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Developing Country Firms in the World Economy: Governance and Upgrad- ing in Global Value Chains

John Humphrey / Hubert Schmitz

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Prof. Dr. John Humphrey, Fellow of the Institute of Development Studies, University of Sussex, Brighton/UK; Director of the research programme on „Globalisation and Poverty“ (financed by the UK government, DFID/Department for International Development).

Prof. Dr. Hubert Schmitz, Fellow of the Institute of Development Studies, University of Sussex, Brighton/UK; Co-ordinator of the IDS-INEF project „The Interaction of Global and Local Governance: Implications for Industrial Upgrading“.

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Summary

Governance in Global Value Chains.....	3
1. Introduction	3
2. Why Does Governance Matter?	4
3. What is Chain Governance?	6
4. Why is Chain Governance Needed?	9
5. How Can Firms Ensure that Parameters are Met?	10
6. What are the Likely Trends in Chain Governance?.....	13
7. References	15

How does insertion in global value chains affect upgrading in industrial clusters?	18
1. Introduction.....	18
2. Upgrading in Clusters and Value Chains	19
3. Value Chain Governance	23
4. Value Chain Relationships and Upgrading in Clusters	28
4.1. Upgrading in the Sinos Valley Footwear Cluster	28
4.2. Competence Acquisition in Clusters.....	29
5. Conclusion	32
6. References	32

GOVERNANCE IN GLOBAL VALUE CHAINS

The concept of 'governance' is central to the global value chain approach. This article explains what it means and why it matters for development research and policy. The concept is used to refer to the inter-firm relationships and institutional mechanisms through which non-market co-ordination of activities in the chain takes place. This co-ordination is achieved through the setting and enforcement of product and process parameters to be met by actors in the chain. In global value chains in which developing country producers typically operate, buyers play an important role in setting and enforcing these parameters. They set these parameters because of the (perceived) risk of producer failure. Product and process parameters are also set by government agencies and international organisations concerned with quality standards or labour and environmental standards. To the extent that external parameter setting and enforcement develop and gain credibility, the need for governance by buyers within the chain will decline.

1. Introduction *

If trade liberalisation is to bring benefits to developing countries, then these countries must be able to export products for which they have a comparative advantage in developed-country markets. Analysis of trade in labour-intensive products such as clothes, shoes and high-value, fresh vegetables has highlighted important features of the way in which this trade is organised. Increasingly, trade in these products is organised by global buyers, who may work for, or act

on behalf of, major retailers or brand-name companies. This has been shown to be the case in, for example, the trade of garments between East Asian countries and the US (Gereffi 1999), the trade in horticultural products between Africa and the UK (Dolan and Humphrey 2000) and the trade in footwear from China and Brazil to the US and Europe (Schmitz and Knorrington 2000). One of the key findings of these and other studies is that access to developed-country markets has become increasingly dependent on entering into the global production networks of lead firms situated in developed countries. The fact that these lead firms are just as likely to be retailers or brand-name companies (Tesco, Marks & Spencer, Gap, Nike) as manufacturers is one of the key insights of global value-chain research.

This leads to a more general insight. It has long been recognised that in situations characterised by bounded rationality in which information is either unavailable or can only be acquired at a cost, organisations as well as markets coordinate economic activities. Organisations emerge because markets:

“depend on a shared knowledge of the prices and the characteristics of the goods that are being traded, the absence of serious third-person effects (so-called 'externalities') that are not reflected in prices, and sufficient stability of products and manufacturing practices so that both sellers and buyers can plan their activities rationally and make rational decisions to sell and buy at the prices at which the markets equilibrate.”
(Simon 2000: 750)

A significant amount of trade in the global economy (although it is difficult to quantify how much) is carried out in

* The authors are grateful to Raphael Kaplinsky for helpful comments on an earlier draft.

the form of transactions between subsidiaries of transnational companies. It is less widely recognised that trade is also organised through networks of legally independent firms using a variety of transactional relationships. Thirty years ago, Richardson (1972: 883) referred to this as ‘the dense network of co-operation and affiliation by which firms are inter-related’. Recent research suggests that such relationships can increasingly be found in international trade. Global value-chain research in particular seeks to understand the nature of these relationships and their implications for development.

The concept of ‘governance’ is central to the global value-chain approach. We use the term to express that some firms in the chain set and/or enforce the parameters under which others in the chain operate. A chain without governance would just be a string of market relations. Instances of governance are easy to describe. The celebrated UK television programme about Tesco's role in controlling the production of *mangetout* in Zimbabwe would be a clear example of governance in a global value chain. In this case, Tesco was clearly calling the shots, even though it did not own the farms or the packing facilities. In fact, Tesco only takes ownership of the product when it arrives at the regional distribution centres in the UK. But this does not prevent Tesco influencing what happens at earlier points in the chain.

Governance can be exercised in different ways, and different parts of the same chain can be governed in different ways. In a previous paper (Humphrey

and Schmitz 2000) we explored why these differences matter for the upgrading prospects of producers in developing countries. This article seeks to deepen our understanding of governance. Section 2 brings together the main reasons why a concern with chain governance matters for development research and policy. Section 3 examines what precisely chain governance is. Section 4 asks why chain governance is needed and why it is a salient feature in trade with developing countries. Section 5 sets out how compliance with product and process parameters can be ensured. The final Section 6 maps out briefly the likely future trends in chain governance.

2. Why Does Governance Matter?

The issue of governance in value chains is important for the following reasons:

- *Market access.* Even when developed countries dismantle trade barriers, developing-country producers do not automatically gain market access, because the chains that producers feed into are often governed by a limited number of buyers. In order to participate in export manufacturing for North America and Western Europe, developing-country producers need access to the lead firms of these chains. These lead firms ‘undertake the functional integration and coordination of internationally dispersed activities’ (Gereffi 1999: 41). Decisions by the chains’ lead firms may cause particular types of producers and traders to lose out. For example, recent research on the UK-Africa horticulture chain suggests that small growers are marginalised.

The reason, it seems, does not lie in the efficiency advantage of large growers but in the lead firms' sourcing strategies, which are influenced by the expectations of consumers, NGOs and government agencies with regard to safety and environmental and labour standards (Dolan and Humphrey 2000; 165-69).

- *Fast track to acquisition of production capabilities.* Those producers that gain access to the chains' lead firms tend to find themselves on a steep learning curve. The lead firms are very demanding with regard to reducing cost, raising quality and increasing speed (and are therefore unpopular with the local workforce). But they also transmit best practices and provide hands-on advice (and pressure!) on how to improve layout, production flows and raise skills. It is this combination of high challenge and high support that is often found in the highly governed chains and that explains how relatively underdeveloped regions become major export producers in a short period of time. The Brazilian shoe industry in the early 1970s and the Vietnamese garment industry in the late 1990s are good examples. There is now broad agreement in the literature that this upgrading effect is particularly significant for local producers new to the global market (Gereffi 1999; Keesing and Lall 1992; Piore and Ruiz Durán 1998). However, there is also recognition that the governance structures which facilitate the fast acquisition of production capabilities can create barriers for the acquisition of design and marketing capabilities (Schmitz and Knorringa 2000).
- *Distribution of gains.* Understanding the governance of a chain helps to understand the distribution of gains along the chain. Kaplinsky (2000), in particular, suggests that the ability to govern often rests in intangible competences (R&D, design, branding, marketing) which are characterised by high barriers of entry and command high returns – usually reaped by developed-country firms. In contrast, developing-country firms tend to be locked into the tangible (production) activities, producing to the parameters set by the 'governors', suffering from low barriers of entry and reaping low returns. While in need of systematic empirical verification, these governance related distribution issues are critical to the debate on whether there is a spreading of the gains from globalisation.
- *Leverage points for policy initiatives* Precisely because many global value chains are not just strings of market-based relationships, they can both undermine government policy but also offer new leverage points for government initiatives. The fact that some chains are governed by lead firms from developed countries provides leverage for influencing what happens in supplier firms in developing countries. This leverage point has been recognised by government and non-governmental agencies concerned with raising labour and environmental standards. Global chain governance, for example, provides the basis of the UK government's ethical trade initiative. It would not make sense to hold UK companies responsible for labour and environmental conditions at developing-country suppliers if these companies

did not know who these suppliers were and have influence over these conditions. In fact, it makes sense to refer to some firms as ‘suppliers of x’ and hold x responsible precisely because x will have worked with the supplier, discussing product design, manufacturing (or growing) processes, and quality systems, and can exercise pressure to change them.

- *Funnel for technical assistance.* Multilateral and bilateral donor agencies have for decades sought to find ways of providing effective technical assistance to developing-country producers. Progress was at best modest. Recently these agencies have embarked on experiments of fostering TNC-SME partnership. The central idea is to combine technical assistance with connectivity. The lead firms of chains become the entry point for reaching out to a multitude of distant small and medium sized suppliers. It is recognised, however, that some buyers may require ‘mentoring’ in order to fulfil this funnel and transmission function. The UN (through the Global Compact), the United Nations Conference on Trade and Development (UNCTAD), the United Nations Industrial Development Organisation (UNIDO), the German Cooperation Agency (GTZ), the UK Department for International Development (DFID), and the Prince of Wales Fund are experimenting with this approach,¹ but more areas of application need to be explored. For exam-

ple, an analysis of horticultural value chains highlights the critical role played by UK supermarkets and importers in this trade and points to the importance of targeting these buyers when considering initiatives to promote smallholder production of export horticulture crops.

3. What is Chain Governance?

It is quite easy to point to instances of governance in inter-firm relationships within global value chains. One clear example would be the way in which leading UK supermarkets exercise control over their fresh-vegetable supply chains.² Not only do they specify the type of products they wish to buy (including varieties, processing and packaging), but also processes such as the quality systems that need to be in place. These requirements are enforced through a system of auditing and inspection and, ultimately, through the decision to keep or discard a supplier. Clearly, governance in value chains has something to do with the exercise of control along the chain.

At any point in the chain, the production process (in its widest sense, including quality, logistics design, etc.) is defined by a set of parameters. The four key parameters that define what is to be done are:

1. What is to be produced. We refer to this as product definition.³

¹ See, for example, UNCTAD (2000), UNIDO (2000), and the following websites: www.unglobalcompact.org; www.dfid.gov.uk; www.gtz.de/ppp.

² These issues are discussed in Dolan and Humphrey (2000).

³ This term is taken from Sturgeon (2000).

2. How it is to be produced. This involves the definition of production processes, which can include elements such as the technology to be used, quality systems, labour standards and environmental standards.
3. When it is to be produced.
4. How much is to be produced.

To these four basic parameters one might add a fifth parameter, price. Although prices are usually treated as a variable determined in the market, it is frequently the case that major customers (particularly those competing more on price than, for example, product quality) insist that their suppliers design products and processes in order to meet a particular target price.

The question of governance arises when some firms in the chain work according to parameters set by others. When this happens, governance structures may be required to transmit information about parameters and enforce compliance. In short, governance refers to the inter-firm relationships and institutional mechanisms through which non-market coordination of activities in the chain is achieved.

Governance, in the sense of arrangements that make possible the non-market coordination of activities,⁴ is not a necessary feature of value chains.

Many goods are traded in markets through a series of arm's-length market relationships between firms. The parameters are defined solely by each firm at its point in the chain. So, for example, a firm might make a product according to its own estimations of market demand ('make to forecast'), using a design that has no reference to any particular customer (i.e. either a completely standard product, or a product developed in-house) and using its own processes. The buyer then encounters a ready-made and ready-to-buy product. There are various ways in which inter-firm relationships can differ from this pattern. For example, the decisions about 'when' and 'how much' will be made jointly by the producer and the buyer when production is scheduled according to 'make-to-order' rather than 'make-to-forecast'. This is typical when products have many possible variants, which renders make-to-forecast uneconomic.

From the point of view of the analysis of inter-firm linkages in the global economy, the critical parameters for value-chain governance are the first two: what is to be produced, and how it is to be produced. These parameters are often set by buyers.⁵ In each case, the level of detail at which the parameters are specified can vary. In the case of product definition, the buyer can provide differ-

⁴ By restricting the term 'governance' to non-market coordination of economic activities, we are distinguishing between 'market coordination' and 'coordination through governance mechanisms'. In this respect, we do not follow the practice of Williamson (1979: 247) who sees governance structures, including market governance, as characteristic of all transaction arrangements.

⁵ In many cases, parameter setting goes 'backwards' along the chain, from buyer to seller, but this is by no means always the case. Buyer and seller may set parameters jointly if they each have competences relevant to the parameters being set. In a few cases, parameter setting goes 'forwards' from seller to buyer - franchise operations are the clearest example of this.

ent levels of specification. It can set a design problem for the producer, which the producer then solves by providing its technology and design. The buyer might provide a particular design for the producer to work on, or the buyer might even provide detailed drawings for the producer. Buyers can also specify process parameters. This has been most evident through buyer involvement in their suppliers' quality systems, but it is also increasingly evident in specification of process parameters in relation to labour and environmental standards. Once again, these can be specified at different levels of detail. In some cases, the buyer may merely refer to the process standards to be attained. In other cases, the buyer will specify precisely how particular standards should be attained by requiring and perhaps helping to introduce particular production processes, monitoring procedures, etc. When the buyer plays this role, we refer to it as the 'lead firm' in the chain.

The fact that this lead role can be played by a variety of firms leads to Gereffi's distinction between producer-driven and buyer-driven global value chains (Gereffi 1994). In producer-driven chains, the key parameters are set by firms that control key product and process technologies, for example in the car industry. In buyer-driven chains, the key parameters are set by retailers and brand-name firms which focus on design and marketing, not necessarily possessing any production facilities.

Product and process parameters can also be set by agents external to the chain, as has been argued by Kaplinsky (2000: 125). Government agencies and

international organisations regulate product design and manufacture, not only with a view to consumer safety, but also in order to create transparent markets (for example, by defining standard weights and sizes or technical norms). Examples of such parameter-setting by agents external to the chain include food-safety standards, norms with regard to the safety of products such as children's toys, electrical equipment and motor vehicles and control of hazardous substances in a wide range of products. Once again, these norms can refer to the product (are its physical characteristics and design in conformance with requirements?) or to the process (is it being produced in ways which conform to particular standards?). In some cases, process norms are pursued as a means to achieving product standards (for example, hygienic food preparation systems are designed to produce safe food) and in others because of the intrinsic value of particular types of processes (for example, animal welfare requirements). Governments may set standards which are compulsory and have legal force. Standards may also be set by non-legal agreements (code of conduct, etc.) and by a variety of unofficial agencies, such as NGOs, which pressure for compliance with labour and environmental standards.⁶

Parameters set from outside the chain lead to chain governance when one agent in the chain either enforces the

⁶ The issue of governance through product and process standards has become increasingly complex, partly due to the proliferation of such standards. For an overview, see Nadvi and Waeltring (2001).

compliance with parameters of other agents or translates the parameter into a set of requirements which it then monitors and/or enforces. This situation usually arises when agents at one point in the chain might be held responsible for actions by agents (or the consequences of these actions) at other points in the chain. The UK Food Safety Act, for example, places upon food retailers a requirement for 'due diligence' with respect to the manufacture, transport, storage and preparation of food. The retailers can be held liable for not serving food fit for consumption. UK supermarkets have developed systems of traceability and monitoring to meet the due diligence requirement. Similarly, the basis of the campaign against Nike in the USA was the fact that the company is held responsible for labour conditions in the factories of its suppliers.

4. Why is Chain Governance Needed?

If governance in value chains is about setting and/or enforcing parameters along the chain, the question arises of why companies would want to do this. Governance by the buyer is costly, requiring asset-specific investments in relationships with particular suppliers. Such investment also increases the rigidity of supply chains by raising the costs of switching suppliers. Nevertheless, many instances of parameter setting and enforcement along the chain are evident.

Buyer specification of product design is most likely to arise when the buyer has a better understanding of the demands of the market than the supplier.

The buyer then interprets the needs of the market and informs the supplier of what is required. As was noted above, this information may range from a statement of the 'design problem' to be met to detailed specifications of what is to be produced. The supplier's limited knowledge of market demands may arise in fast-moving markets characterised by innovation and product differentiation. This can be seen in fashion segments of the garments industry, for example. It is also likely to arise when developing-country suppliers are integrated into global value chains and exposed to the demands of more sophisticated markets. As Hobday has argued, the 'latecomer' firm to the global economy is 'dislocated from the mainstream international markets it wishes to supply' (1995:34). Suppliers may be confronted with markets that have different quality requirements and also different and hard-to-interpret safety standards. In this situation, the buyer may even have to supply basic information about product design.

The main reason for specification of process parameters along the chain is risk. Buyers specify and enforce parameters when there are potential losses arising from a failure to meet commitments (for example, delivering the right product on time) or a failure to ensure that the product conforms to the necessary standards. These performance risks, relating to factors such as quality, response time and reliability of delivery, become more important as firms engage in non-price competition. For example, UK supermarkets place great emphasis on continuity and consistency of supply. The conformance risks spring mainly

from increasing concerns about product safety, labour standards and environmental standards. These mean that buyers (both retailers and manufacturers) in developed countries are exposed to the risks of loss of reputation if shortcomings are found at their suppliers. Once again, these risks may be a particular characteristic of global value chains integrating developing-country producers with developed country buyers. Keesing and Lall (1992) argue that producers in developing countries are expected to meet requirements that frequently do not (yet) apply to their domestic markets. This creates a gap between the capabilities required for the domestic market and those required for the export market. Therefore, parameter setting and enforcement may be required to ensure that products and processes meet the required standards. If the gap has to be closed quickly, buyers will need to invest in a few selected suppliers and help them to upgrade.

The corollary of this is that the need for parameter setting along the chain may decrease as the capabilities of developing-country suppliers improve and diffuse. At the initial stages of a supply relationship, buyers may feel the need to provide detailed instructions and undertake close monitoring of supplier performance. As the suppliers become more experienced, and as they are able to demonstrate their reliability to the customer, the latter may begin to indicate the standards to be met, but leave it to the supplier to work out how to meet them.⁷ An important corollary of this

point is that the extent to which product and process parameters are set by the buyer does not depend upon the intrinsic characteristics of the product, such as its complexity or its closeness to the technology frontier, but rather derives from the risks faced by the buyer. These arise from the level of probability of poor performance and the consequences of that poor performance.

5. How Can Firms Ensure that Parameters are Met?

Once parameters have been set by firms in the chain or by agents outside of the chain, how are they enforced? In an earlier paper (Humphrey and Schmitz 2000), we focused on governance relationships between firms in the chain. In this article we stressed the trade-offs between parameter setting and enforcement by firms within the chain as opposed to by external agents.

Compliance with product parameters can usually be monitored and enforced through inspection and testing. This can take place at various stages,

contract electrical assemblers illustrates how these firms moved from assembling printed circuit boards to the specifications of their customers, using components supplied by these customers, to sourcing components, adapting designs and developing testing equipment. The key factor in the parameter-setting relationship was not the product (if anything, it became more complicated) but the competence of the suppliers in relation to the demands placed upon them. Note, however, that the overall design parameters of the product remain in the hands of the customer, as the printed circuit board's requirements depend upon the product into which it is inserted. However, because part of the answer to the design challenge is provided by the supplier, the nature of their relationship changes.

⁷ The analysis by Lee and Chen (2000) of the acquisition of competences by Taiwanese

including at the design and pre-production stages, depending upon the extent to which the supplier is responsible for the design. In some cases, government agencies will also inspect products prior to their introduction in the national or regional market.

Monitoring and enforcing compliance with process standards is altogether more complicated. Process standards relate to characteristics of the process itself, which may not be evident in the product itself. Reardon et al. (2001) use the concept of 'credence good' to refer to product and process qualities not evident at the point of purchase:

"A credence good is a complex, new product with quality and/or safety aspects that cannot be known to consumers through sensory inspection or observation-in-consumption... The quality and safety characteristics that constitute credence attributes include the following: (1) food safety; (2) healthier, more nutritional foods (low-fat, low-salt, etc.); (3) authenticity; (4) production processes that promote a safe environment and sustainable agriculture; (5) 'fair trade' attributes (e.g. working conditions)." (Reardon et al. 2001)

By definition, consumers cannot directly verify these attributes. In the cases of attributes 3, 4 and 5, the retailers are not able to verify them through product inspection alone. This is why process controls are necessary.

The following simplified table presents various options for parameter setting and parameter enforcing. Ignoring more complex situations, such as joint parameter setting between firms and external agencies, it highlights the contrast between parameter setting and enforcement by firms in the chain (or by

agents specifically contracted to carry out work to the requirements of these firms) and the role of external agents in setting and enforcing compliance with parameters.

There are some reasons to expect that parameters set by lead firms within the chain will be enforced by the lead firms, or by agents contracted by them. Conversely, parameters set by agents external to the chain will also be enforced by agents external to the chain. These are the two situations described in boxes 1 and 4. In the case of box 1, the greater the extent to which the lead firm specifies non-standard parameters, the greater is the likelihood that it will also have to arrange for enforcement, carrying out this activity directly, or contracting others to do it. These 'others' might be other agents within the chain (for example, UK supermarkets requiring their importers to monitor the quality systems of horticultural producers and exporters), or third party specifically hired for the task, as happens when NGOs or independent monitors are hired by companies to verify labour standards at suppliers. The key point here is not whether the firm or an agent does this work, but that the firm defines the parameters to be met and arranges for compliance to be monitored. In contrast, box 4 describes cases where the parameters are specified by agents external to the chain (in the two cases described, by government agencies) and the monitoring processes are also in the hands of agents external to the chain. In this case, no individual firm in the chain takes responsibility for defining or enforcing

the parameters. They apply to all the firms in the chain.

However, the table also shows that setting and enforcement may be split. Box 2 describes cases where lead firms require the suppliers to adhere to certain

by external agents (by governments or by NGOs), but the lead firm is responsible for specifying and monitoring the processes which are meant to lead to the required outcome. In these cases, the lead firm has a particular requirement

Table 1: Examples of Parameter Setting and Enforcement

Parameter Setting	Parameter Enforcement	
	Lead Firm	External Agents
	Lead Firm	<p>1</p> <p>Specification of quality systems and enforcement through audit, either directly by the lead firm itself or through an agent acting directly on its instructions.</p> <p>Requirement for labour standards above the legally required minimum, verified by the lead firm or its agents.</p> <p>Voluntary implementation of fair trade code enforced by the firm.</p>
External Agents	<p>3</p> <p>Firms are expected not to use suppliers that employ child labour, but this expectation is not accompanied by any system for enforcing the ban. The firms have to develop their own enforcement systems.</p> <p>Food sellers are legally obliged to meet hygiene standards for ready-to-eat food in the EU, but the process of ensuring that these conditions are met is the responsibility of firms in the chain. In this case, the seller is responsible for specifying mechanisms that conceal that the standard can be met.</p>	<p>4</p> <p>The EU requires that surgical instrument manufacturers exporting to the European market must be ISO 9000 certified. The certification is carried out by independent certification agencies (Nadvi 2001).</p> <p>The US Department of Agriculture (DoA) requires certain regions exporting melons to the US market to have a state-administered fruit-fly monitoring and eradication programme which has to be approved by the DoA (Gomes 1999).</p>

general process standards. The decision to insist on a standard is made by the lead firm (it is not imposed from outside), but if the standard is widely known and adopted, then it is likely that organisations (standards agencies, consultancy firms, etc.) exist for both certifying companies and helping firms meet the specified standard. Box 3 describes cases where the parameters are imposed

imposed on it, but it has to make the necessary arrangements to ensure compliance along the chain.

We can hypothesise that there is some incentive for firms to shift parameter setting and enforcement from boxes 1 and 3 to boxes 2 and 4. Such a shift would reduce the cost of direct monitoring and entail a process of external

certification. Generally speaking, the costs of this certification are borne by the supplier, not the buyer. However, for this process to take place it is necessary for the parameters being specified to be widely applicable across different firms and to have credible means of external monitoring and enforcement. It may be the case that in the early stages of the development of new process parameters, such as labour standards, these are initially enforced by lead firms within the chain. As standards become more generalised, then external systems of enforcement develop, such as the SA 8000 labour standard.

To the extent that such external systems of parameter setting and enforcement develop and gain credibility, then the role of process parameters in generating the need for governance by firms within the chain will decline. If it were the case that certification systems demonstrating adherence to a range of process standards, including quality, environmental and labour standards were developed, this might substitute for process controls by lead firms. Direct monitoring and control of suppliers could be substituted by certification processes. Nevertheless, there are reasons to believe that direct parameter setting and enforcement by lead firms will continue to be important in value chains. First, firms might still wish to specify product parameters. Second, it is not clear how effective standards and certification are. Widely applicable process parameters may not be a guarantee of good performance in areas such as quality. Close links with suppliers may remain indispensable. Third, there may

be other areas of supplier behaviour, such as reliability of delivery and willingness to develop long-term partnerships that are not captured by certification schemes.

6. What are the Likely Trends in Chain Governance?

The purpose of this final section is to reflect on whether chain governance will become more or less dominant in trade with developing countries and what form it will take. What are the implications of the analysis presented in this article for trends in value-chain governance?

- The general increase in chain governance is connected to the big changes in retailing in the advanced countries. There has been an enormous *concentration in retailing*, particularly pronounced in the US and UK, but also evident in Germany, France, and more recently in countries with traditionally very diffuse retail sectors, such as Italy and Japan. Concentration in retailing does not necessarily lead to concentration in sourcing but the scenario that is emerging is increasingly clear: an increasing number of developing-country producers engage in contract manufacturing for a decreasing number of global buyers.
- *Brands* play an increasingly important role in enterprise strategy, particularly in consumer products such as garments and footwear. The enormous investment required to create (or maintain) brands is increasingly made by retailers or other companies which have no (or only limited) production facilities of their

own. Product and process definition, however, is a strategic part of their operation. To the extent that luxury segments of markets for products such as clothes and shoes become dominated by global brands, the companies holding these brands will play an increasing role in structuring global value chains. This tendency is already evident in parts of the Italian footwear industry (Rabellotti 2001).⁸ Because brands stand for high quality or well-defined images, lead firms need to define and enforce product and process parameters. Branding and chain governance thus tend to go together. Chain governance is not, however, limited to the sourcing of branded products.

- In this article we have reiterated our previous argument (Humphrey and Schmitz 2000) that the *risk of supplier failure* is a key driver of chain governance. Will this risk diminish with time? The risk of suppliers not being able to produce to the required specification is highest in new producer countries. Over the last two decades, many new producer countries have been able to export to advanced country markets under the tutelage of the global buyers. As the competence of these suppliers increases, chain governance through the buyers can be expected to loosen – provided that the increasing competence of suppliers is accompanied by the emergence of local agents who can monitor and enforce the

compliance with general or buyer-specific standards. Some of the formerly new producers will become world leaders in *producing* promptly to the specification of the foreign buyer. To some extent this is already happening as in the Taiwanese computer cluster (Kishimoto 2001) and the South Brazilian footwear cluster (Bazan and Navas-Aleman 2001), both of which are loosening the ties with the foreign buyers.

- There is, however, a counter-tendency. While non-price factors (quality, brand, speed) have come to play an increasing role for competing in global markets, price competition continues to be unrelenting, leading to a downward pressure on prices, particularly in labour-intensive products sourced from developing countries. The resulting profit squeeze leads buyers to *scout continuously for new producers* who offer lower labour costs. This then raises again the risk of supplier failure and the need for chain governance. While this process has probably bottomed out in traditional products such as garments and shoes, the cycle continues to be reproduced for newer products such as computer monitors or all-year-round available fruits and vegetables.
- *Business-to-Business (B2B) electronic commerce* is being promoted worldwide as a means of enabling developing-country producers to sell in developed-country markets and transform the relationship between producer and buyer. For the producer, one of the main advantages of e-commerce is thought to lie in side-stepping the intermediary or avoiding control by the buyer. Reality is

⁸ This and other papers from the same workshop on local clusters in global value chains can be downloaded from the research programme's website: www.ids.ac.uk/ids/global/vw.html.

unlikely to become this simple and the governance mechanisms outlined in Table 1 will probably continue to be most relevant because: (a) B2B e-commerce is diffusing only very slowly in trade between developing and developed countries; (b) some of the established buyers are investing in the application of e-procurement methods; (c) where existing intermediaries are circumvented, trade tends to be conducted through new 'informediaries' (portals); (d) all forms of e-procurement are likely to require mechanisms to contain buyer risk, such as certification. Monitoring and accreditation agencies will be of increasing importance (Mansell 2001).

- As argued in Section 5, there may be a shift to parameter setting and enforcement *by agents outside the chain*. The more conformance/compliance with parameters can be codified, generalised and credibly applied, the less need there is for governance from within the chain.

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HOW DOES INSERTION IN GLOBAL VALUE CHAINS AFFECT UPGRADING IN INDUSTRIAL CLUSTERS?

What is the scope for local upgrading strategies where producers operate in global value chains? The literature on industrial clusters emphasises the role of local institutions and networks in enabling upgrading. The value chain literature focuses on the role of global buyers and chain governance in defining upgrading opportunities. This paper reconciles these two literatures by unpackaging the concept of governance and distinguishing between types of upgrading. It pays particular attention to the position of developing country firms selling to large, global buyers.

1. Introduction

Firms in developing countries, in common with firms everywhere, are under pressure to improve their performance and increase their competitiveness. New, low-cost producers are entering global markets, intensifying competition in markets for labour-intensive manufactures. How can firms in developing countries respond to this type of challenge while at the same time maintaining returns to both labour and capital from engaging in trade? The literature on competitiveness suggests that the most viable response is to 'upgrade' - to make better products, make them more efficiently, or move into more skilled activities.

Several schools of thought have emphasised the local determinants of competitiveness, arguing that local-level governance supports cluster upgrading. These include the 'new economic geog-

raphy', business studies, regional science and innovation studies. Not only are some of these studies optimistic about the possibility of strengthening competitiveness through local or regional industrial policy (e.g. Cooke and Morgan, 1998; Pyke 1992), but it has also been argued that in a globalising economy the only enduring basis for competitive advantage will be localised and based on tacit knowledge: "the formation of the world market...increases the importance of heterogeneous, localised capabilities for building firm-specific competences" (Maskell and Malmberg 1999: 172). The analysis of industrial clusters in developing countries builds on these perspectives, focusing on the role of local linkages in generating competitive advantage in labour-intensive export industries such as footwear and garments.¹ However, these products are precisely the ones in which global buyers, whether agents, retailers or brand-name companies have come to play an increasingly important role in the organisation of global production and distribution systems. One of the main literatures which analyses these systems, the global value chain approach,² takes a very different approach to the question of upgrading, emphasising cross-border linkages between firms in global production and distribution systems rather than local

¹ A number of contributions to the developing countries literature on clusters of firms can be found in Nadvi and Schmitz (1999).

² Gereffi and others (Gereffi and Korzeniewicz 1994) used the term "global commodity chains" to refer to these linkages. At a workshop in Bellagio in September 2000, Gereffi and other researchers working in this area agreed to use the term "global value chains".

linkages (Gereffi and Korzeniewicz 1994; Gereffi and Kaplinsky 2001).

How can these two literatures be reconciled? One emphasises the importance of local linkages and the other global linkages. Clearly there is a need to bring these two perspectives together, particularly in the case of export oriented clusters that are inserted into global value chains. This paper provides a means of doing this.

The question which drives this paper is how insertion into global value chains affects local upgrading strategies. We came to this question through our research on clusters in developing countries whose producers found themselves in asymmetrical relationships with their customers. These producers were facing powerful global buyers who had a major influence not just on sales but also on the type of upgrading strategies open to them. Since then, we found that this issue is not confined to developing country clusters. Rabellotti (2001) finds a similar problem facing shoe producers in Italy.

This paper is organised divided into three further sections. Section 2 discusses the treatment of upgrading in the cluster and value chain literatures. Section 3 distinguishes between different forms of governance in global value chains and analyses their determinants. Section 4 considers the prospects for upgrading in clusters inserted into global value chains.

2. Upgrading in Clusters and Value Chains

As more and more developing country producers are integrated into global

markets, there is downwards pressure on the prices of both agricultural and manufactured products. For producers to maintain or increase incomes in the face of this pressure, they must either increase the skills content of their activities and/or move into market niches which have entry barriers and are therefore insulated to some extent from these pressures. This is the logic of "high road" strategies for developing local industrial capabilities. We refer to shifts in activities which sustain higher incomes as upgrading. In the context of this paper, we are particularly concerned with four types of upgrading that firms or groups of firms within a value chain might strive to achieve:

- Process upgrading: firms can upgrade processes - transforming inputs into outputs more efficiently by re-organising the production system or introducing superior technology.
- Product upgrading: firms can upgrade by moving into more sophisticated product lines (which can be defined in terms of increased unit values).
- Functional upgrading: firms acquire new functions (or abandon existing functions) so that they increase the overall skill content of their activities. For example, they might complement production with design or marketing, or move out of low-value production activities altogether.
- Intersectoral upgrading: firms apply the competence acquired in a particular function of a chain to move into a new sector. For example, competence in producing TVs is used to make monitors and thus move into the computer sector. Such horizontal

moves into new sectors seem to have been central to Taiwan's ability to gain a foothold in skill intensive sectors.

Both the cluster and value chain literatures emphasise the role played by governance in upgrading. Governance is a term with confused and overlapping meanings. It can be used to refer to the exercise of authority within institutions or polities. In the analysis of economic transactions, it is sometimes used in a wide sense to refer to any mode of co-ordination of activities, including markets, firms and networks. This is the sense in which Williamson (1979) uses the term. Governance can also be defined more narrowly, referring solely to co-ordination through networks. In this paper, economic governance denotes co-ordination of economic activities through non-market relationships. This use of the term retains the essence of governance, namely that some kind of steering of activities takes place (Jessop 1998).

This steering can involve the co-ordination of activities within and between firms. However, it can also involve public actors and co-operation between public and private actors. The cluster literature, for example, emphasises governance through local-level inter-firm networks, business associations and public and public-private institutions. The importance of local governance as a source of competitiveness has been particularly stressed in two lines of recent work: regional science (and in particular the industrial district

literature) and innovation studies.³ These two bodies of work both consider market dynamics insufficient to achieve competitiveness via the high road, i.e. through upgrading.

In the industrial district literature, the connection between governance and upgrading was first established by Brusco (1990). The experience of the "Third Italy" and other European experiences gave rise (in the late 1980s/early 1990s) to a new model of local/regional industrial policy which (1) emphasises delegation of functions to a diverse range of governmental and non-governmental institutions; (2) operates through institutions close to the enterprise (3) extends the concern with entrepreneurship from the private to the public sector; and (4) stresses self-help through business associations and producer consortia. In other words, the proposition is that the development and rapid diffusion of knowledge within the cluster are not solely the result of incidental synergies, the 'industrial atmosphere', but are fostered by policy networks of public and private actors (Scott, 1996). This has led to a new emphasis on the region as a nexus of learning and innovation effects (for example, Storper 1995) and francophone writings on the milieu innovateur (Maillat 1996).

The importance of local policy networks is also central to the work on local

³ The question of locality is also emphasised in the 'New Economic Geography' of Krugman and others (Krugman 1995) and in the work of Michael Porter (Porter 1998), but both play down public governance issues, seeing local competitive advantage arise from market dynamics and inter-firm networks.

innovation systems. In the 1990s the literature concerned with technological development moved from a focus on the individual firm and a strong distinction between innovation and diffusion towards a greater concern with learning-by-interaction (Lundvall 1993) and then with innovation systems, first at the national then increasingly at the regional and local level (Freeman 1995; Edquist 1997, among others). While the cluster literature comes from a tradition (starting with Alfred Marshall) which emphasised the production system and the proximity of firms, the work on local innovation systems was from the beginning more concerned with the knowledge system, the importance of knowledge enhancing organisations, and the benefits of consciously pursued complementarity. The most important thing to emphasise, however, is that both see local governance aimed at fostering upgrading and competitiveness is an essential complement to the incidental synergies arising from agglomeration.

Both these approaches have been used to analyse local industrial development in developing countries (Cassiolato and Lastres 1999; Nadvi 1999; Rabellotti 1997; Schmitz 1995a). Their application has been characterised by the concentration on the division of labour between firms within the cluster. Product and process upgrading are seen as being driven largely by firms and institutions within the cluster. Functional upgrading is rarely given much attention, partly because it is assumed that all the relevant functions are already contained within the cluster. Divisions of labour between

the cluster and outside agents are not given relatively little attention.

The literature on global value chains takes a very different view of inter-firm linkages and knowledge flows. It is also concerned with upgrading but the knowledge required to do so flows through the chain. Particular attention has given to the role of powerful lead firms that 'undertake the functional integration and co-ordination of internationally dispersed activities' (Gereffi 1999: 41). By governing the chain, these global lead firms also structure the upgrading opportunities of local producers.

Global value chain analysis emphasises that local producers learn a great deal from global buyers about how to improve their production processes, attain consistent and high quality, and increase the speed of response. This upgrading effect is particularly significant for local producers new to the global market (Keesing and Lall 1992; Piore and Ruiz Durán 1998; Schmitz and Knorringa 2000). There is also scope for product upgrading. Gereffi attributes this to 'organisational succession', a process by which manufacturers start producing for buyers catering for the low end of the market and then move up to buyers targeting more sophisticated market segments: 'This succession of foreign buyers thus permitted manufacturers to upgrade their facilities as they met buyer demands for more sophisticated products' (Gereffi 1999: 53). It can also arise when the lead firms in the chain look to upgrade their final product offering. Dolan and Humphrey (2000) argue that in the fresh vegetables sector, supermarkets drive product upgrading by intro-

ducing more sophisticated processing and packaging, as well as entirely new product lines.

There differing views about functional upgrading in value chains. The most optimistic view is that of Gereffi, based on his research on the garment chain. He concludes that producers gaining access to the chain have good prospects for upgrading within production and subsequently into design, mar-

ucts sold under the brands of other firms, and finally to (d) the sale of their own branded merchandise in internal and external markets.⁴

Others researchers are more pessimistic. Martin Bell at SPRU, University of Sussex, has referred to the Gereffi scenario as the 'benign escalator' (personal communication). While the progression from (a) to (b) is not controversial, moving to stages (c) and (d) cannot

Table 1: Governance and upgrading clusters vs. value chains

	Clusters	Value Chains
Governance within the locality	Strong local governance characterised by close inter-firm co-operation and active private and public institutions.	Not discussed. Local inter-firm co-operation and government policy largely ignored.
Relations with the external world	External relations not theorised, or assumed (by default) to be based on arm's length market transactions.	Strong governance within the chain. International trade increasingly managed through inter-firm networks.
Upgrading	Emphasis on incremental upgrading (learning by doing) and the spread of innovations through interactions within the cluster. For major upgrading initiatives, local innovation centres play an important role.	Incremental upgrading made possible through learning by doing and the allocation of new tasks by the chain's lead firm. Discontinuous upgrading made possible by 'organisational succession' allowing entry into more complex value chains.
Key competitive challenge	Promoting collective efficiency through interactions within the cluster.	Gaining access to chains and developing linkages with major customers.

keting and branding as a consequence of a combination of 'learning by exporting' and 'organisational succession'. One clear example of upgrading among developing countries producers would be the case of East Asian garment producers. According to Gereffi (1999: 47), they moved from (a) assembly of imported inputs, to (b) taking care of the entire production process including the sourcing of inputs, to (c) design of prod-

be taken for granted. Research on the footwear chain suggests that in some chains global buyers discourage, if not obstruct, design, marketing and branding by local producers (Schmitz and Knorringa 2000). Local producers face obstacles because such upgrading encroaches

⁴ In the electronics industry, similar upgrading paths are described by Hobday (1995) and by Sturgeon (2001).

on their buyers' core competence. In other words, power relations may inhibit upgrading and limit knowledge flows within the chain.

The literatures on clusters and chains suggest quite distinct upgrading opportunities and trajectories for firms in developing countries. Both emphasise the importance of upgrading in order to sustain incomes in the face of increasing competition in global markets, but the routes to this same end are different. The differences are summarised in Table 1. The cluster literature emphasises the importance of local-level governance and the role of incremental upgrading through inter-firm interactions and local institutions. Even the resources for product and functional upgrading are seen mainly to come from within the locality. Links with the wider world are frequently acknowledged, but they are weakly theorised.⁵ Overall, the external world is characterised as a market presenting competitive challenges that must be met through improved organisation and effort within the cluster.

In contrast, the value chain literature focuses on global linkages, leaving the locality largely untheorised. Little attention is given to the role of business associations and local inter-firm co-operation in competitiveness and upgrading.⁶ Upgrading occurs as a result of learning by exporting, buyer promotion of the capabilities of developing country producers or by entering value chains

with more demanding customers. In other words, the then knowledge required for upgrading flows down through the chain, and customers are the most important source of knowledge about processes and markets.

While the table may overdraw the differences, both approaches fail to address the question of what might be the governance and upgrading dynamics of clusters that are inserted into global value chains. In order to resolve the apparent contradiction between the approaches, two steps are required. Firstly, it is necessary to distinguish between different forms of governance in global value chains and recognise the reasons why they exist. Secondly, it is necessary to understand the way in which competences are acquired at the level of the firm and the cluster. This will allow a better understanding the effects of both global and local linkages on various kinds of upgrading.

3. Value Chain Governance

Global value chain analysis emerged initially out of a recognition of the role of global buyers in creating global production and marketing networks. Gereffi (1994) emphasised the importance of what he called "buyer-driven global commodity chains" in the garments industry. In extreme cases, large retailers or brand-name companies organised production systems that integrated producers in various countries but without themselves owning any manufacturing facilities. Work on horticultural exports from Africa (Dolan and Humphrey, 2000) showed how UK supermarkets exercised a decisive influence over

⁵ See Bell and Albu (1999) for a discussion of this point.

⁶ The role of national policies is also underplayed.

production and processing in African countries even though the producers, exporters and UK importers were independent companies.

In these two cases, the role of powerful lead firms in steering the entire chain is clear. However, not all chains have these characteristics. Co-ordination in value chains may also take place predominantly through arms-length market relationships. Firms in a supply chain may share competences and decision-making. Finally, activities in a supply chain may be brought under the direct control of a firm through vertical integration. This leads us to distinguish between four ways in which relationships between activities in a value chain might be managed: arm's-length market relationships, networks, quasi-hierarchy, and hierarchy.

Why do these different governance structures arise? Governance clearly involves co-ordination. One way of discussing this is to consider the act of governance as involving parameter setting and enforcement. At any point in the chain, activities are defined by three key parameters:

1. What is to be produced. This involves the design of products, both in broad conception and detailed specifications.
2. How it is to be produced. This involves the definition of production processes, which can include elements such as the technology to be used, quality systems, labour standards and environmental standards.
3. Physical product flow: how much is to be produced, when, and how the

flow of product along the chain is to be handled.

Chain governance arises when non-market co-ordination of activities along the chain is required: agents at one point in the chain set the parameters followed by agents at one or more other points in the chain. But why should firms wish to specify product, process and logistics parameters?

Buyer specification of product design tends to arise in two circumstances. Firstly, it is needed when manufacturers make products with integral architecture, with the consequence that they require a high level of customised components. Secondly, it arises when the buyer has a better understanding of the demands of the market than the supplier. The buyer then interprets the needs of the market and informs the supplier of what is required. The supplier's limited knowledge of market demands may arise in fast-moving markets characterised by innovation and product differentiation. It also arises when developing country suppliers are integrated into global value chains and exposed to the demands of more sophisticated markets. As Hobday has argued, the 'latecomer' firm to the global economy is "dislocated from the mainstream international markets it wishes to supply" (Hobday 1995: 34).

The main reason for specification of process parameters along the chain is to contain risk. Buyers specify (and enforce) process parameters when there are potential losses arising from a failure to meet commitments (for example, delivering the right product on time) or a failure to meet certain product or process standards. These performance risks,

relating to factors such as quality, response time and reliability of delivery, become more important as firms engage in non-price competition. They also increase as developing country producers are faced with increasingly complex standards relating to both products and processes required for product sold in industrialised countries. Once again, compliance with the standards might be achieved through the application generic standards such as ISO 9000 (quality systems) and ISO 14000 (environmental standards) and SA 8000 (social standards), but firms may not be prepared to rely on third party standards and auditing in sensitive areas.

Specification of logistics parameters along the chain is likely to arise when there is a degree of task complexity and/or time pressure that requires co-ordination of tasks across firms. This tends to increase not only as competition on the basis of product innovation increases, but also as a result of the specifications of product and process parameters. This narrows down the range of available suppliers and makes it impossible to buy products from inventory carried by intermediaries.

It is important to recognise that not all parameter setting along the chain results in chain governance. For example, buyers can customise products by choosing from a predetermined range of options, or provide detailed product drawings from which products can be produced by generic equipment. Helper (1993) describes how this system was used in the US auto industry before the 1980s. It allowed the assemblers to maintain a large number of potential

suppliers. Similarly, buyers may enforce process standards while maintaining arm's-length market relationships by insisting that suppliers conform to generic standards, such as ISO 9000.⁷ However, parameter setting is frequently achieved through the development of governance structures in value chains. To the extent that specifying or monitoring compliance with product and process parameters requires transaction-specific investments in relationships with suppliers, relationships in value chain are unlikely to be arm's-length. Hence governance is involved.

Governance structures enable setting and enforcement of parameters. This is achieved by developing inter-firm relationships, by defining which sources of knowledge will be mobilised for use in the chain and to whom they will be transmitted and by creating mechanism to monitor compliance. In short, chain governance structures are the relationships and institutional mechanisms through which non-market co-ordination of the chain is achieved. There is a continuum from arm's-length market relationships through to hierarchical governance (vertical integration). In between, there are two particularly important types of governance structures in global value chains: networks bringing together partners with complementary competences, and quasi hierarchy in which there is asymmetry of competence and power in favour of one party (frequently the global buyer). These four types of

⁷ This point is discussed in more detail in Humphrey and Schmitz (2001).

relationships can be characterised as follows:

- Arm's length market relations. Buyer and supplier do not develop close relationships. This implies that the buyer (i) buys a standard product, or (ii) buys product made-to-order on the basis of predefined options, or (iii) provides drawings and, in effect, purchases producer's universal production skills. This further implies that the buyer's requirements (including quality, reliability, etc.) could be met by a range of firms. If process parameters are specified, they are met through the application of non-transaction specific standards, frequently verified by independent certification.
- Networks. Firms co-operate in a close and even relationship. There has to be some reason for incurring the costs of co-operation, and is usually arises from the need for collaboration on product development and/or production scheduling. The relationship is characterised by the sharing of competences and reciprocal dependence.⁸ In this case, the buyer may specify certain process standards to be attained, but the supplier should be confident enough to work out how to meet them.
- Quasi hierarchy . One firm exercises a high degree of control over other firms, frequently specifying the characteristics of the product to be produced, and sometimes specifying the processes to be followed and the

control mechanisms to be enforced. This level of control can arise not only from the lead firm's role in defining the product, but also from the buyer's perceived risk of losses from the suppliers' performance failures. In other words, there are some doubts about the competence of the supplier. This is the typical form of governance in a buyer-driven value chain. The lead firm in the chain may exercise control not only over its direct suppliers but also further along the chain.⁹

- Hierarchy. The lead firm takes direct ownership of operations in the chain.

Clearly, the specification of product, process and logistics parameters can lead to increasing vertical integration. However, global value chain analysis has identified a number of tendencies in the world economy which are likely to promote the development of quasi-hierarchy. The parameters are specified, but without ownership. Four factors, in particular, can be mentioned:

- Product differentiation and innovation have become increasingly important sources of competitive advantage. Insofar as they require customised, complex exchanges between buyers and suppliers, they lead to network forms of governance. These have long been evident in some manufacturing industries, particularly those with integral product architectures. However, a new driver for the trend to quasi-hierarchy is in-

⁸ For a discussion of the role of complementary competences in the creation of network relationships between firms, see Richardson (1972) and Palpacuer (2000).

⁹ This type of control is usually exercised by buyers over suppliers. However, there are cases where control moves in the other direction, as with franchising operations or car dealerships.

creasing concentration in the retail sector. Large retailing firms – whether sourcing directly or through intermediaries - have become powerful global buyers. Frequently, these buyers focus on retailing but play an important role in product development and branding. In the case of buyers such as supermarkets, the fact that they are responsible for stocking between 8,000 and 20,000 products in a single store means that for almost all products vertical integration is ruled out. However, their power and their use of product differentiation and innovation in the pursuit of competitive advantage means that they actively manage the supply chain.

- Final product markets are characterised by an increasing emphasis on safety, labour and environmental standards. This leads to the emergence of "credence goods", which in the context of agricultural produce have been described as follows:

"A credence good is a complex, new product with quality and/or safety aspects that cannot be known to consumers through sensory inspection or observation-in-consumption... The quality and safety characteristics that constitute credence attributes include the following: (1) food safety; (2) healthier, more nutritional foods (low-fat, low-salt, etc.); (3) authenticity; (4) production processes that promote a safe environment and sustainable agriculture; (5) "fair trade" attributes (e.g., working conditions)" (Reardon et al. 2001).

Credence goods require greater monitoring and supervision of production processes to ensure that the claimed characteristics are present and to convince consumers that they are present. Credence goods are particularly prevalent

parts of the food industry, but pressure on retailers more generally to meet labour and environmental standards has been increasing. This pressure has come not only from consumer groups and NGOs, but also from governments. In addition, retailers and brand-name companies themselves develop standards themselves as forms of product differentiation.

- There is a degree of task complexity and/or time pressure that requires co-ordination of tasks across firms. This tends to increase as competition on the basis of product innovation and product availability increases. The elimination of stocks and the pressure to reduce 'time to market' favour quasi-hierarchy.
- In the pursuit of low-cost inputs in labour-intensive sector such as garments, global buyers are frequently looking to develop new sources of supply. As stressed by Keesing and Lall (1992), such new suppliers are expected to meet requirements that frequently do not (yet) apply to their domestic markets. This creates a gap between the capabilities required for the domestic market and those required for the export market. Therefore, parameter setting and enforcement may be required to ensure that products and processes meet the required standards. If the gap has to be closed quickly, buyers will need to invest in a few selected suppliers and help them to upgrade.

If developing country producers find themselves increasingly in value chains controlled by global buyers, what are their upgrading prospects? The next section analyses this question.

4. Value Chain Relationships and Upgrading in Clusters

A key proposition of this paper is that the upgrading prospects of clusters differ according to the type of value chain they feed into. Different forms of chain governance have different upgrading implications. Elsewhere (Humphrey and Schmitz 2000) we have set these out in a systematic and comparative way, focusing in particular on the implications for developing country producers. The main conclusions were:

- Insertion in a quasi-hierarchical chain offers very favourable conditions for fast process and product upgrading but hinders functional upgrading.
- In chains characterised by market-based relationships, process and product upgrading tend to be slower (not fostered by global buyers), but the road to functional upgrading is more open.
- Chains characterised by even networks offer ideal upgrading conditions but are the least likely for developing country producers because of the high level of (complementary) competences required.

These conclusions arose from a comparative but largely static framework of analysis.¹⁰ In this paper we adopt a more dynamic approach and concentrate on the implications of operating in a quasi-

hierarchical chain. For the reasons set out at the end of last section, this type of chain is particularly relevant for export oriented developing country producers.

Concentrating on quasi-hierarchical chains means dealing with power and unequal relationships. The upgrading implications are illustrated in the following subsection on the Brazilian shoe industry: it shows how global buyers both contributed to process and product upgrading of local producers and also placed limits on functional upgrading and market diversification. This is followed by an analysis of how these limits can be overcome where firms pursue strategies for competence acquisition.

4.1. Upgrading in the Sinos Valley Footwear Cluster

The way upgrading possibilities in clusters are influenced by their insertion in quasi-hierarchical value chains is illustrated by the case of the Sinos Valley shoe cluster in the South of Brazil.¹¹ In the late 1960s, this cluster was composed predominantly of small firms producing for the domestic market. With the arrival of buyers from the United States, the characteristics of the cluster began to change. The external buyers looked for much larger volumes of standardised products, which led to the growth of large producers. By the late 1980s, a significant number of firms were large

¹⁰ These conclusions have been subjected to empirical investigation in a number of developing country and developed country clusters, for details see the papers on local and global governance available at www.ids.ac.uk/ids/global/vw.html.

¹¹ The account which follows is based on Schmitz (1995b; 1999). This discussion focuses on shoe producers. For a discussion of upgrading in the footwear components sector in the Sinos Valley, see Bazan and Navas-Aleman (2001).

by shoe industry standards, employing more than 500 people.

At one level, this integration into the US footwear value chain facilitated upgrading. Process standards rose as did product quality. The buyers studied the market, developed models and product specifications, helped producers in the choice of technology and organisation of production, inspected quality on site, and organised transport and payment. Firms in the Sinos Valley concentrated on the production process and the organisation of their own local supply chains, while the buyers (traders or retailers' agents) were responsible for product design and logistics. Local firms benefitted from this. They gained access to the US market and grew very rapidly.

The danger of this situation became evident when Chinese producers undercut Brazilian products in the US market in the early 1990s, and Brazilian producers were faced with sharply declining prices for their products. The upgrading imperative was clear, but the upgrading strategies of local lead firms favoured the sphere of production and neglected the areas of design and marketing. Although the local business association developed a collective strategy of raising Brazil's image in the world footwear markets and of strengthening design capabilities, these proposals were not put into practice. The largest export manufacturers did not support them because they feared that advancing into design and marketing would encroach on the core competence of the cluster's main buyer, which accounted for over 80 per cent of their output and close to 40 per cent of the total cluster output.

This outcome is reflected in the performance profile of the Sinos Valley in the late 1990s. Global buyers in the US and Europe rated the cluster's production abilities (production quality, speed of response, punctuality, flexibility) as matching the best of the world (i.e. Italy), but on innovative design it lagged far behind the Italians (Schmitz and Knorringa 2000). Clearly, the governance of the footwear export chain had upgraded production capabilities but had blocked the development of design capabilities. However, such design capabilities were developed by firms producing for the domestic market and for export market in Latin America (Bazan and Navas-Aleman 2001), and this point will be considered in the next section.

4.2. Competence Acquisition in Clusters

The Sinos Valley case raises important questions about governance and upgrading. It suggests that integration into global quasi-hierarchical chains is a two-edged sword. On the one hand, it facilitates inclusion and rapid enhancement of product and process capabilities. Developing country firms are able to export into markets which would otherwise be difficult for them to penetrate. On the other hand, they become tied into relationships that prevent functional upgrading and leave them dependent on one or two powerful customers. In some cases, exclusive relationships with large buyers prevent them from diversifying their customer base. This further raises the cost of the "exit option", tying them to their key buyer.

However, it is important to recognise that chain governance is a dynamic process, and there are two reasons for not being pessimistic about the opportunities available to developing country clusters when inserted into quasi-hierarchical chains. First, power is relational: the exercise of power by one party depends on the powerlessness of other parties in the chain. Existing producers, or their spin offs, may acquire new competences and explore new markets, and this changes power relationships. Second, establishing and maintaining quasi-hierarchical governance is costly for the lead firm and leads to inflexibility because of transaction specific investments (and penalties if the exit option is exercised).

This leads to a more optimistic view of the upgrading options of local producers. However, a basic requirement for upgrading is the strategic intent of the firms involved. Without intra-firm investment in equipment, organisational arrangements and people, no substantial upgrading of any kind is possible. Bell (1984) has emphasised this a long time ago. One of the main lessons from the recent East Asian experience is that a significant number of firms, including small and medium-sized enterprises, made these investments and showed strategic intent (Hobday 1995; Kishimoto 2001). One of the consequences of the emphasis on relationships between firms (and/or institutions) in the debates on industrial clusters, innovation systems and value chains is that it crowds out the concern with what goes inside the firm.

Where this strategic intent exists, various ways of breaking out of quasi-

hierarchy can be envisaged.¹² The first, and perhaps most important one, is to use the knowledge acquired in working for their main global buyer and seek to use it in supplying other (probably smaller) markets in which relationships with the customers are more uneven. This is not easy. For example, Bazan and Navas-Aleman (2001) found that some Brazilian firms which were world class suppliers of very big US buyers found it difficult to succeed in the national or Latin American market. Manufacturing to tight specifications for the main customer requires an internal organisation geared to this purpose and builds up competences which are highly developed but narrow (limited to the sphere of production). Entering new markets requires additional – or other combinations – of competences. The importance of acquiring such competences is emphasised in Lee and Chen's (2000) analysis of contract manufacturers in the electronics industry in Taiwan. They argue that firms were able to acquire new competences by applying lessons from one part of their production to another. They could, for example, take a design supplied by one customer and then make adaptations and use the modified design to supply other customers in other markets. The emphasis on 'other markets' is critical. Where producers sell to powerful customers, they cannot

¹² A dynamic approach would in particular look to the role of a new generation of managers in existing enterprises and, especially relevant in clusters, to the spin offs. Often they feel less constrained by the bonds with existing powerful customers and more able to take new initiatives.

compete directly with them and must find other products in markets when diversifying and upgrading.

Another strategy is to move into functions which the lead firms governing the chain are willing to relinquish. Recall that lead firms establish quasi-hierarchical relationships because of the risk of supplier failure. As competences in the supplying cluster increase, local firms may find that the lead firms vacate certain spaces. For example, in the first two decades of the Sinos Valley's export growth, logistics from the factory gate to the warehouses in the US or Europe were controlled by the buyers. This function then began to be carried out by independent firms (most of them local) who compete fiercely for customers in this logistics market. A more significant example of functional upgrading by producers is given by Gereffi (1999). US garment buyers were willing to relinquish the organisation of the East Asian supply chain to Taiwanese manufacturers. Lee and Chen (2000) and Kishimoto (2001), in their work on the electronics industry, suggest that some Taiwanese computer manufacturers began to take over functions such as the development of new processes and design adaptations. This upgrading drives changes in chain governance, evolving from quasi-hierarchy to either network or market-based relationships.

Which form the new relationship takes and how far this process of functional upgrading can go depends a) the type of buyer and b) the ability of the producers to make (individually or collectively) the required investment. Buyers who consider sourcing as their

core competence are unlikely to leave the management of the supply chain to their producers. In contrast, buyers who see their core competence in marketing and branding, are less likely to retain this function. Thus the likelihood of conflict or not will depend on the type of buyer.

Conflict or not, the ability to invest in the acquisition of new competences is critical. This is clear from the innovation literature, especially Bell (1984). This literature tends to emphasise the investment requirements in the sphere of production, especially technical change. Often these are indeed formidable. However, in the labour intensive products typically exported by developing countries, the biggest entry barriers are in the sphere of marketing and branding, as is recognised by Lall (1991) and Hobday (1995). Only large developing country firms can make the investment required, and it is highly risky. In some cases, the way forward is a collective investment. Brazilian shoe and component producers are trying to establish a collective brand (Bazan and Navas-Aleman 2001).

It seems reasonable to assume that the greater the leap in upgrading, the less likely it is that firms can use knowledge acquired linkages. Therefore they will have to rely to a greater extent on local and national sources of innovation. In particular, inter-sectoral upgrading, which involves the switch of firms from one sector to another, which is one of the characteristics of Taiwanese industrialisation, would seem to depend heavily on local and national systems of innovation. The fact that upgrading is commonly seen in East Asia but relatively rare in other parts of the world is almost cer-

tainly related to the characteristics of industry policy and innovation systems in these countries. The converse conclusion is that incremental innovation is more likely to draw upon resources from within the value chain.

5. Conclusion

The recognition of the importance of clustering has put economic geography back at the centre of the economic development debate in both developed and less developed countries. However, the preoccupation with the quality of local linkages has led to a neglect of the global linkages. The global value chain approach emphasises that - in many cases - the clustering producers do not sell into open market and that the chains which connect the local producers with the distant retailers are subject to governance by powerful lead firms. The purpose of this paper was to set out the implications of this global chain governance for local upgrading.

The central proposition of the paper is that local upgrading opportunities vary with the way chains are governed. Distinguishing between different forms of upgrading and different forms of chain co-ordination is central to this analysis. Equally important, one needs to understand why certain firms seek to govern the chain, given that effective governance requires substantial investment. The paper explains these reasons and the upgrading implications, focussing on the case of developing country producers and the relationship they typically find themselves in when exporting to developed-country markets. Such chains are often characterised by what we call

quasi-hierarchy: the global buyers set product parameters in order to determine product design and process parameters to reduce the risks associated with non-compliance with standards. Recent studies suggest that quasi-hierarchical governance promotes fast upgrading for local producers in the sphere of production, but these firms find it difficult to move into higher value activities. This paper shows how local producers can break out of the 'lock-in' which results from working for a small number of global buyers. It recognises the fragility of global chain governance and the opening up new opportunities for local producers. Taking advantage of these opportunities does however require strategic intent and substantial investment by local firms. The greater the leap required the more important is an effective local innovation system, which includes collective private initiatives and supportive public organisations.

6. References

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