Competition and Coordination in Liberalized African Cotton Market Systems

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* This paper is an output of a research project funded by the Social Science Research Unit of the UK Department for International Development (DFID). DFID supports policies, programs and projects to promote international development. DFID provides funds for this study as part of that objective, but the views and opinions expressed are those of the author(s) alone. The authors also acknowledge the contribution of Michel Fok and Sophia Tazi (CIRAD-TERA) in encouraging collaborative work on cotton systems across Africa and the financial support of the French Ministry of Foreign Affairs for visits by Mr. Colin Poulton to Ghana in 2001 and 2003. In addition, the authors wish to thank Andrew Dorward, Terry Townsend and two anonymous reviewers for valuable comments on earlier drafts of this paper. Final revision accepted: 30 October 2003.
Summary. — Private operators now dominate input supply, crop buying and ginning activities in many African cotton sectors. Varying levels of competition are observed, but greater levels of competition are not necessarily associated with better system performance. This paper explores this phenomenon, drawing on the liberalization experience of Ghana, Mozambique, Tanzania, Uganda, Zambia and Zimbabwe. While the capacity of the state to support markets remains weak, there may be tradeoffs between the level of competition and the degree of coordination achieved between players within a sector. Different sectoral structures are observed, with a different role for the state appropriate for each.

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Key words — cotton, market liberalization, competition, coordination, Africa

1. INTRODUCTION

Cotton constitutes an important cash crop in more than one third of all countries in sub-Saharan Africa and one upon which millions of rural households depend for their livelihoods. In most Francophone West African countries, the cotton sector continues to be organized around a state dominated, single-channel marketing system, albeit one under increasing pressure to liberalize. Elsewhere, in conformity with the general trend in sub-Saharan Africa, the sector has been liberalized and private operators now dominate input supply, crop buying, ginning and selling. Liberalization has not however necessarily led to greater competition between these private operators. Moreover, it is not clear that greater competition is associated with better system performance. This paper attempts to explain these phenomena, drawing on the liberalization experience of six Anglophone and Lusophone countries (Ghana, Mozambique, Tanzania, Uganda, Zambia and Zimbabwe). It argues that, while the capacity of the state to regulate and support the cotton sector remains weak (as it can be expected to do for the foreseeable future), there may be tradeoffs between competition and coordination within the sector. We believe that these arguments have relevance well beyond cotton. The paper develops a framework that can be applied to the analysis of any market system in a context where state capacity is weak. The framework also provides helpful insights into the appropriate role of the state in supporting and regulating private economic activity under different market conditions.

2. AFRICAN COTTON SECTOR LIBERALIZATION: SUCCESSES AND CHALLENGES

In their review of the liberalization of African cash crop sectors, Shepherd and Farolfi (1999) note that liberalization has been a broadly positive experience, but that there are a number of common challenges yet to be resolved. These general findings are relevant to the particular case of cotton. Here, too, liberalization has had a number of positive impacts (Baffes, 2001). The influx of private capital, management expertise and entrepreneurship associated with liberalization has, in most countries, contributed to a resurgence in production, albeit one that has recently been threatened by the depressed world prices for cotton lint. Almost everywhere, producers have benefited from prompter payment and now receive a higher share of the final price for lint than before. Nevertheless, liberalized African cotton sectors continue to confront a number of common challenges, including how to: maintain high-quality standards for cotton lint; achieve efficient delivery of inputs to smallholder producers, in turn requiring an effective mechanism for disbursement and recovery of seasonal credit; support research into improved seed varieties, pest control and cultural practices, complemented by effective extension to producers.

These challenges can be linked to the technoeconomic attributes of cotton production. For example, cotton is widely acknowledged to be particularly input-demanding, partly because it is vulnerable to a large number of pests. In addition, cottonseed degenerates quickly, making good management of the seed resource critical. The current excess supply in the world market for lint makes it particularly important that these challenges be met. Even when the market is saturated, producers of high and uniform quality lint will normally find ready buyers, whereas suppliers of a low and variable quality product may be forced to accept steep discounts. Furthermore, high productivity is essential to survival when prices are low and it is noteworthy that, in most cases, the resurgence in production post-liberalization are attributable primarily to an increase in the
number of producers and/or an expansion of area, rather than to increased yields.

Although the specificities of cotton production shape the challenges discussed here, nevertheless our arguments may have more general relevance. Our basic argument is that meeting these challenges requires a significant degree of coordination between players in the market system. In practice, this coordination is most readily achieved where the number of cotton companies or ginners in the sector is low. Hence, insofar as coordination is achieved (good for both companies and producers), its achievement may come at the cost of reduced price competition within the system (bad for producers). There may thus be a tradeoff in system performance between competition and coordination, with the most successful systems being those that strike the best balance between these two objectives.

In the sections that follow, we explain what we mean by coordination and why its achievement might require a tradeoff with competition; briefly describe the six selected cotton systems and identify three distinct types of system structure and organization found among them; show how the six cotton systems have responded to the challenges outlined above and use this to illustrate the tradeoff between competition and coordination; identify the competition and coordination challenges associated with each of the sectoral structures and observe the different role for the state (in terms of market development and regulation) that is consistent with each.

3. THEORETICAL FRAMEWORK

(a) Coordination

We may think of coordination as effort or measures designed to make players within a market system act in a common or complementary way or toward a common goal. This may also require effort or measures designed to prevent players from pursuing contrary paths or goals. Coordination may be undertaken by private agents acting collectively or may be orchestrated by state agents defining the boundaries within which private agents can act.

Our consideration of coordination starts from the neoclassical ideal of perfect competition, characterized by spot market transactions and unrestrained competition between atomistic agents. In this world, the only coordination required between players at different stages of a market system (i.e., vertical coordination) is the coordination of demand and supply. This is achieved through the operation of the market price mechanism. At first glance, there does not appear to be any (horizontal) coordination among players at the same stage of a market system. North (1990) has argued however that implicit in the perfectly competitive model—and essential to any real world approximation of it—is a highly sophisticated set of institutions, which make information available and define and enforce the “rules of the game.” Regulations and laws, to be obeyed by all players equally, define the boundaries within which competition can take place. In the terms of this paper, these are impersonal coordination mechanisms.

North’s argument can be illustrated with respect to grades and standards. The perfectly competitive model assumes homogeneous products. But, the same competitive outcome could be achieved if the assumption of homogeneous products were replaced by an assumption of perfectly functioning institutions that ensured total compliance with set grades and standards for each commodity. Indeed, one of the reasons why competition is perfect in the perfectly competitive model is that all distractions other than price are removed. Arguably, the perfectly competitive model is also an example of perfect coordination. In this limiting case, there is no tradeoff between competition and coordination. In the real world, however, where the conditions of the perfectly competitive model never fully hold, coordination becomes more challenging. It also becomes more likely that there will exist some form of tradeoff between competition and coordination. We now consider the implications for coordination of some major departures from these conditions.

(i) Investment in specific assets

The factors that lead players within a market system to move away from reliance on spot market transactions as the basis for vertical coordination have been elucidated by Williamson (1985) and applied specifically to agricultural market systems in developing countries by Jaffee and Morton (1995). At the heart of Williamson’s argument are specific assets, defined as those that have a lower (or no) value outside of a particular transaction or contractual relationship. Given that information on the actions and intentions of other
actors is generally imperfect, asset specificity makes an investor vulnerable to opportunism by other parties to the contract. Investment in specific assets, therefore, may require some form of assurance from a second party that they will buy the resulting products for a remunerative price for at least long enough for the investment to be recouped.

More recently, Hall and Soskice (2001) have argued that horizontal coordination can also provide assurance for investment in specific assets. As with Williamson, developed economies are their primary focus. For example, within German manufacturing, to reduce free-riding by firms on training investment, strong employer and worker associations negotiate industry-wide wage settlements for standard skill grades, such that the incentive for employees to switch firms after completing their training is minimized. In this case, there is a tradeoff between investment in human skills and interfirm competition in the labor market. The case of African cotton ginners providing pre-harvest loans to producers is directly analogous. The provision of loans increases the ginners’ exposure to free-riding actions by cotton-buying competitors. To tackle the sideselling of cotton by producers, ginners are likely both to provide incentives directly to the producers (through the terms of the vertical relationship) and to seek ways of restraining the actions of competitors (horizontal coordination). This is likely to involve some restraints on competition for seed cotton supply.

(ii) Provision of public goods

A variety of public goods (e.g., effective quality control regulations and procedures and high-quality research) are critical to the long-run success of a cash crop system. There are two key coordination challenges involved in providing these goods: agreeing what should be done (what research to fund, which quality standards to opt for) and how it should be done (who has responsibility for which aspects, how it should be funded); and implementing and enforcing these agreements, including overcoming the problems of free-riding and other opportunistic actions.

(iii) Types of coordination: formal vs relational, state vs private

Provision of public goods is often held to be the responsibility of the state. The state may not however perform this function for various reasons. It may wish to fulfill its responsibility, but not have the capacity to do so. It may neglect the market system, leaving private actors to coordinate by themselves. It may also decide that the market system in question is a private arena and so delegate responsibility to its private participants. This could be a rational course of action for a state that was overstretched, especially if it was decided that decisions within the market system did not compromise key national or political interests (e.g., food security). Public withdrawal from a sector might then be a way of communicating to private investors that the state would not interfere with their investments if they committed themselves to that sector.

Where this is the case, private players within a market system have the following coordination options. They may fail to coordinate and suffer the consequences (lack of public goods, insecurity of asset specific investment). Alternatively, they may establish a collective organisation that can set and enforce formal rules in an impartial manner and provide public goods in place of the state. In practice, such an organisation is unlikely to be independent of the more powerful interests that contributed to its establishment. It may however, give smaller players a stronger voice than the third alternative, which is to rely on relational or interpersonal, rather than impersonal, coordination mechanisms. This is most likely to occur when the number of players is small, as the time and associated costs of relational coordination depend on the number (and quality) of relationships involved.

Table 1 thus identifies the types of coordination that may be observed in a liberalized market system.

<table>
<thead>
<tr>
<th>Table 1. Types of coordination</th>
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<td></td>
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<tr>
<td>State</td>
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<td>Private actors</td>
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Relational coordination—characterized by informal agreements enforced by consensus or private sanction—may be the most effective option for many cash crop systems in Africa. But, it suffers from two main drawbacks. First, there are few counterbalances to the wishes of the dominant players. Thus, within a cotton system, neither the voices of farmers nor of small buyers/ginners may carry much weight. Second, it relies on private enforcement of rules, usually by the dominant players. This requires those players to exercise power over smaller rivals. An example is that firms with ginneries may threaten to bar smaller competitors from access to ginning facilities if the smaller competitors are caught buying without reference to established seed cotton grades or from producers who have contracted into an input credit scheme. Unfortunately, such power can also be used not just to secure coordination (a positive), but also to restrict price or other forms of competition within the market.

(b) Competition and coordination

Traditionally, competition within agricultural market systems has been thought of primarily in terms of pricing, with the main determinant of competition being the number of players. In this paper, we recognize that competition can occur along several dimensions. Cotton companies may compete on geographical coverage, the range of services they provide to producers, the timeliness with which these services are provided, and the prices they pay for seed cotton. In the short term, producers may respond positively to better services even when they substitute for more competitive seed cotton prices. But, if prices remain depressed beyond a couple of seasons, farmers’ commitment and output are likely to fall. We also recognize that conduct can be as important as structure in determining the competitiveness of a market or sector. Having few players within a market may make collusion on pricing feasible, but whether it occurs depends on the incentives facing those players. Large players within a concentrated market might still act in a highly competitive (or rivalrous) fashion. In all six cotton sectors examined here, total ginning capacity comfortably exceeds a typical annual harvest. The desire for high capacity utilization at ginning level thus provides an important incentive to competition, even when the number of companies purchasing seed cotton is few.

From the foregoing discussion, we posit the following links between coordination and competition. First, impersonal coordination, through formal rule setting and enforcement, may be the only viable option when the number of companies in a sector is high. If effective, such coordination can also enhance competition. But, the institutional requirements for this are high. In practice, as will be shown below, such coordination is often ineffective. Hence, where the number of companies in a sector is high, competition may be strong, but coordination weak.

Second, where relational coordination is relied upon, competition could be low(ered) for a number of reasons. Obtaining agreements and monitoring their implementation are both easier where few players are involved. Hence, more concentrated market systems are likely to be better coordinated. Whether they suffer from lower competition will depend on the nature of the incentives facing firms. Regular meetings between firms (essential to coordination) may lead to information sharing and may also foster the trust necessary to engage in and sustain price collusion. Finally, preventing free-riding or other opportunistic behavior requires that players committed to the upholding of an agreement be able to sanction those that are tempted to break it. Such sanctions may be necessary if coordination is to be achieved. But, the power to sanction can also be used to discourage competitive pricing (or other competitive) behavior by the same competitors.

At the start of this article, we noted three key challenges facing liberalized African cotton sectors. All of these require some form of coordinated response by the players within a sector. Our judgement is that those sectors that achieve effective coordination will perform better than those that do not. The experience of the six sectors to date suggests that this will be true, even if—in the absence of state capacity for effective impersonal coordination—coordination is achieved at the expense of some loss in competition. It is to this experience that we now turn.

4. EXPERIENCE OF LIBERALIZED COTTON SECTORS

(a) The six sectors

Table 2 provides some indication of the relative size and structure of the cotton sectors in
Table 2. Comparison of the six surveyed cotton sectors, 2001–2002

<table>
<thead>
<tr>
<th>Country</th>
<th>First year of liberalization</th>
<th>Estimated number of seed cotton producers</th>
<th>Number of buying companies in 2001–02 marketing season</th>
<th>Percentage share of market of top three buyers (CR3) 2001–02</th>
<th>Percentage increase in seed cotton production since liberalization (%)</th>
<th>Estimated average seed cotton yield 1998–2002 (kg/ha)</th>
<th>Mean seed cotton price 1998–2002 (US$ per kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>1985</td>
<td>50,000</td>
<td>2</td>
<td>12</td>
<td>88</td>
<td>3,831</td>
<td>600</td>
</tr>
<tr>
<td>Mozambique</td>
<td>1989</td>
<td>230,000</td>
<td>3</td>
<td>15</td>
<td>50+</td>
<td>671</td>
<td>390</td>
</tr>
<tr>
<td>Tanzania</td>
<td>1994</td>
<td>300,000+</td>
<td>28</td>
<td>30</td>
<td>25</td>
<td>−32</td>
<td>421</td>
</tr>
<tr>
<td>Uganda</td>
<td>1994</td>
<td>300,000+</td>
<td>&lt;15</td>
<td>27</td>
<td>50–60 (CR5)</td>
<td>167</td>
<td>310</td>
</tr>
<tr>
<td>Zambia</td>
<td>1995</td>
<td>80,000</td>
<td>2</td>
<td>6</td>
<td>90</td>
<td>119</td>
<td>568</td>
</tr>
<tr>
<td>Zimbabwe (smallholder)</td>
<td>1995</td>
<td>250,000+</td>
<td>2</td>
<td>5</td>
<td>95</td>
<td>130</td>
<td>752</td>
</tr>
</tbody>
</table>

Sources: Ghana—S. Dittoh (personal communication) and authors’ own research; Uganda—(Lundbaek, 2002; Baffes, 2002); background papers containing the information for the other four countries can be downloaded from www.wye.ic.ac.uk/AgEcon/ADU/research/projects/cottonE/index.html.

a Buyers in Tanzania include both cooperative unions and private buyers. Number of buying companies quoted for Zambia is number of ginners only.

b CR3 figure for Tanzania is an estimate based on active ginning capacity.

c “Percentage increase in seed cotton production since liberalization” is calculated as the increase in mean seed cotton production for the 1998–2002 harvest seasons over that achieved in the five seasons prior to liberalization.

d The seed cotton price for Zimbabwe in 2001 and 2002 is based on a “blended” exchange rate (US$1 = Z$172 for 2001 and US$1 = Z$516 for 2002). Cotton exporters had to sell 40% of their exports at the official exchange rate (US$1 = Z$55), but could then sell the remainder using the parallel exchange rate. Price calculations for Uganda are based on 1998–2001 and for Ghana on 1999–2002. Quoted Tanzanian prices are seasonal “medians.”
the six countries covered by this survey. Figure 1 shows production trends over the past 15 years.

Ghana, the smallest of the six sectors, was the first to liberalize. In 1985 the assets of the parastatal Ghana Cotton Development Board were sold to key sector stakeholders to form the Ghana Cotton Company Ltd (GCCL). In the same year, the first private firm began competing in one of the country’s three production regions (Upper West). The firms pursued a common path of input-intensive production, providing all producers with a standard package (on credit) that included tractor ploughing, seed, fertilizer, pesticide spraying and extension advice. They also pursued a common pricing policy. Subsequent entrants have been expected to follow the same approach. The twin challenges of maintaining producer commitment to cotton production and of ensuring seasonal credit recovery have dominated companies’ thinking since liberalization. By 2000 the main players in the sector concluded that credit recovery could not be achieved where multiple companies were competing for business in a given village. They, therefore, persuaded the Ministry of Agriculture, which until that time had played almost no part in the sector’s affairs, to institute a local monopoly system, whereby each company was given exclusive rights to supply production services to, and buy seed cotton from, a given geographical area(s). Although the allocation of the new zones was reasonably transparent, some companies were unhappy with the outcome. The implementation of zoning, therefore, did not start until 2001 and, even then, opposition to the plan led to late planting in some areas. Combined with poor weather, this led to a catastrophic drop in production, from which the sector is only now beginning to recover.

The recovery of the Mozambican cotton sector from the ravages of civil war began in the late 1980s with the formation of three joint-venture companies, which were given exclusive rights to organise cotton production in extensive “concession” areas. Given that investment costs included road rehabilitation and private security, as well as investment in input supply and extension services, it was felt that only a monopoly system could provide the incentives needed to attract private capital. This monopoly system has remained intact since then, although it has also been subject to periodic challenges from new entrants wanting to establish themselves in the heart of existing concession areas. These challenges have typically been dealt with by creating new concession areas for major new entrants. These were encouraged by attractive world prices for cotton lint in the mid-1990s and by the perception that existing concession companies were providing poor services to producers. (The counterview to this was that new entry, which caused credit recovery rates to plummet, undermined existing concession companies’ incentives to invest in their areas.) Another threat to the concession system has come from

![Figure 1. Seed cotton production 1988–2002.](image-url)
the rise of “novos operadores,” commercial farmers who have switched from producing seed cotton on their own account to supporting production by surrounding smallholders and buying the seed cotton from them—within official concession areas. In 2000 and 2001 the government convened stakeholders’ conferences to discuss a gradual liberalisation of the concession model. Pressure for this however, has now subsided and, for the foreseeable future, it appears that the Mozambique sector will continue to be based on a concession model. Meanwhile, cotton production increased rapidly in the mid-late 1990s, plummeted in 1999 due to the combined effects of problems with credit recovery and the collapse in world prices, and is now recovering again.

In contrast to Ghana, Mozambique, Uganda or Zambia, but as with smallholder production in Zimbabwe, Tanzania’s cotton production reached record levels just before liberalization. This, however, was achieved at some cost in terms of cooperative union debt. Large numbers of private firms (with only two exceptions, all locally owned) entered the sector following liberalization in 1995 and soon reduced the remaining cooperatives to a minor role. But, strong competition during seed cotton purchase had negative impacts on both seed cotton and lint quality and on the possibility of delivering inputs to producers on credit (Gibbon, 1999). The few firms that have tried to invest in extension provision have also found that most of the benefits are captured at harvest time by “free-riding” competitors. Thus, after an initial increase post-liberalization, coinciding with the high world lint prices of the mid-1990s, seed cotton production plummeted during 1997–99 due to the combined effects of problems with credit recovery and the collapse in world prices, and is now recovering again.

In Zimbabwe, the Cotton Marketing Board (CMB) convened the first annual stakeholders’ conference in 1999 to chart a way forward for the sector. This was followed by TCB-led interventions in seed and pesticide provision and quality control. Production levels have now begun to recover, despite adverse world prices.

In 1994 the Uganda government opened the cotton sector to private investment. Until then it had been based (as in Tanzania) on cooperative ginnery operations with regional monopolies (Lundbaek, 2002). Many local and international companies responded and activity within the sector rose quickly from its pre-liberalization trough. As in Tanzania, however, fierce competition in seed cotton buying has made it hard for these companies to recover investment in either input supply or extension provision. The Cotton Development Organisation (CDO), the state body established at liberalization to regulate and promote the industry, and the Uganda Ginners and Exporters Association (UGEA) have tried to create the necessary investment incentives, but the challenge remains considerable. A UGEA-led scheme for providing pesticides on credit to producers had to be discontinued, but a system of private-sector regional investment plans has been trialled in 2002–03 to encourage investment in extension support.

Liberalization of the Zambian cotton sector began with the privatization of the parastatal Lint Company of Zambia, sold in two parts to international buyers in 1995. The two resulting cotton operations (one of which was bought by Dunavant, the world’s largest cotton trader, in 1999) have dominated the sector since then, although several small companies have also entered the sector as ginners and/or buyers. As in Mozambique, production grew rapidly in the mid-1990s, but growth was interrupted by problems with credit recovery, as new entry into the sector encouraged increased side-selling by producers. Dunavant’s response to this, now being adopted by other players in the sector, is the so-called distributor system, whereby extension agents are transformed into self-employed contractors, who onlend and provide extension support to producers. The “distributors” are paid by the cotton companies on the basis of seed cotton volume delivered and the level of loan recovery achieved. While the system is still in its infancy, yields within the Zambian sector have been gradually increasing in recent years, production has surpassed its mid-1990s peak, and credit recovery has improved substantially.

In Zimbabwe, the Cotton Marketing Board (CMB) was first “commercialized” (with many of CMBs debts being assumed by the government), then privatized, with shares offered publicly in 1997. The final government stake was sold in 2001. The main factor hampering CMBs financial performance in the 1980s and early 1990s was a requirement that it satisfy the demands of the domestic spinning sector at a heavily subsidized price before exporting lint. With this restriction removed, the new private company Cottco began life as a strong and highly viable business that has continued to dominate the market, despite entry by two competitors in 1994–95 and several more since 2000. Its input credit scheme was, until its recent suspension, unrivalled within liberalised
cash crop systems in Africa in terms of coverage and repayment record. One of the two early entrants, Cargill, maintained a market share of around 20% until 2001, when it came under significant competitive pressure from a new, locally based rival. Cargill’s presence has served primarily to spur Cottco to higher levels of service delivery and performance.

Zimbabwe is widely regarded as the star performer amongst liberalized cotton sectors (Baffes, 2001). Its smallholder seed cotton yields are the highest among the six countries and it managed to increase smallholder participation in cotton production sufficiently rapidly during the 1990s to replace commercial production, as commercial producers switched into higher paying export horticulture and other activities. At least until 2001, the Zimbabwe sector retained its reputation in international markets for high-quality lint and its producer prices were the most attractive across the six sectors reviewed here. But, significant new entry since 2000–01 has threatened to undermine achievements in quality control and credit recovery, while doing little to prevent a slide in the real price received by producers. The general economic crisis in the country has undoubtedly raised companies’ costs of doing business, but not sufficiently to explain the decline in producer price. Rather, it appears that the cotton sector is seen by new entrants (and possibly also by shareholders of existing players) as a source of foreign exchange and domestic capital in an economy increasingly characterized by scarcity. Hence, short-term considerations have come to the fore and are causing tensions in a sector that has achieved success through long-term investments in productivity enhancement, service delivery, relationships with producers and quality control.

(b) Market structure in the six sectors

We distinguish three different market structures across the six countries. These are partly a function of history, but are also influenced by policy toward the sector.

(i) Concentrated, market-based

In Zambia and Zimbabwe, the concentrated market structure can be traced to the orderly privatization of the pre-liberalization cotton parastatals described above. In Zambia, the two businesses that were created out of Lint Company of Zambia continue to dominate the sector, competing only in one province (Eastern). In Zimbabwe, Cottco has preserved a 70% market share even since the arrival of new competitors in 2001–02. But, reasons for the relatively low entry in Zimbabwe (prior to 2001) and Zambia are still speculative.

For Zimbabwe, Larsen (2002) has argued that Cottco’s large and successful input credit scheme (which has received concessional finance from both the World Bank and the Government of Zimbabwe) captured the loyalty of many of the most productive producers. However, this scheme covered only 80,000 or so of the 250,000 plus producers, leaving plenty of room for other companies to operate. Larsen (2002) also notes that, during the 1990s, the Government of Zimbabwe did not encourage additional entry into the sector, ostensibly because existing ginning capacity was underutilized, but perhaps because it retained a shareholding in Cottco. An alternative explanation is that Cottco enjoyed such a competitive advantage, based on its accumulated experience of the sector and its existing infrastructure, that others found it hard to challenge. This was reinforced by the high seed cotton prices paid to producers until 2000. Since 2000 it is suggested that shorter-term motives for entry into the sector have appeared, while the lower seed cotton prices paid to producers have enabled new entrants to establish themselves in the sector.

(ii) Local monopoly

Until 2000 the Ghana cotton sector would have been classified in the “concentrated, market-based” group, albeit with a larger fringe of small companies (without ginning facilities) competing with the main three. As with Cottco in Zimbabwe, GCCL benefited from the physical assets and accumulated expertise of the pre-liberalization parastatal and from relationships with large numbers of experienced cotton farmers. Fifteen years after liberalization, GCCL maintained a 70% share of the market. As explained above, however, in the 2001 production season Ghana adopted a local monopoly system.

A distinguishing feature of the Ghana and Mozambique sectors—and, arguably, the one that gives rise to the local monopoly system—is that cotton companies are expected to provide production inputs on credit to all producers. In Mozambique this is a stipulation within the concession contracts; in Ghana it has been a condition required by the Agricultural Development Bank—which, until 2001, financed
almost all cotton production in the country—and also one to which the dominant firms are committed. There are benefits from such a requirement in terms of equity and possible “collective good” benefits to the companies if universal credit access leads to a more rapid expansion of the sector. But, a universal access policy compounds the normal adverse selection and moral hazard problems associated with smallholder seasonal credit. In both countries the view of the major players now seems to be that universal credit access and free competition in the output market are incompatible, as difficulties in information sharing between companies undermine the effectiveness of screening of potential producers and of sanctions imposed on loan defaulters.

(iii) Numerous small players

Uganda and Tanzania have long histories of large numbers of cotton ginners. Ugandan Asian businessmen led the development of the sector in both countries as early as the 1920s, during which time a large number of small-medium sized enterprises were established. After Independence the Asian businessmen were forced out of both sectors and the Ugandan sector went into precipitous decline.

In Tanzania cooperatives were first promoted to compete with the private ginning companies and then, during the 1960s, the private companies were encouraged to sell out to the cooperatives. These preserved the deconcentrated nature of the sector, unlike in Ghana, Zambia or Zimbabwe, where a single parastatal was given responsibility for developing all stages of the production and marketing chain. Indeed, cooperative investment in new gins and oil mills was deliberately dispersed around the production regions for political reasons. At the time of liberalization there was underutilized cooperative-owned ginning capacity, much of it in need of renovation. Cooperatives were initially unwilling to lease their gins to new private competitors or to toll gin for them. This, combined with the availability of cheap investment capital through donor agencies, encouraged the building of over 20 new private gins by 2002 (Gibbon, 1999). A few of the new entrants came from the same families that had sold their assets to the cooperatives in the 1960s.

In Uganda 23 ginneries formerly in cooperative hands have been rehabilitated or upgraded by new private owners, and one entirely new gin has been installed (Lundbaek, 2002). Lundbaek suggests that the high entry might be explained by any of three reasons: donor assistance for ginnery rehabilitation (as in Tanzania), unduly optimistic expectations of world price trends around the time of liberalization, and undue optimism about the possibility of raising smallholder production levels. Of these, the second does not explain why new entry has been higher in Uganda than in the two concentrated sectors (where liberalization occurred around the same time). Regarding the third, we argue that the very competitiveness of the sector has contributed to difficulties in raising seed cotton production levels.

(c) System performance

We concentrate on a narrow definition of performance, focusing on production growth and producer profitability. For production growth to be sustained over time, a system must generate sufficient benefits for both producers and companies to continue investing in cotton. It must also be able to retain its competitive position in world markets (a function, inter alia, of both efficiency and quality) and to adjust to shocks in those markets and in production conditions. From a public policy perspective, it is the combination of production level and profits realized by producers that drives the contribution of the sector to poverty reduction. Following Winter-Nelson and Temu (2002), it is possible for a smaller sector (in terms of production level) to generate higher total returns to producers (total value of output minus inputs) than a larger, less efficient one. This means more income accruing to rural labor (family and hired) and available to be spent on other goods and services within the local economy. We also note that producer profitability is a function of at least three things: the technology available (especially seed technology), the services that producers receive (input supply and credit, extension advice) and the price that they are paid for their seed cotton. Comparing producer profitability across sectors, therefore, gives a measure of the relative importance of competition and coordination at producer level.

(i) Production growth

Figure 1 showed production growth across the six sectors post-liberalization. Of the two largest producers, Zimbabwe has shown stronger post-liberalization growth than Tanzania. Tanzania is the only one of the six sec-
tors to see lower mean production in the last five years than in the five seasons prior to liberalization (Table 2). Over the past 15 years production fluctuations in Zimbabwe have been driven by weather, most notably the droughts affecting harvests in 1992, 1995 and 2002. By contrast, in the absence of additional production incentives in the form of attractive support services, fluctuations in Tanzania have been much more heavily influenced by the world price of lint.

Percentage increases in growth in the other four sectors are heavily influenced by how bad a state the sector was in prior to liberalization. The Ghana sector is currently in another crisis, while Zambia appears to be reasserting itself as the third largest sector of the six. As we note below, the performance of the Zambian sector with regard to our common challenges reinforces the impression that it is creating the conditions for continued growth.

(ii) Quality control

Maintaining high-quality standards for cotton lint requires effective quality control procedures throughout the supply chain. Post-liberalization performance in this area has been mixed. While, at least until the last season or two, the liberalized Zimbabwean cotton sector has succeeded in maintaining its international reputation as a producer of high-quality lint, International Textile Manufacturers Federation (2001) found that Tanzanian, Ugandan and Mozambican cotton lint were among the worst contaminated “national origins” in the world.

Quality control in Zimbabwe is founded on the grading of seed cotton into four grades at the time of purchase from the farmer. Approximately 35% is classified as grade A and 40% as grade B (Larsen, 2002). A more thorough classification is undertaken prior to ginning to ensure that lint consignments are of uniform quality. Maintaining the country’s reputation as a producer of high-quality lint has been of particular concern to the major companies, which worry that some new entrants may be more interested in quick foreign exchange earnings than the quality of lint they sell. In spring 2000, under the auspices of the National Cotton Council (NCC), all cotton companies agreed to follow common grading procedures, based on the system developed by CMB (Larsen, 2002). This may prove however, unenforceable as more players enter the sector. Interviews with international lint traders in Liverpool (in January 2003) indicate that there have been recent signs of deterioration in lint quality from Zimbabwe.

In Zambia—the other concentrated, market-based sector—Dunavant has in recent seasons controlled polypropylene contamination by refusing to buy seed cotton that did not arrive at their buying posts in plastic bags and by introducing cleaning stations at their ginneries to remove polypropylene fibers before ginning. Dunavant reports that its lint is no longer subject to the international price discount that it once was. We note that, while any company (with the necessary funds!) could have pioneered the idea of cleaning stations, refusing to buy contaminated lint would have been a much more difficult decision for a single company in a sector with many buyers competing for seed cotton supplies. One company that has pursued a similar policy in Tanzania has found that competitors accept seed cotton that it turns away.

Gibbon (1999) notes a number of reasons for a decline in the quality of Tanzanian lint since liberalization. These included the mixing of previously zoned seed varieties, the collapse of grading procedures at the time of primary purchase and a decline in insecticide use. Behind these lay a lack of resources for monitoring and enforcement on the part of the Cotton Board and the fact that numerous buyers needed to acquire seed cotton to fulfill forward supply contracts and pay outstanding loans. Early indications are that the contracting of two private companies to enforce quality control at ginnery level will, at best, only partially solve the problem (Baffes, 2002). A similar pattern, including mixing of seed varieties and the disappearance of grading at first purchase, has prevailed in Uganda. Officially no cotton graded BR has been purchased since 1997–98 (Lundbaek, 2002).

The organization of the Mozambican cotton sector should provide the necessary conditions for strong quality control. In practice however, quality control remains a major problem at all levels and little progress has been made in addressing it. This is partly due to breaches in the monopoly system and partly because the incentives provided by the monopoly system are not as clear as they could be. Control of seed quality is a major problem. There is little varietal zoning, and existing varieties have badly degenerated. Nearly all seed is distributed untreated. At the primary buying stage two grades are formally recognized, based on
trash content, and prices are announced for each. In practice, however, buyers do not always distinguish between the qualities, especially in recent years when the competition for seed cotton increased. With some exceptions, ginning equipment is dated and contributes to poor lint quality.

The Ghana cotton sector has remained more dependent on sales to local textile firms than the other sectors covered by this paper. One result is that incentives for raising product quality have been muted, although International Textile Manufacturers Federation (2001) suggests that contamination of exported lint has been kept low.

(iii) Input credit

Each sector’s response post-liberalization to the challenge of providing input credit to producers has been a determinant of, and has been influenced by, sectoral structure. As with quality control, success has varied from country to country.

As already noted, early players in the liberalized Ghana sector agreed to provide a common input package to all producers. Until 1995 no explicit charge was made for this package, except for ploughing cost. Instead, the per kilo price paid for seed cotton was adjusted downward to recoup the costs of inputs supplied, based on a notional average yield of 600 kg seed cotton per half-hectare unit. The main strength of this so-called free input system was that, when combined with common pricing by all cotton companies for inputs and seed cotton, it removed almost all incentive for a producer to side-sell. In fact, side-selling was relatively rare. The two main disadvantages were that more productive farmers subsidized less productive ones and, more seriously, that common price setting reduced competition from price formation. As a result, the price of seed cotton fell steadily after liberalization in relation to input costs and to competing crops such as maize and groundnuts. Producer commitment to cotton, and hence yields, also fell (Poulton, 1998).

In response, and on the basis of external advice, the sector moved during the mid-1990s to a more conventional system in which an explicit deduction was made for the inputs received by each producer. Effective prices (after adjusting for input payments) were not raised, however, and side-selling escalated dramatically in the second half of the decade, as producers now had a strong incentive to sell to a company other than the one that provided them with inputs. This experience led to pressure, by 2000, for a local monopoly system. Discussions with company representatives indicate that repayment rates of 85–90% were achieved by some companies in 2002, despite the generally problematic start to the local monopoly system.

Zimbabwe is the only other country of the six where many producers use inorganic fertilizer on their seed cotton crop. This, together with pesticide use, has been promoted particularly through Cottco’s widely admired credit scheme. Established in 1992 (prior to liberalization), the scheme achieved exceptional repayment rates—a claimed 95–98% in non-drought years—based on strong joint liability borrower groups, supported by extension and training support from Cottco staff, and backed up by the threat of asset seizure as a last resort (Gordon & Goodland, 2000). Until recently an unanswered question was the extent to which Cottco’s success was also due to the small number of buyers competing for seed cotton. But, as competition for seed cotton has intensified since 2000, side-selling has also become much more widespread and Cottco have recently announced that they will not be offering credit to producers in the 2003–04 season (http://allafrica.com/stories/200308280259.html).

Similarly, in Zambia side-selling has dogged attempts to provide pesticides to producers on credit since the entry into the market of several smaller buyers in 1997. Dunavant’s response to this—their “distributor” system—was described above. During the 2001–02 marketing season, Dunavant had nearly 1,400 distributors, each working with an average of 40 farmers. Since the start of the scheme in 1999, the company’s credit repayment rate has risen from around 65% to 85%—a considerable improvement, but not yet sufficient for it to conclude that it has solved its input credit problem.

In Mozambique exemplary credit recovery rates (for pesticide loans) are claimed where an effective local monopoly is preserved. The rapid growth of farmer organizations in recent years may also have contributed to this strong performance, although these have been formed for a number of different motives and so function with varying degrees of effectiveness. Meanwhile, during the two periods of intense “pirate” buying within concession areas, credit repayment rates in Nampula have fallen as low as 60%.
Perhaps the biggest challenges for input credit are encountered in the two sectors characterized by numerous small buyers. In Uganda and Tanzania, early post-liberalization experiments by individual ginners with input credit resulted in large losses (Gibbon, 1999; Gordon & Goodland, 2000). After this the two sectors attempted contrasting solutions to the problem.

Gordon and Goodland (2000) describe an attempt by the Uganda Ginners and Exporters Association (UGEA, to which all the country’s ginners must belong) to deliver pesticides on credit to the majority of the country’s 300,000 plus producers. In 1998 the newly-formed UGEA took a loan from the Bank of Uganda, which it used to procure inputs, which were then distributed to farmers through the Cotton Development Organisation (CDO). At harvest time, ginners were free to compete for seed cotton, and paid a per unit levy to UGEA based on the volume of seed cotton that they ginned. This levy was set at a level designed to ensure repayment of the entire original loan from Bank of Uganda. Unfortunately, bad weather dogged the first season’s attempt, total production was around half what was anticipated and only part of the loan could be repaid. There were also difficulties in controlling who received inputs and what they did with them. After a second attempt the following season, (with good weather) the approach was then abandoned.

In Tanzania since 1999, levies paid on ginned seed cotton have been used by the Cotton Development Fund (the board of which has a mix of Cotton Board, Ministry and private sector representation) to procure insecticides for subsidised distribution to farmers through district and village governments. Whilst this approach could potentially increase the volume of insecticide available at farm level, it also discourages private sector supply and depresses the seed cotton price. Moreover, there have been difficulties in implementation. A huge consignment of insecticides ordered by CDF for the 2002–03 season was not of the type that producers are familiar with. Only 15% of these insecticides were taken up by farmers and there are doubts as to whether the remainder of the stock will be moved before it goes out of code. The episode raises important questions about decision-making processes within the CDF.

More generally, the Ugandan and Tanzanian experiences highlight the issues of governance and accountability where either state organizations or private sector representatives take action on behalf of an entire sector. One of the major objectives of liberalization was to reduce the role of state agents in taking action of this nature. But, where liberalization comes closest to the ideal of multiple small players, this sort of action is still needed and the challenges remain.

(iv) Research and extension

There are currently no sector-wide success stories in supporting cotton research within the six countries. Small advances have occurred because large companies (within concentrated sectors) have taken individual initiatives, confident of capturing a reasonable share of resulting benefits. But, much remains to be done in all cases. A measure of the lack of recent progress is that, until a CIRAD-funded research project released a new variety in 2001, the last variety released in Mozambique was REMU 40 in 1981. Similarly, TCB is now coordinating an effort to multiply a new variety of seed, UK91, to replace the varieties currently in use, which were released in 1977 and 1982. The varieties in use in Zambia were released in 1988 and 1992–93. Meanwhile, there is no varietal development in Ghana, where individual companies must import and multiply seeds from neighboring countries (e.g., Ivory Coast and Burkina Faso). As the national research systems in these countries are reluctant to supply the latest varieties, Ghana lags several years behind its neighbors in seed technology. Perhaps the least discouraging story is that of Zimbabwe, where Quton, a seed multiplication and distribution company wholly owned by Cottco, has a five-year contract with the state-owned Cotton Research Institute (CRI). The contract gives Quton exclusive rights to use the varieties developed by CRI, in return for which it undertakes to provide seed to the whole sector and pays CRI a royalty based on the volume of seed that it sells. This generates more funding for CRI than the state can afford to give it. Nevertheless, some private sector representatives suggest that the Ministry of Agriculture is unable to adequately fund cotton research and unwilling to hand over responsibility for research to other cotton sector stakeholders. At the same time, Quton is developing its own research program, which could soon become larger than that of CRI.

Extension activity is perhaps more conducive to individual company effort than research, as the economies of scale are lower. But, company incentives to invest in extension are
undermined by side-selling. In all the concentrated sectors (Ghana, Mozambique, Zambia, Zimbabwe), some or all companies employ their own staff (or contract distributors, in the Zambian case), with a mandate to provide extension advice and supervise the distribution and recovery of input credit. In Ghana and Mozambique the ratio of extension staff to farmers ranges from 1:300 to 1:500 depending on the company, meaning that some farmers get less attention than others. In Zimbabwe Cottco staff work closely with AREX (national extension agency) staff in some districts. Meanwhile, in Tanzania a few companies have experimented with extension activities, but have found that competitors reap many of the benefits through increased seed cotton purchase. It remains to be seen whether Uganda’s regional investment plans will prove any more successful than the collective attempt to provide seasonal credit in 1998–89.

(v) Seed cotton pricing

Table 3 shows the range of seed cotton prices (in US$ terms) paid to producers in the six countries over the past five years. Not surprisingly, given trends in world prices, the highest price was paid in 1998 in four of the countries (Mozambique, Tanzania, Uganda, Zambia). Zimbabwe maintained high producer prices through 2000, but has since let its price slump in real terms. In Ghana producer prices have risen in the past two years, as the Ministry of Agriculture and farmers’ representatives have been allowed to join the pricing discussions. In comparing across countries, it should be noted that these prices are the product not just of competitive dynamics within the six sectors, but also other factors such as relative transport costs (highest in Uganda and Mozambique?) and taxes (highest in Tanzania?).

Nevertheless, it seems clear that seed cotton prices have been least attractive in the two sectors now under local monopoly systems. This flows directly from the fact that there have been no competitive pressures on seed cotton pricing in either country. In Ghana, companies meet each year to set prices for the season, while in Mozambique the Ministry of Agriculture, cotton company representatives and the Mozambican Cotton Institute (IAM) negotiate a pan-seasonal minimum price. Actual prices may rise above this, but seldom do. If zoning concessions were subject to periodic, competitive renewal, there would be no reason for prices to be fixed. Rather, company pricing would be one indicator on which the company’s performance during its concession period could be judged. Concessions are however, currently open-ended in both countries, removing this potential incentive to performance. Moreover, in Ghana the zoning system was sold to sceptical farmers on the basis that all would continue to receive equal treatment under zoning.

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<td>Zimbabwe</td>
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|                      |      |      |      |      |      |
| Returns to land (US$/ha) |
| Tanzania             | 56   | 95   | 98   | 67   | 94   | 82   |
| Zimbabwe             | 157  | 272  | 261  | 113  | 40   | 166  |
| Mozambique           | 93   | 68   | 31   | 29   | 32   | 51   |
| Zambia               | 105  | 53   | 73   | 98   | 75   | 81   |

|                      |      |      |      |      |      |
| Returns to labor (US$/family labor day) |
| Tanzania             | 0.56 | 0.95 | 0.98 | 0.67 | 0.94 | 0.82 |
| Zimbabwe             | 1.31 | 2.27 | 2.17 | 0.94 | 0.40 | 1.39 |
| Mozambique           | 0.93 | 0.68 | 0.31 | 0.29 | 0.32 | 0.51 |
| Zambia               | 1.05 | 0.53 | 0.73 | 0.98 | 0.75 | 0.81 |
i.e., prices would continue to be fixed across all areas! While farmer involvement in price negotiations could act as a substitute for price competition, initiatives to establish farmer associations are still in their early stages in both countries.

In the sectors with “multiple small players,” price competition is intense. In Tanzania, the Cotton Board sets a floor price for seed cotton, which generally acts as the opening price at the start of the official buying season. Prices commonly rise 50% above this level within a month or two. There is debate within the sector as to whether the floor price protects the most cash-strapped farmers, who are desperate to sell as soon as buying starts, or whether it actually depresses the price at the start of the season.

According to Table 3, the “concentrated, market-based” sectors have performed well on price. This is perhaps surprising, as there has been little direct price competition in either sector (the 2002 buying season in Zimbabwe being a partial exception). Although the main players do compete strongly on other aspects of service delivery (Larsen, 2002), the practice in both sectors has been that the largest firm announces its price and competitors announce prices fractionally above this. There are several possible reasons for the relatively good price performance. Firstly, despite high transport costs in Zimbabwe (Pedersen, 2002), it is possible that the costs of operation in these countries have been amongst the lowest of the six. Second, both sectors are dominated by dynamic companies with ambitions of expansion, which realise that you have to reward producers if they are to supply you in increasing quantities. Third, as in all six sectors, ginning overcapacity encourages companies to keep their buying prices up, to maximise supplies. In Zambia, total ginning capacity is estimated at 150,000 tons; in Zimbabwe 400,000 tons.

All this said, the experience of the past two seasons in Zimbabwe, where seed cotton prices fell to US$0.16 per kg in 2001 and US$0.11 per kg in 2002, shows that there can be no reason for complacency. We have already suggested that this fall has occurred under exceptional conditions. Nevertheless, it could not have happened in a sector with multiple small players. Moreover, it is possible that comparatively high producer prices for seed cotton in Zimbabwe in the 1990s were intended, at least in part, to retain some degree of large-scale commercial involvement in the sector, as large-scale producers were relied upon to supply certified seed for the whole sector. As large-scale producers have been forced to exit the sector anyway, the price has fallen. Future trends in the Zimbabwean seed cotton price thus deserve careful attention.

(vi) Returns to producers

Best estimates of mean yields across the six sectors were presented in Table 2. They suggest a positive correlation between market concentration (as given by the CR3 ratio) and yield. This is consistent with the argument in this paper that, in the absence of a strong state, it is very difficult for sectors comprising numerous, small players to deliver the services that would assist smallholders to raise yields and productivity.

In Table 3 we present our estimates of returns to producers for the four countries for which we have sufficient data. Returns to land and labor are presented, as reliable estimates of family labour input into cotton systems are rarely available. Following Haggblade and Tembo (2003) for Zambia, we have estimated total labor input (no hired labor is costed) at 100 mandays per hectare for Mozambique, Tanzania and Zambia, and 120 mandays per hectare for Zimbabwe (excluding the drought year 2001–02). Not surprisingly, returns in Mozambique are much lower than in the other three countries, reflecting both low yields and low price. Overall, returns in Zimbabwe are comfortably the highest, even though the combination of depressed prices and drought in 2002 dramatically reduced returns. The 2001 figures show that, even with weak prices, the Zimbabwe sector can generate higher returns to producers than those obtained in the other countries, because of the higher yields achieved.

Perhaps the most interesting comparison is between Tanzania and Zambia, which have offered similar prices to their producers over time. Whilst Zambian producers use more inputs and achieve higher yields, the difference in yields has not so far been sufficient to increase returns above Tanzanian levels. But, as already noted, there has been a gradual increase in yields in Zambia in recent years, which offers promise for the future.

Finally, if we multiply the value added per kilogramme of seed cotton produced by the total production in each country, we get a crude estimate of the relative contribution to rural livelihoods (in terms of direct income to land and labour that can then be spent on other
rural goods and services) across the six countries. Again using mean figures for 1998–2002, we find that the contribution in Zimbabwe (US$48.6M p.a.) is roughly twice that in Tanzania (US$26.4M p.a.) and four to five times that in Zambia and Mozambique.

(d) Competition, coordination and the role of the state in the different sectors

In the previous sections, we have argued that, of the three distinct sectoral types observed within liberalized African cotton systems, the “concentrated, market-based” sectors have been the most successful in meeting common coordination challenges. Moreover, they have done this while still maintaining reasonable prices to producers. While local monopoly systems do offer a viable solution to several coordination problems, in Ghana and Mozambique the benefits are undermined by the absence of any competitive dynamic within these systems. Finally, the sectors with multiple small players have been fiercely competitive, but at the expense of effective coordination. We therefore conclude by suggesting that, contrary to much discourse on the subject, the appropriate role for the state in supporting and regulating private market activity depends on the type of sector.

In the “concentrated, market-based” sectors, the main impetus for coordination tends to come from the dominant private companies. Even when players do not work together, however, the majority market share of one firm can give it sufficient security to invest in, say, input credit or improved quality control. Even if the benefits accrue to all players within the sector, the dominant firm could capture the major share of these. Where coordination between players does occur, the state may play a supporting role, as with the formation of the NCC in Zimbabwe, or an obstructive role, as (in the eyes of some) with its refusal to transfer research to private hands in the same country. State agents may also be required to oversee the enforcement of agreements reached between stakeholders (if capacity exists) and the state may need to arbitrate disputes between private parties (every firm in Zimbabwe pays a small levy to the NCC to fund a dispute resolution panel). But, a large part of the burden for enforcing agreements rests with the firms themselves, both by their commitment and by the pressure that they can bring to bear on other (usually smaller) firms to comply. The most common tactic employed by larger firms in this regard is the threat to exclude them from ginning facilities.

Public policy makers have had little cause to be concerned about pricing or other exercise of oligopoly power in Zambia nor, until recently, in Zimbabwe. On the other hand, it is not clear that the mechanisms or the capacity exist for an effective competition policy in either sector.

In the “concentrated, local monopoly” sectors, the state has a critical role to play in the allocation of zones or concessions. This needs to be done impartially, as it appears has generally been the case in both Mozambique and Ghana. To retain contestability, however, the state needs to establish procedures for evaluating the performance of concessionaires and periodically re-tendering concessions. No such procedures yet exist in either country. In Mozambique, where the concession system is much older, this omission contributed to the widespread dissatisfaction with the system that manifested itself particularly in 1998–2000. The division of cotton producing areas in Mozambique into large concessions, focused on a particular, large and privately-owned ginnery, does raise problems for any re-tendering process. This is not the case in Ghana where zones are much smaller and may be geographically separated from ginneries, with several zones (possibly operated by different companies) feeding into a particular ginnery (either own production or contract ginned). Nevertheless, the institutional capacity necessary to operate an objective and transparent re-tendering process should not be under-estimated. In “concentrated, local monopoly” sectors, therefore, an element of tradeoff between competition and coordination is likely for some time to come.

Finally, in the sectors with “multiple small players,” the problem lies with coordination. In the absence of large private players, the onus is on the state to take the lead in public goods provision or on the multiple small players to organize themselves to tackle common problems. Tanzania illustrates the former approach and also illustrates its difficulties in a context of low state capacity. URT (1999) estimated that cotton companies in Tanzania paid a total of over TShs 40 in levies per kilogram of seed cotton bought, at a time when the seed cotton price was TShs 180 per kg. The cost effectiveness of the various TCB-led interventions is thus questioned by ginners, but they also admit that they are too numerous and insufficiently trusting of each other to achieve private coor-
dination. It should also be noted that, even where state intervention is “efficient,” it is likely to be more expensive than informal private coordination in a concentrated system. Therefore, this type of sector is always likely to shoulder a higher burden of taxes or levies than the concentrated sectors. Meanwhile, the Ugandan input credit experiment illustrates the formal private association approach. Despite effective private coordination, the UGEA remained dependent on the CDO for input delivery and proved unable to effectively control input distribution.

All sector types, therefore, face their own particular challenges in striking the competition–coordination balance. So far, the “concentrated, market-based” sectors have the slight performance edge.

NOTES

1. Despite undoubted difficulties, the Francophone sectors continue to outperform all the liberalized sectors discussed here (with the possible exception of Zimbabwe) in terms of production levels, yields and quality. It is not the purpose of this paper however, to draw lessons from the liberalization of Anglophone and Lusophone sectors for the future of the Francophone sectors. The Francophone sectors have benefited from decades of investment in the capacity of public sector agencies to deliver services to cotton producers and, as such, have development pathways available to them that are unrealistic for the liberalized sectors discussed here.

2. As well as finding support in the academic literature, the list of key challenges set out here has been broadly endorsed by meetings with sector stakeholders in Zimbabwe, Tanzania and Ghana. These meetings also confirmed the view advanced here that striking a balance between competition and coordination is the overarching policy concern for these sectors.

3. Side-selling is the sale of seed cotton to a buyer other than the company that provided the producer with inputs on credit during the production season.

4. In a concentrated sector with limited new entry, such goods provided collectively by private players may more accurately be described as club goods than public goods. But, we use the term public goods throughout, as our emphasis is on the common challenge facing all sectors as to how to provide such goods.

5. While Table 1 suggests that formal and relational coordination are polar alternatives, in reality they are likely to be ends of a continuum. For example, decision-making within an industry association may combine both plenary discussion and negotiation by dominant players behind closed doors, whilst relational coordination may be facilitated by what Hall and Soskice (2001) term formal “deliberative mechanisms.”

6. Perhaps because of its small size, but perhaps also because of its commitment to the common input and pricing package, Ghana’s cotton sector has remained the exclusive preserve of locally based firms.

7. These were joint ventures between the Mozambican government and international (either Portuguese or multinational) firms. Strictly speaking, it is more accurate to talk of the privatization of the Mozambique cotton sector in 1989 than of its liberalization.

8. Zimbabwe is the only country of the six to have had many commercial seed cotton producers in recent years. But, their contribution to national seed cotton output fell from 80% at Independence in 1980 to 15–20% in 1999–2000, when around 200 commercial producers remained involved in cotton. As a result of the subsequent land redistribution programme, this number fell to 55 in 2001–02 and 12 in 2002–03 (M. Bragge, personal communication).

9. In Zambia, an unknown, but substantial, number of independent traders operated during 1997–1999 (or later). These contributed to the credit repayment problems experienced by the sector during this period.

10. The 2002–03 season in Zimbabwe has been little better than 2001–02. It has also been poor in Tanzania, where the 2003 harvest is expected to be smaller than 2001–02.

11. There is, unfortunately, no reliable single indicator for lint quality. As Gibbon (1999) notes, price premia (over the benchmark Cotlook “A” Index) are obtained for a number of reasons, including staple length, color and cleanliness, type of gin used and timing of sale. Tanzania and Uganda benefit from having a large proportion of roller gins (otherwise considered less efficient than saw gins). By contrast, Zimbabwean lint has traditionally been valued for being well-graded, uniform and clean.
12. Cottco takes advance orders from regular clients with specific (but varying) quality requirements. It has also invested heavily in HVI technology to ensure that it meets these particular requirements.

13. Although Baffes (2002) questions the extent of the quality decline in Tanzania post-liberalization, the fact of a quality decline is accepted by the Tanzanian Cotton Board and by both ginners and international traders interviewed by the present authors.

14. In Zimbabwe Cottco also pays an end-of-year bonus to all their producers after selling their lint. Under the so-called pool price system, also now operated by Cargill, mid-season price rises (necessitated in 2002 by spiralling inflation) are also paid to all producers, irrespective of when they sold.

15. The Pearson correlation coefficient, calculated using CR3s for Uganda and Mozambique of 0.45 and 0.55 respectively, is 0.831, significant at the 0.05 level (2-tailed). If rankings are used instead of absolute values, the Pearson correlation coefficient is 0.771, significant at the 0.1 level (2-tailed). But, we accept that a correlation based on just six data points is only suggestive.

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