Corporate Governance and Competence in SME's in India

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Competence of a small firm depends crucially on how the firm manages and mobilizes its resources. This happens through corporate governance. Weak corporate governance of small firms, burdened further with poor availability of crucial factors have made these firms extremely vulnerable to closure. Large firms have, in general, failed to provide inputs of governance and factors to these small firms. However, a neighborhood enjoys privileged information; and firms in a neighborhood can access better resources, better governance and increased competence through market-based intra-cluster transactions. This calls for setting up of cluster based stock exchanges or technology exchanges where small firms can transact in prices. We argue that such exchanges can increase immensely the competence of small firms.

Introduction

The manufacturing competence of a firm or of an industry sector is directly related to issues of corporate governance. This competence is reflected in the manner a firm identifies and organizes skills and information, how a firm arranges for credit and how marketing relations provide feedback to manufacturing. Corporate governance refers to the power to arrange for such resources from both within and outside the firm.

This power gets accumulated over the history of the firm, through the cluster in which the firm operates and finally through the industry sector and the country of operation. The accumulation of competence is thus dependent on the accumulated capability to govern. Hence, manufacturing competence is path-dependent: and this dependence is related not only to the firm's history but also to the path that the industrial system in general and local industrial milieu in particular has passed through.

The regulationist school of thought holds that the country or region-specific systems of regulations control the path chosen by a firm. Such regulations refer to the nature of macro agreements with labour, or the constraints in receiving credit or the difficulties in marketing or in receiving inputs of current technological knowledge.

We would differ from this account to point out that a meso-system, operative at the local level, retains much of the force determining the path of a small and medium enterprise (SME) firm. Certainly the larger policy set of the political government at the macro level sets the overall pattern; however, within this pattern, it is the local meso-level milieu that determines the characteristic behaviour of corporate governance. The local industrial milieu appears to be dominant.

We will reflect on how such paths influence the modes of mobilization of resources by a SME firm towards attaining higher levels of manufacturing or general competence. Such competences provide a firm with strategic advantage.

Modes of mobilization of resources are but modes of corporate governance.[1] Therefore, in our view, primarily the local industrial milieu, and only secondarily the larger industrial system, determines how an SME chooses to garner and mobilize resources to attain strategic competitive advantage. In the case of a large firm, this advantage might refer to the broad global or national market: but in the case of an SME it would refer mostly to the local cluster or to the relations that the SME maintains as a supplier to large firms.

It has been pointed out how clusters and the competence of clusters determine the strategic advantages of SMEs. This view argues that the mere existence of competition is not sufficient. The Japanese experience has shown how cooperation embedded within competition provides leverage. Clearly, the levels of competence and corporate governance in SME are much less determined by individual firms set against the national or global backdrop, but instead are largely influenced by the meso-level local milieu of cooperation and competition.

In order to investigate these aspects we undertook a survey of firms, mostly SMEs in the National Capital Region (NCR) around Delhi in 1996-98. Our objective was to study the modes of internal organization within a firm through which it mobilizes and develops its resources to gain strategic competence.

A Report[2] was submitted on this study to the sponsor, the National Information System for Science and Technology (NISSAT), of the Department of Scientific and Industrial Research (DSIR), Government of India.

This article borrows from that study in support of its thesis regarding corporate governance in SME. For our present purpose, we will refer to only a few points of that study, and in conclusion will suggest some policy measures.

Framework of competence

The competence of a firm is a result of how the corporate governance of that firm developed, organized and mobilized several types of resources over a period of time. We believe that competence reflects accumulation, and so we studied panel data as reflecting the status of accumulation. The resources we refer to are several, such as information, skill, capital, design capability, degree of customization, modes of learning and management of knowledge.

A framework of competence there-fore refers to the "organization within a firm" through which such resources are developed, differentiated, arranged and mobilized. Weakness of governance would be evinced when a firm fails to build up and deploy the framework to the desired level.

This desired level, however, as argued above, is not benchmarked by competition alone. On the contrary, much of the benchmarking depends upon cooperation within a cluster and across dissimilar industrial sectors where individual firms do not share common business transactions.[3] Our chosen framework therefore refers to the set of practices generally adopted by several firms in the NCR. Firms in such a milieu can always refer back to a set of indicators for the purposes of comparison.

In order lo reflect upon the structure of competence, we can use the following eight dimensions of competence:

- Accounting or asset-value based competence;
- Resources of skill;
- Design skill;
- Capability to customize;
- Capability to generate, deploy and use information;
- Modes of meeting competition;
- Achievement of quality; and
- Management of learning and knowledge.

Each dimension of competence then can be subdivided into several specific types of resources and capabilities. To provide certain clues into the working of corporate governance towards achievement of strategic innovative capability we can provide examples. Asset-value based competence, for example, can be measured by 'capital per employee' or 'communication cost per output'. Resources of skill can be appreciated through 'total skill enhancement', 'skill-shopfloor-RM integration' (RM - repairs and maintenance). Information competence can be appreciated through reckoning 'enterprise process data intensity', 'employee accessing external information', or 'enterprise informatization'.

Data sources and dimensions

One of the most important resources is information. This resource, unlike the resource of capital, for example, increases in value with increasing uniqueness or dissimilarity. Information when available publicly, such as from databases, is common to all. The only barrier or factor responsible for competitive or innovative advantage can be the affordability of the price of data. In fact, freely available public sources of information provide a common denominator of opportunities to all firms. Firms would differ only if corporate governances vary across firms in mastering public information.

Sources of information to a firm

Proprietary information, when leveraged through organizational governance, provides the key to sustainable competitive or innovative advantage. This information would again vary, depending upon the differences across sources from where such information was solicited. We identified several types of sources of proprietary information:

- Own dealer;
- Market survey;
- Own vendors or suppliers;
- Own servicing team;
- Own marketing team; and
- Partner in joint venture or in network.

Our data showed that own marketing team and market surveys are the most used sources across all sizes of firms. Vendors too are important sources of information. There are variations by firm size-differences in the use of sources.

Among the very small firms, with turnover less than Rs 10 million (US$235,000), less than half of the firms fail to make use of information sources. As a result, such tiny firms lose the basic sources of innovation. Only 13 per cent of such firms made use of dealers, market surveys, own marketing team or partners as sources of information. As many as 38 per cent of such firms depended more on information provided by vendors or suppliers, and servicing teams.

In all areas, however, large firms having turnover near or higher than Rs 1,000 million ($23.5 million) made much intensive use of all types of sources of information. All large firms used market surveys; and 80 per cent of such firms used dealers, vendors and suppliers and own marketing team as sources of information.

Most (60 per cent) firms with turnover less than Rs 50 million ($1.12 million) used information provided by their own marketing team. About 30 per cent of such firms also used market surveys and joint ventures or network partners as their sources of information. When firms engage in businesses requiring additional knowledge (the "high technology" group of firms), however, the size of the firm does not appreciably alter the use of information sources. In such cases tiny, small and large firms all depend on similar types of information sources.

Product Information

Another important source of information is prior knowledge about the product. For example, firms might have better access to product information because, prior to manufacturing the product, they used to service or market the product (manufactured abroad). We did not find any tiny firm in this category, however, nearly a third of small firms(turnover less than Rs 50 million or $1.12 million), and 50 percent of medium-sized firms (turnover less than Rs500 million or $ 11 million) made use of this prior knowledge as the source of information. Understandably, large firms did not use this source.

Another source of information is servicing products made by other firms. About a quarter of tiny firms, and little more than a third of small and mediumfirms secure information through servicing products made by others, in fact,s ecuring this information is the first step to undertaking later manufacture of similar products.

Possibly the most important sources of information are generating test- and engineering data on competitors' products, and then undertaking reverse-engineering. Remarkably, nearly two thirds of firms - of all sizes, from tiny to very large, including small and medium - generate information from test and engineering data. Reverse-engineering, however, appears to be less popular. About two thirds of small firms undertake reverse engineering to secure information, while a handful of tiny firms and half of the medium firms do so.

Organizing information

There are two facets of information organization. The first facet relates to the technical organization of information. and the second facet refers lo management routines or corporate governance practices employed to organize information. The

technical organization is arranged again in two types: through keeping and maintaining data as databases, and employing technical means such as local-area-network (LAN) to gather and distribute data inside the organization.

Organizations maintain several types of databases, such as on engineering, manufacturing, inventory and marketing. The use of engineering databases is more popular than of manufacturing or inventory databases among tiny firms. Nearly three fourths of medium firms and about half the small firms use engineering databases. Few of the small firms use marketing databases while nearly half the medium firms do. In correspondence with accumulating data, firms use computer facilities including LAN to provide access to such data. With increasing sizes of firms the use of LAN progresses. Less than half the tiny firms make use of computers and LAN while about 65 per cent of medium firms do.

Arrangements for organizing information can take several forms. Some organizations use explicit policies on in-house training and sometimes on-the-job training (OJT) to manage knowledge and learning. In other cases "firms depend on recruiting experienced manpower, and here mobility matters.

Such mobility varies across organizational size. For example, in only 20 per cent of tiny firms was there any mobility between the firm and the vendors or suppliers, and these tiny firms did not experience any other type of mobility. However, in half the medium-sized firms, there was mobility across several levels - with vendors/suppliers, technical collaborators and partners or consultants.

Another aspect of organizing information refers to integration between several functions or departments or skill-bases or across distinct business processes. The two most common modes here are: encouraging multi-skilling and job-rotation, and integrating repair and maintenance (RM) with other business functions such as manufacturing or marketing.

A third aspect - and this is very important for small and tiny firms that have a large number of unskilled and illiterate workers - is to make efforts to shift workers to the literate and skilled state as part of a strategy to develop specific assets within the organization. As many as 70 per cent of all medium firms, 70 per cent of small firms and only 20 per cent of tiny firms deployed explicit policies on OJT.

Interestingly, because of their small size, 25 per cent of small firms actively encourage multi-skilling, while only about 10 per cent of medium firms would do this. In all cases except for tiny firms, however, about 70 per cent of workers are multi-skilled.

A simple method, reminiscent of, and possibly a precursor to, the Kanban system, is practised where workers would record data on the shop floor. If we look at firms divided along industry sectors, we observe that in auto components, electrical and telecommunications, nearly a third of the firms partly record such shop floor data while another third fully record it, and the rest do not record it at all. In engineering products, nearly half the firms do not record any data and about the same number of firms record data completely.

Competence characteristics

Cluster market and competence

Typically an accounting system records the value of an asset. This system fails to provide the risk characteristics of the asset under question. As a result, a mark-to-market valuation of the assets or resources of a firm, even if that is part of the accounting, such as in the 'receivables', fails to get a properly risk-weighted value. More importantly, for most assets the "market" does not really exist. Even where it does, because of a lack of reliable information, it would in all likelihood undervalue the assets of a firm.

This implies that the value of a firm is crucially dependent on the existence of a market that deals in the assets under question. For SMEs, the problem of reliability and availability of information is very acute - in fact, in most instances, information on a small firm is not known - or not reliably or quantifiably known - to other firms dealing in the same goods but situated in a geography only a little distance away.

As a result, even its competitors do not know the value of the assets of a small firm. In other words, these firms fail to compete because, without information, firms cannot engage in competition. In short, either a small firm belongs to a highly fragmented market, or there does not exist any market at all.

This market failure leads us to believe in the importance of the cluster or neighbourhood as the market-in-proximity, dealing in similar or substitutable goods and dependent upon substitutable resources. We can hypothesize two types of clusters: the similar-goods cluster, dealing in substitutable goods or services as the firm's out-put, and the similar-factor cluster, dealing in similar types of resources or factor markets. Most of the region we studied (NCR) belong to this latter type of cluster.

This cluster as market would enjoy several benefits:

- Information on factor market, especially regarding the quality of assets and respective prices (for example, wages of skilled labour) would be available at near-zero cost;

- Information on the asset valuation of a small firm (which cannot, for example, enjoy a brand name but surely can enjoy the goodwill or goodwill trust in the neighborhood as a whole) would face very low transaction costs. That is, the firm cannot arbitrarily inflate the value of its assets in this market, where neighbouring firms know a lot about it;

- Since each small firm can make small demands on a factor, such as technological knowhow or a common effluent plant or a common testing facility or common marketing logistics - together several firms constitute a sizable demand allowing the price of such factors to come down (because of economies of both scale and scope); and

- A cluster creates a market and hence competition: which refutes the belief that clusters help cooperation through sharing of resources. In general, because of

the existence of information, we emphasize that cooperation hastens information flow, which creates a market, in which these small firms compete to raise competency or innovative capability or strategic advantages.

The competence of a firm is determined, as we argued in the first section, by the mode through which a firm can enjoy several distinct resources or assets. Given a cluster, a small firm is forced to act economically; thus the otherwise non-existent corporate governance now appears even within an SME and this firm now is forced to differentiate and recombine resources that it purchased from the market.

It is amply clear then how the competence of a small firm depends on the prior existence of a cluster. We reject such theses on competence that require any absolute determination of the governance of resources inside a firm. On the contrary, we understand competence to be an open process.

A firm, when competent, can select and bargain for minimal price of assets in the factor market: next, this firm puts a relative value (similar to mark-to-market) to assets it procured from market and to assets that it generated through re-combining several assets within its boundary. AI both these stages of asset procurement and asset generation the firm must keep exchanging information with the markets outside. Because the firm is small, it cannot spend much on information. Hence only if there is a cluster can a small firm hope to become competent.

Another way of looking at this problem is that the corporate governance of an SME cannot possibly reside completely within the firm's boundary. Corporate governance is determined transactionally.

A small firm must always compare with neighbouring firms and, while learning from others, must replace internal governance mechanisms of resource mobilization with a better mechanism being followed in the cluster. This leads us to the concept of cluster-based corporate governance as a very viable - and possibly better way – of developing competitiveness, it appears that the town and village enterprises (TVE) in China followed such a path with success.

Comparative competence: skill

Let us consider a few resources of a small firm from our survey.

Skill is an important resource. However, absolute determination of the value of this resource is very difficult. In our interviews with these firms we understood that aspects of differentiation and recombination of skill resources vis-a-vis how other firms in the cluster achieved the same - would ensure competence (or corporate governance) of the firm in question.

We defined eleven types of indicators of skill resources, such as, 'Higher skill ratio', 'Total skill ratio', 'Skill-shopfloor-RM integration', 'Skill as seniority', 'Multiskill distribution per customization', and similar others. These are meant for inter-firm comparison on (1) degrees of skill as resources, (2) deployment of skills, and (3) genera-lion or enhancement of skill.

Indicators of skill as resource indicate induction and employment of manpower from the factor market. Indicator on deployment ensures alignment and strategic use of skill through use and allocation of skill within the firm. Finally, generation and enhancement refer to training and refocusing of current skills.

Higher skill ratio was defined as the ratio between the number of engineering degree or diploma holders to the number of holders of tradesmen certificates (known in India as the ITI certificate). This value was distributed over differences in firm turnover-size and firm employee-size, and over manufacturing and services. This value exhibited very wide variations.

The next indicator 'Total skill ratio' was defined as the ratio between the total number of engineering degree, diploma and ITI certificate holders to the total number of employees. Distribution of this indicator did not exhibit wide fluctuations, and the mean value of this ratio was 0.01, with a standard deviation of 0.026.

The variable skill-shopfloor-RM integration attempts to correlate integration of shopfloor practice with repair and maintenance practices. RM is an important source of specific asset or competitive advantage. Shopfloor practice too generates another type of tacit knowledge and this specific asset, when combined with the asset of RM, can generate competitive advantage.

This ratio was computed as the product of (the ratio of skilled worker to unskilled worker) and (the percentage of annual RM jobs attended by shopfloor workers) and (the practice of the firm to promote or redeploy the RM workers to either of the departments of engineering. design and testing). This value was distributed over differences in firm turnover-size and firm employee-size, and over manufacturing and services. This variable had a mean value of 0.04with a standard deviation of 0.09.

Another variable, 'Multiskilling distribution per customization' attempted to measure the degree of workforce deployment over multiskilling and over customization of products. Customization may or may not require a multi-skilled workforce, on the contrary, a high skill in one area might be desirable. However, in general, since custom products keep changing, so too the skill requirements would be changing.

Thus multiskilling might be helpful. Moreover, tiny firms reported a high degree of customization. However, tiny firms without multiskilled workforces would not enjoy the flexibility of switching over to other custom products.

A few medium firms did have this ability. This ratio was computed as the product of (percentage of workforce deployed in multiskilling) and (percentage of workforce redeployed from one job/process/machine to another in the last two years, that is job-rotation) and the inverse of (percentage of custom product in total product).This variable too was similarly distributed, and this had a relatively higher standard deviation at 0.11 with a mean value at 0.04.

Comparative competence: informatization

To look at another important resource, we can observe that our indicators or variables must address the following issues:

- Information connectivity of one firm with another;
- Internal organizational information connectivity;
- Information specialization;
- Enterprise-wide informatization;
- Business process informatization; and
- Nature and intensity of informatization.

Information on the industry sector, on factor markets and on demand-side belongs to one domain; while information on internal operations, including inventory, productivity and finance, represents the second dimension; the thirdand most important dimension is about how a firm utilizes external information for internal purposes and for strategy.

Informatization represents the second and third dimensions. The variables must capture the employment of information and data by an employee, the information connectivity of an employee, the employment of information for infra-firm business decisions, and such others.

We formulated eight measures on this, including 'external information connectivity', 'employee accessing external information', and 'enterprise informatization'. As in the case of skill, this group of indicators too cannot measure the absolute utilization of information; on the contrary, the objective was to benchmark a firm against the neighborhood intensity of use of information. These variable values were then distributed over two types of firm sizes, and over the industrial category.

The variable 'external information connectivity' was defined as the product of three decision variables, namely, (whether the firm uses EDI, e-com or not), and (whether the firm has website or not) and (whether the firm uses multimedia or not). Distribution showed fairly high divergences, with a standard deviation value at 0.21 and a mean of 0.42.

Another indicator, 'employee accessing external information' was measured as the product of percentage of employees accessing databases, and whether the firm undertakes patent search, and whether tile firm makes search in engineering databases.

Another set of indicators looked into the employment of information towards competition. Four indicators were identified:

- Information employed for competition;
- Design skill employed for competition;
- Process informatization for competition; and
- Information for competition.

The first variable, for example, was computed as the product of (whether the firm undertakes reverse engineering) and (whether the firm generates data on competitors). This variable had a mean value of 0.64 with a standard deviation of 0.28.

Similarly the last variable was constructed on these three aspects: whether the firm pursues activities to secure proprietary information: whether it employs this information to generate barriers to entry: and whether it encourages its employees to generate test data.

Similarly indicators on learning considered:

- Learning from vendors;
- Learning from services;
- Learning from markets; and
- Learning from collaboration.

It may not be out of place to compare two other indicators used on 'communication cost per output' and 'communication cost per employee'. Incidentally the former had a very low standard deviation at 0.0088 while the latter had a fairly high value at 0.105.

Market and governance

The region we surveyed, the NCR, does not have several attributes of a cluster. In most parts of this region neighbouring firms belong to different industry sectors, often not even sharing input-output transaction relations.

However, while not sharing output markets, firms in a region often shared certain input factor markets, primarily of labour. In output markets and acting as suppliers to either an original equipment manufacturer (OEM) or to an assembler (such as Maruti Udyog, a car assembler), these SMEs remain under competitive pressures.

In fact, most such firms do not enjoy special relations with the assembler; rather, more often than not, they have arms-length (auction-based) relations. Some other firms that manufacture for the end consumer (such as in air-conditioning) always remain under great competitive pressure.

Competitive pressure on the output market is often ruinous. The existence of too many small producers, where none enjoy economies of scale or when none can invest in capital machinery, leads to ruinous competition. Governance in this case refers to weeding-out. The regulatory structure pre-vents the acquisition of such firms which, because they do not enjoy much reserve, are not coveted anyway as targets of acquisition. The thesis of market-based corporate governance therefore cannot be applied to these SMEs. A market of ruinous competition with petty producers fails to set principles of governance.

There are some firms that primarily as auto-component suppliers, enjoy comparatively privileged relations with the assembler. However, unlike Toyota, none of these firms receive from the OEM or the assembler any supports in terms of technology, production systems (compare Toyota's diffusion of the Toyota Production System to its suppliers), finance or training. The relation is mostly based on continuation of supply under the shadow of the market.

The regulatory structure prevents simple liquidation and it is extraordinarily difficult to recover sunk-in assets when a firm goes out of business. The market for credit simply does not exist, and more importantly there is no rating agency that can

rate the asset-worthiness of a fund-seeking small firm. There is no market for technology either. Most importantly, the so-called market for corporate control does not exist. Large numbers of such firms are not public, often family-based, and management takeover has never been heard of.

The above picture shows the very fragile - or non-existent - structure of market-based governance. At this stage we can differentiate between two types of inter-firm relations relevant for corporate governance. The first type, as described above, refers to the relation of dominance that a large firm enjoys vis-a-vis the SME. The second type would refer to intra-cluster (but inter-firm) relations between several firms belonging most often to different industry sectors.

In the first type, a large firm could govern partly both a single small supplier firm and a group of such small supplier firms. The dominant model in this category is Toyota. We observed an absence of this type in the NCR. It appears that even Maruti (which borrowed technology and production system from a small Japanese parent, Suzuki) did not exercise similar governance practice with its suppliers most of the time.

In this model, the large firm supplies technology, credit, training, production systems and such others under the constraint of a quasi-competitive pressure effected through competition between two or more dedicated suppliers. In some cases personnel from the large firm regularly visit the suppliers, to provide knowhow and managerial direction on use and mobilization of resources.

No OEM or assembler has followed the Toyota philosophy in the NCR. Weakness in corporate governance knowhow, aggravated by scarcity of resources, has pushed SMEs in the NCR to the margin.

In the second type, governance can be mutually supported among several neighbouring SMEs. Typically neighbouring firms share certain common information, mutual knowledge, knowledge about mutual factor-endowments (such as about skill resources or production or design knowledge of a neighbouring firm), and sometimes share knowledge on credit, technology and even information on possible output markets.

However, almost always, sharing of such information is extremely sporadic and is dependent exclusively on personal relations, mainly socially embedded. In this second type, therefore, little or feeble governance is exercised.

SMEs, however, are greatly dependent on this second type of input. For example, when an innovative machine set-up is procured through a transaction based on social relations, the price is low and is often accompanied by credit or deferred payment facilities.

Typically most managerial knowhow passes through this circuit as non-priced. The major reason why governance can be effected inter-firm in such a cluster is afforded by the simple fact that, when firms share privileged insider access to each other, information about the neighbour is available without price.

Cluster-market governance

This second type leads to a mode of governance where firms can access cheap and reliable information on market and corporate governance. The benefits that firms enjoy through sharing knowledge about resources and governance are that all the firms in a neighborhood can raise their competence together at a very low cost.

Further, this leads to the evolution of a cluster-based brand or reputation. In other words, through this mode we can visualize the emergence of inter-cluster competition. Cluster reputation increases the asset value of all the firms belonging to a cluster, and this acts as an incentive to sharing.

Further, cluster reputation increases the competitive bargaining of each firm, so that, with increased reputation of a cluster, a firm can bargain for better price or better credit or cheaper access to know-how from outside markets, in particular from OEMs and assemblers.

In contrast to this second type, the failure of governance of the first type reveals that a large OEM or assembler suffers from weak corporate governance. Therefore, in order to improve the SME, if we look at the supplier intra-industry relations between a large firm and an SME, we are likely to raise the cost of governance. In this case better governance of the SME would imply the prior existence of better governance in the large firm.

The second type of corporate governance, therefore, appears to be desirable. However, this too suffers from some serious drawbacks, the most important of which is that a cluster does not enjoy a stock exchange or a market, where neighbouring firms can initiate transactions based on price and the market clears through the completion of transactions.

We can take lessons from other countries in this regard. Several European countries – Germany, France and the Netherlands, for example – have opened during the last decade small, specialized stock exchanges based on small firms generally dealing in high technologies.

One such example is the Neuer Market. Typically, the disclosure requirement on a firm wishing to enter through an IPO (initial public offering) in this market is much stricter compared with the old and large exchanges such as at Frankfurt or the New York Stock Exchange.

Another example is from China, where in places such as Shanghai, small exchanges known as Technology Exchanges (or Markets) have appeared In the hundreds. These exchanges deal in technology solutions, and, as a result, small firms can deal in property rights. Exchanges do not demand strict disclosure of information other than registration of a technology deal. Another dominant mode of cluster-based sharing of information and joint-corporate governance in China can be seen in the Town & Village Enterprises (TVE).

The benefits of such exchanges are immense. SMEs in the NCR, or in general in

India, suffer from Sailed markets. Exchanges in the above mode in a cluster can encourage price-based transactions. As we have seen, small firms routinely cooperate and share information, and more importantly neighbourhood firms have privileged access to information.

Such firms, therefore, can shift from benevolent or otherwise non-priced transactions to price-based transactions, where markets would clear routinely. Transactions in such an ex-change would be low-cost. Price-based transactions would act as incentives, and firms who so far have been under-producing governance-goods and other resources in demand locally, would, with increased incentives, produce more such goods.

Finally, because transactions are open and transparent, such an exchange would set up incentives to increasing competitiveness. In other words, cluster-based small exchanges can enhance corporate governance among small and medium firms.

Conclusion

Small firms have been suffering from poor managerial knowhow, poor access to rich factors and poor governance. This has resulted in decreasing their competitiveness. These firms, however, cooperate with each other and enjoy privileged access to information about other firms.

We have argued that small cluster-based exchanges can change this state of affairs. Firms can enhance corporate governance and consequently afford higher resource mobilization with increasing strategic competitiveness if transactions between cluster firms are encouraged to take place on price and through market clearance. This article argues for setting up cluster-based stock exchanges or technology exchanges in India.

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