototype within LAC of the technology search and transfer institution. It appears to have achieved enough success to warrant replication in other countries.

Improving Information Systems

Better information systems are important to SMEs since costly information places them at a disadvantage vis-a-vis large firms for whom the fixed cost of information does not loom so large. Information benefits provide the main *raison d'être* for trade fairs, service centers, and many SME programs. Three special types of information warrant separate attention.

Information Base for SME Policy.

No Latin American country has a satisfactory body of up-to-date, comprehensive and usable information on SMEs, of the sort that governments need in order to make correct policy decisions and provide appropriate support to the sector. Some currently missing types of information need to be collected. A reasonable amount of information does exist in most LAC countries, but it is not easily accessible, full of errors and biases which only close students of the sector are likely to be aware of and, in short, not organized in a timely and useful way. There is no way, with reasonable dispatch, to assess the aggregate impact of any SME support program.

Economic Information System for SMEs

SMEs themselves need not only technical and marketing information of the sort which must be provided by more specialized institutions, but also more general macroeconomic information on what is happening in the country, in world markets, in the financial sector, and in the composition of output and demand at home and abroad. While general sources provide much of this, they do not organize and summarize it in a way that makes it useful to SMEs. Various industrialized countries have such information systems and associated publications, which could serve as models.

Information on Human Resources Abroad and How to Locate them

SMEs often need technological assistance to organize the workplace and the like, which cannot be provided locally. This is especially the case when they are exporting or want to begin exporting, since the requirements of foreign markets are not as well known to local consultants. A system designed to connect SMEs to foreign sources of expertise would have a considerable payoff in many situations.

Bibliography

- Amadeo, Edward J. (1995). "Small Enterprises, Employment and the Quality of Jobs in Brazil", mimeo.
- Arzeni, Sergio (1995). "International Seminar on Local Systems of Small Firms and Job Creation-Background Paper".
- Aoyama, Y. and M.B.Teitz (1996) *The Use of Small Business Policy: A Comparative Analysis of Japan and the United States*. Policy Paper in International Affairs. Institute of International Studies. University of California at Berkeley.
- Baek, Nak Ki (1992). "The Exploitation of Niche Markets by Small and Medium Korean Enterprises" *Small Enterprise Development*, Vol. 3, No. 3, September.
- Becattini, Giacomo (1990). "Italy" in Sengenberger et al (1990). *Re-emergence...*
- Becattini, Giacomo (1992). "The Marshallian Industrial District as a Socio-economic Notion" in Pyke, Becattini and Sengenberger (editors) *Industrial Districts*.
- Berry, R. Albert (1992). "Firm (or Plant) Size in the Analysis of Trade and Development" In Gerald K. Helleiner (editor) *Trade Policy, Industrialization and Development: New Perspectives*, Clarendon.
- Berry, Albert and José Escandon (1994). *Colombia's Small and Medium-Size Exporters and Their Support Systems*. Washington, D.C.: World Bank, Policy Research Department Working Paper 1401, Dec. 1994.
- Berry, Albert and Brian Levy (1994). *Indonesia's Small and Medium-Size Exporters and Their Support Systems*. Washington, D.C.: World Bank, Policy Research Department Working Paper 1402, Dec. 1994.
- Bhalla, A. S. (1991). *Small and Medium Enterprises: Technology Policies and Options*. Greenwood Press for the United Nations Center for Science and Technology for Development.
- Boscherini, Fabio and Gabriel Yoguel (1995). "Innovative Processes in SMEs: Some Considerations from the Argentine Experience." Final Draft Report, Buenos Aires: ECLAC.
- Buxedas, M., G. Sanromán, E. Errea, and L. Stolovich (1995). *Las PYME en Uruguay; Desempeño y Perspectivas*. Montevideo: Centro Interdisciplinario de Estudios Sobre el Desarrollo (CIEDUR).
- Capecchi, Vittorio (1992). "A History of Flexible Specialisation and Industrial Districts in Emilia Romagna" in Pyke, Becattini and Sengenberger (editors) *Industrial Districts..*
- Cawthorne, Pamela M. (1995) "Of Networks and Markets: The Rise and Rise of a South Indian Town, the Example of Tiruppur's Cotton Knitwear Industry". *World Development*. Vol. 23, No. 1, Jan.
- Comisión Económica para América Latina y el Caribe (CEPAL) (1994). *Ruedas de Negocios y Cooperación Empresarial en el MERCOSUR*. Buenos Aires: CEPAL, Documento de Trabajo No. 56.
- Cho, Myungrae (1995). "Interfirm Networks: The Foundation of The New Globalization Economy of South Korea", paper prepared at the UNCTAD workshop Poverty Alleviation through International Trade, Santiago, Chile.

Cortes, Mariluz, Albert Berry and Ashfaq (1987). *Success in Small and Medium-Scale Enterprises: The Evidence from Colombia*. Oxford University Press.

Dini, M. (1993). *Los Proyectos de Fomento*. Santiago: SERCOTEC.

Durán Castro, Nestor (1995). “La Agroindustria del Ate o Pasta de Guayaba y la Panela Como Factores de Cambio Para el Alivio de la Pobreza en Colombia”, paper prepared for the UNCTAD workshop "Poverty Alleviation through International Trade", Santiago, Chile.

Franchi, M. (1994). “Developments in the Districts of Emilia-Romagna” mimeo, Department of industry, Emilia-Romagna Region. (Cited by Humphrey and Schmitz, 1995)

Fuenzalida, Luis Arturo (1990). *Progreso de la Pequeña Industria Vis-a-Vis Obstáculos del Entorno*. Santiago, Chile: Universidad de las Americas, Facultad de Ciencias Economicas y Administrativas.

Gatto, Francisco and Carlo Ferraro, “Las PYMes en el Mercosur: Definiciones y primeras estimaciones”, Buenos Aires: Documento de Trabajo CFI-CEPAL No. 37. Julio, 1993.

Gatto, F. and G. Yoguel (1994). “Las PYME argentinas en una etapa de transición productiva y tecnológica” in B. Kosacoff (editor) *El Desafío de la Competitividad*. Alianza.

Gatto, F. (1995). “Las exportaciones industriales de pequeñas y medianas empresas” in B. Kosacoff (editor) *Hacia una nueva estrategia exportadora*. Universidad de Quilmes.

Herbert-Copley, Brent (1990). “Technical Change In Latin American Manufacturing Firms: Review and Synthesis”. *World Development*, Vol. 18. No. 11.

Hillebrand, W. (1991). *Industrielle und Technologische Anschlussstrategien in Teilindustrialisierten Landern*, Berlin, German Development Institute.

Holmstrom, M. (1993) “A New Direction for Indian Industry? Bangalore as an industrial District”, Report to the Overseas Development Administration. Norwich, School of Development Studies, University of East Anglia.

Humphrey, John (1995) “Industrial Reorganization in Developing Countries: From Models to Trajectories”, *World Development*. Vol 23, No. 1, Jan.

Humphrey, John and Hubert Schmitz (1995). “Principles for Promoting Clusters and Networks of SMEs”. Paper commissioned by the Small and Medium Enterprises Branch, UNIDO, Number 1.

Institute of Developing Economies (1995). *The Role of Japanese Direct Investment in Developing Countries: Brasil, Mexico, Philippines*. Tokyo: Institute of Developing Economies.

Kagami, M. (1993). “Brazilian and Mexican Small-scale Enterprises: A Case Study” in *The Voice of East Asia, Development Implications for Latin America*, Tokyo: Institute of Developing Economies.

Kaplinsky, Rafael (1994). *Easternization: the Spread of Japanese Management Techniques to LDCs*. London: Frank Cass.

Kaplinsky, Rafael (1995). "Technique and System: The Spread of Japanese Management Techniques to Developing Countries", *World Development* Vol 23, No. 1, Jan.

Kashyap, S.P. (1992). "Recent Developments in the Small Enterprises Sector in India; Economic and Social Aspects". Discussion Paper No. 48, Geneva: International Institute for Labour Studies, ILO.

Kim, Linsu and Jeffrey Nugent (1993). *Korean SMEs and Their Support Mechanisms: An Empirical Analysis of the Role of Government and Other Non-Profit Organizations*, mimeo.

Kim, Linsu, Jeffrey Nugent and Seung-Jae Yhee (1995) "Transaction Costs and Export Channel Evaluations by Korean SMEs", Paper presented at the 70th Annual WEA International Conference, San Diego, July.

Klein, Enio Erni (1995). "How to Make Development Happen (Through Clustering of Small and Medium Size Enterprises)" Paper presented at the UNCTAD workshop "Poverty Alleviation Through International Trade" Santiago, Chile, January.

Koshiro, K (1990). "Japan" in Sengenberger et al (eds). *The Re-emergence...*

Kuriyama, N. (1990). *Recent trends of industrial subcontracting in Japanese manufacturing industry*, Discussion Paper No. DP/24/90, Geneva, International Institute for Labour Studies.

Lazerson, Mark H. (1995), "Subcontracting in the Modena Knitwear Industry" Chap 7 in Pyke, Becattini and Sengenberger. *Industrial Districts*.

Levy, Brian (1988). "Korean and Taiwanese Firms as International Competitors: The Challenges Ahead", *Columbia Journal of World Business*, Vol. 23, No.1.

Levy, Brian (1990). "Transactions Costs, the Size of Firms and Industrial Policy: Lessons from a comparative Analysis of the Footwear Industry in Korea and Taiwan", *Journal of Development Economics*.

Levy, Brian, et al (1994). *Technical and Marketing Support Systems for Successful Small and Medium-Size Enterprises in Four Countries*, Washington, D.C.: World Bank, Policy Research Department Working Paper 1400, Dec. 1994.

Marcovitch, Jacques (1993) "Technological innovation and small firms" in Brigitte Spath (editor), *The Role of the Institutional Environment, Human Resources, and Industrial Relations*, Geneva: International Institute for Labour Studies.

Marx, R. (1993). "Quality and productivity in small and medium-sized firms in the Brazilian automotive industry", *IDS Bulletin*, Vol. 24, No. 2.

Mead, Donald C. and Peter Kunjeku (1993) "Business Linkages and Enterprise Development in Zimbabwe", Gemini Technical Report No. 55, Gemini, Bethesda, Maryland.

Messner, Dirk (1993) "Shaping Competitiveness in the Chilean Wood-processing Industry" *CEPAL Review*, no. 49, April.

Meyer-Stamer, Jorg, (1995) "Micro-Level Innovations and Competitiveness" *World Development*, Vol 23, No. 1, Jan.

Montoliu Muñoz, Marisela (1995). "Blessing or Curse? Oil Riches, Economic Policy, and the Restructuring of Venezuela's Plastics Manufacturing", Ph. D. Dissertation, Department of Urban Studies and Planning, Massachusetts Institute of Technology.

Moori-Koenig, Virginia and Gabriel Yoguel (1995). Perfil de la Insercion Externa y Conducta Exportadora de las Pequeñas y Medianas Empresas Industriales Argentinas". CEPAL-Buenos Aires, Documento de Trabajo No. 65.

Muñoz, Oscar (1989). "El estado y la pequeña y mediana empresa: hacia un nuevo enfoque de politica industrial en Chile", Centro de Fomento de la Pequeña y Mediana Empresa (CEFOPE), Vol. 3.

Nadvi, K. and H. Schmitz (1994) "Industrial Clusters in less Developed Countries: A Review of Experiences and Research Agenda" *Discussion Paper 339*, Institute of Development Studies, University of Sussex, Jan.

Pedersen, P.O., A. Sverrisson and M.P. van Dijk (editors) (1994) *Flexible Specialization: The Dynamics of Small-scale Industries in the South*. London: Intermediate Technology.

Piore, Michael J. (1992). "Work, Labour and Action: Work Experience in a System of Flexible Production" in Pyke, Becattini and Sengenberger. *Industrial Districts...*

Piore, Michael J. and Charles Sabel (1984). *The Second Industrial Divide*. New York: Basic Books.

Pyke, Frank, (1995) "Comparing Small and Large Firms in Europe: Prospects for Incomes and Working Conditions" paper presented on behalf of the OECD at the high-level workshop on SMEs "Employment, Innovation and Growth", Washington, D.C. June, 1995.

Pyke, Frank and Werner Sengenberger (1992) (editors). *Industrial Districts and Local Economic Regeneration*, Geneva: ILO, International Institute for Labour Studies.

Pyke, Frank, G. Becattini and Werner Sengenberger (1992) (editors). *Industrial Districts and Inter-Firm Cooperation in Italy*. Geneva: International Institute for Labour Studies.

Quintar, Aida, Ruben Ascuá, Francisco Gatto and Carlo Ferraro (1993) " Refaela: Un Cuasi-distrito Italiano ' A La Argentina", Documento de Trabajo CFI-CEPAL No. 35, Buenos Aires, Febrero, 1993.

Rabellotti, R. (1995). "Is There an 'Industrial District Model'? Footwear Districts in Italy and Mexico Compared" *World Development*, Vol 23, No. 1, Jan.

Recart, Maria Olivia (1995). "SME: Job Creation and Technology Transfer, Fundacion Chile's Experience" presented at the OECD High-Level Workshop on SMEs: Employment, Innovation and Growth" Washington, D.C., June.

Redding, S.G. (1990). *The Spirit of Chinese Capitalism*, Berlin: de Gruyter.

Roberts, M.J. and J.R. Tybout (1995). "An Empirical Model of Sunk Costs and the Decision to Export" *Policy Research Working Paper 1436*, Policy Research Department, Finance and Private Sector Development Division, The World Bank, Washington, D.C.

Rosenfeld, Stuart A. (1994). "Industrial Strength Strategies: Regional Clusters and Public Policy". Regional Technology Strategies Incorporated.

Román Gonzalez, Enrique (1994). *PYME: Un Desafío a la Modernización Productiva*. Santiago, Chile. Corporacion de Fomento de la Produccion (CORFO) and Fundacion Friedrich Ebert.

Ruiz Duran, Clemente (1995) *Economía de la Pequeña Empresa: Hacia una Economía de Redes como Alternativa Empresarial para el Desarrollo*, Mexico D.F.: Ariel Divulgación.

Ruiz Duran, Clemente, and Mitsuhiro Kagami (1993) *Potencial Tecnológico de la Micro y Pequeña Empresa en México*. México: Nacional Financiera, Biblioteca de la micro, pequeña y mediana empresa No.5.

Sabel, C.F. (1992). "Studied Trust: Building New Forms of Cooperation in a Volatile Economy" in Pyke and Sengenberger (editors), *Industrial Districts*

Sandee, H. (1994). "The Impact of Technological Change on Inter-firm Linkages; A Case Study of Clustered Small-scale Roof Tile Enterprises in Central Java", in Pedersen et al (eds).

Schmitz, Hubert (1995) "Small Shoemakers and Fordist Giants: Tale of a Supercluster" *World Development*, Vol. 23, No. 1.

Schmitz, Hubert and Bernard Musyck (1993). "Industrial Districts in Europe: Policy Lessons for Developing Countries?" Discussion Paper No. 324 (Brighton, IDS).

Schmitz, Hubert (1995). "Collective Efficiency: Growth Plan for Small-Scale Industry" *The Journal of Development Studies*, Vol. 31, No. 4, April.

Scitovsky, Tibor (1985). "Economic Development in Taiwan and South Korea: 1965-81" *Food Research Institute Studies*, Vol. XIX, No. 3.

Semler, R. (1993). *Maverick*, London: Century Publishing.

Sengenberger, Werner, Gary W. Lovement and Michael J. Piore (1990). *Re-emergence of Small Enterprises: Industrial Restructuring in Industrialized Countries*, Geneva: International Institute for Labour Studies.

Sengenberger, Werner, and Frank Pyke (1992). "Introduction" in Pyke, Becattini and Sengenberger. *Industrial Districts..*

Shapira, Philip (1990). "Japan's Kohetsushi Program of Regional Public Examination and Technology Centers for Upgrading Small and Mid-Size Manufacturing Firms." West Virginia University, Regional Research Institute, Research Paper 9019.

Smyth, I. (1992). "Collective Efficiency and Selective Benefits: The Growth of the Rattan Industry of Tegalwangi (Indonesia)" *IDS Bulletin*, Vol. 23, No. 3, July.

Spath, Brigitte (1993). "Small firms in Latin America: Prospects of economic and socially viable development" in Brigitte Spath (editor), *The Role of the Institutional Environment, Human Resources, and Industrial Relations*, Geneva, International Institute for Labour Studies.

Swaminathan, Padmini (1995) "The Knitwear Cluster in Tiruppur: An Indian Industrial District in the Making?" Paper presented at the UNCTAD workshop "Poverty Alleviation Through International Trade" Santiago, Chile, January.

Tarago, Eduardo (1995). "SMEs and Employment Generation; Analyzing an Experience in the Southern Cone: Uruguay" presented at the OECD High-Level Workshop on SMEs: Employment, Innovation and Growth Washington, D.C., June.

Távora, José I. (1995). "Ni Mercados ni Jerarquías: Notas Sobre Las Políticas de Promoción a la Pequeña Empresa en el Perú." Paper delivered at the 1995 meeting of the Latin American Studies Association, Washington, D.C.

Tendler, J. and M. Amorim (1996). "Small Firms and Their Helpers: Lessons on Demand" *World Development*, March.

Tewarie, M. (1992). "Understanding the Organisation of Work: The State, Inter-sectoral Linkages, and the Historical Conditions of Accumulation in Ludhiana's Industrial Regime," mimeo. Cambridge, MA, Department of Urban Studies and Planning, MIT.

Tewarie, M. (1994). "Sub-contracting Relations in an Age of Flexibility: Some Issues of Relevance for Indian Manufacturing", Discussion Paper, Employment Department, ILO, Geneva.

Tokman, Victor E. and Emilio Klein (editors) (1995). *Regulation and the Informal Economy: Microenterprises in Chile, Ecuador, and Jamaica*, Lynne Rienner Publishers.

Triglia, Carlo (1995). "Work and Politics in the Third Italy's Industrial Districts" Chap. 10 in Pyke, Becattini and Sengenberger. *Industrial Districts*

Vargas Peña, AsunciOn (1995). "Conglomerado de Micro y Pequeñas Empresas de Calzado de Trujillo y Programas de Apoyo de FONCODES", Paper presented at the UNCTAD workshop "Poverty Alleviation Through International Trade" Santiago, Chile, January.

Vega Centeno, M. (1983). *Crecimiento, industrialización y cambio técnico: Peru 1955-1980*. Lima: Pontificia Universidad Católica del Perú.

Villarán, Fernando (1989). *Innovaciones tecnológicas en la pequeña industria*. Lima: Fundación F. Ebert.

Villarán, Fernando (1993). "Small-scale Industry Efficiency Groups in Peru" in Brigitte Spath (editor) *Small Firms and Development in Latin America: The Role of the Institutional Environment, Human Resources, and Industrial Relations*, Geneva: International Institute for Labour Studies.

Weimar, S. (1990). "Germany" in Sengenberger et al (1990). *Re-emergence...*

Weijland, H. (1994). "Trade Networks for Flexible Rural Industry" in Pedersen et al (eds) *Flexible Specialization...*

Yoguel, Gabriel (1996). "Las estrategias de cooperacion interempresarial: La participación de las PYME argentinas y brasileras." mimeo.

Young, Robert C. (1993). "Policy Biases, Small Enterprises and Development" *Small Enterprise Development*, Vol. 4, No. 1, March.

Young, Robert C. (1994). *Enterprise Scale, Economic Policy, and Development: Evidence on Policy Biases, Firm Size, Efficiency, and Growth*, San Francisco: ICS Press, An International Center for Economic Growth Publication.

