Fibre of the World: 
The Political Economy of Trade, 
Development and Industry in Cotton

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An Honours essay submitted to 
Carleton University in fulfillment 
of the requirements for the course 
ECON 4908, as credit toward 
the degree of Bachelor of Arts with 
Honours in Economics.

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April 5, 2007
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In the modern era, economic growth has proceeded at unprecedented rates. Global economic output increases at an annual rate of 1.4 per cent, meaning the world doubles its wealth every fifty years.\(^1\) Much of this progress comes from technological advancements, an obvious trend in the information age. Yet a large number of people have been left behind as enormous economic, social and technological change occurs elsewhere. According the UN Development Programme, the developing world, in aggregate, accounts for about 43 per cent of global income, yet is home to almost 80 per cent of the world’s population.\(^2\) This discrepancy is largely explained by the developing world’s greater dependence on agriculture as opposed to the higher value-added sectors of manufacturing and services, as seen in the developed world. In 2003 agriculture accounted for 10.8 per cent of the developing world’s income and a mere 1.7 per cent of the income in the developed world. Sub-Saharan Africa sits at the bottom of virtually all development indices, and obtains 17.8 of its income from agricultural output.\(^3\) Clearly, there is strong relationship between the wealth and the technological position of countries. In low-income countries this relationship is manifest in the low-skilled, labour-intensi-stive production of agricultural goods.

Regardless of how advanced our technology becomes we will ultimately be dependent on raw material inputs, from food stuffs to iron ore. The prices of virtually all primary inputs have declined since the early 20\(^{th}\) century, and drastically so during the

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\(^2\) UNDP, \textit{Human Development Report}, p. 300, 334. The ‘developing world’ does not include East Europe nor CIS countries.
1980s and 1990s. This trend has begun to reverse in recent years as the price of many commodities has slowly but steadily risen. However, the reversal has just begun and the long-term viability of this trend is not yet known. During the decades of the declining real price of commodities, many developing economies, especially in sub-Saharan Africa, continued to rely on the production and exportation of raw commodities for their economic growth. Although not optimal, many countries had little alternative but to produce for the primary product market.

As early as 1980 the reliance on weakening markets prompted the UN’s Brandt commission to recommend that “earnings from commodities must be strengthened so that they can contribute more adequately to the development of third world countries, most of which are still heavily dependant on primary commodity exports.”4 Since the Brandt commission’s recommendations, incomes from agriculture and other raw materials have done just the opposite. As a result, and notwithstanding recent price improvements, the past two decades have seen worsening fortunes of the people involved in the production of primary goods. Is this the inevitable outcome of technological change in market economies? Or are there non-economic forces at play affecting the livelihood of millions for the benefit of the privileged few? The findings presented in this paper indicate that pure economic factors have not been favourable to primary product producers; however, the role of powerful states and markets has inexcusably and unjustifiably worsened the situation of the world’s poor.

1.1 Overview

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This study will assess what has gone wrong with the economics of trade and production, and explores possibilities for redirection toward a world where no one is left behind. Cotton is used as a case study to outline relationships between production, trade, development, and politics. Cotton is a useful proxy in that it represents a common agricultural product and an important primary commodity in the clothing and apparel market. Cotton is produced in scores of countries ranging from the world’s poorest, Mali, to the world’s second richest, the United States of America (USA). Although holding sentimental value in many countries, it is only in the middle- and low-income countries that cotton continues to have significant economic value. The contrast is stark, for example: “In Benin, cotton sales account for half of all household income … By comparison, the entire US agriculture industry accounts for only 2 per cent of US GDP and cotton accounts for 0.0004 per cent of US GDP.”\(^5\) Even more startling is that dependence on cotton production has remained fairly constant over the past 25 years even as the revenue per hectare has declined (see annex 6 and figure 3 in chapter 3). Therefore, cotton will also serve to explore why reliance on the declining agricultural sector has not been reversed.

The study is organized as follows: chapter 2 provides an overview of the cotton market. Emphasis is placed on the trends in the price of cotton, specifically its declining real value and its exceptional year-on-year fluctuation. Such price trends help explain why there have been shifts in cotton output from the developed countries in the early and mid 20\(^{th}\) century, to a much greater share of output captured by Africa and China in more recent times. This reasoning is followed by the more orthodox economic explanations of

the cost of production. Finally, chapter 2 maps the current levels of output, trade, and consumption by country and region.

The data presented in chapter 2 demonstrates inconsistencies between the actual operations of the cotton market and the predictions of basic economic theory. Following this, chapter 3 and 4 provide, respectively, some of the explanations for, and solutions to, the contradictions in the observed data. The greatest emphasis is placed on the ubiquitous subsidies in cotton production and trade in the major economies. The role of market concentration and the price setting mechanism are also discussed in relation to market distortion. The broad conclusion from these chapters is that improvement can be made under the rubric of market distortions, but little benefit will be produced without significant changes in the agricultural policies of the Western world.

From this conclusion, chapter 5 explores alternatives to cotton-led development. The chapter uses a new framework of trade, surplus, and development known as the Global Value Chain (GVC) approach, which stresses the central importance of industrialization to economic growth. For cotton producers in Africa and elsewhere the supply chain connection between cotton and textiles seems like an ideal setting within which these economies can industrialize. This link, however, is not as strong as it appears, the reasons for this misconception shall also be explored in chapter 5. To strengthen the GVC analysis, Michael Porter’s model of competitive advantage is used in combination with evidence from East Asia’s export-led development to find general policy recommendations that could help guide African producers toward long-term economic growth.
1.2 The Production of Cotton

Cotton requires a long growing season in semi-tropical climates. Ideally there should be much precipitation during the growing phase and relatively little during the harvest. Although the time for planting and harvesting varies depending on a region’s particular climate cycle, the international standard cotton year runs from August to July. Throughout this paper cotton years will be written in the form: 1998/99, this refers to the twelve months, August to July, unless otherwise stated.

When cotton is picked, by hand or machine, it is in the raw cottonseed form. The process of separating the seed from the fibre is known as ginning. This requires large machinery for efficient production. Once ginned, the seeds, oil, and fibre are separated. The fibre produced, known as cotton lint, accounts for only 40 per cent of the original weight of the cottonseed input. However, cotton lint accounts for over 95 per cent of the total value created from each of the cottonseed by-products.\(^6\) Throughout this paper the term cotton will refer only to ‘cotton lint’. And, because it accounts for the vast majority of cotton revenue the other cottonseed by-products will not be discussed.

1.3 A Geographic Note

The paper will focus on cotton production and the implications for development in sub-Saharan Africa (SSA). Cotton is produced in significant amounts in the United States, China, Uzbekistan, Brazil, North Africa and the Middle East, yet none of these economies rely on the export of cotton to the extent found in SSA.\(^7\) Although accounting

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\(^7\) Uzbekistan does exhibit a high degree of dependence on cotton exports, but is left largely outside the discussions here, because of the limited economic data it reports. Furthermore, the analysis here focuses on the manipulations of market, whereas the Uzbek government actively controls many market functions thus introducing an entirely new set of issues with which to contend.
for about 13 per cent of total cotton production and 19 per cent of exports, this region has the most to gain (and lose) from the trends of the cotton market. It is estimated that “more than 10 million people depend on cotton for their livelihoods in West and Central Africa.”\(^8\) Moreover, foreign exchange earnings from the export of cotton are an integral part of these nations’ ability to finance development projects, meaning that the knock-on effects of the cotton sector’s weakness or vitality impacts millions more.

\(^8\) Oxfam, *Finding the Moral Fiber*, p. 5.
Chapter 2
Principles of Change in the Cotton Market

2.1 The Price of Cotton

The cotton market, as with virtually all primary commodity markets, has been subject to significant year-on-year price fluctuations as well as a declining real price since the mid 20th century. Beginning in 1966, the Cotlook A Index has been the standard measure of the international price of cotton. It is determined by Cotlook Limited, which calculates the index by taking the average of the five cheapest cost, insurance, freight (c.i.f.) price quotations out of a (current) list of nineteen.¹ Although the A Index represents the second highest (and most common) grade of cotton, namely Middling 1 – 3/32”, and the Cotlook B Index represents lower grades, theses two indices are near identical in value and variability.² In general, the “evidence strongly suggests that cotton with staple lengths ranging from short to long form a highly integrated market.”³ Therefore, one need not be concerned with the different price indices or the quality of cotton being traded when analyzing the international trends of cotton prices.

The fluctuations of the international price of cotton have been extraordinary, reaching a nominal peak of 93.68 ¢/lb. in 1980 before crashing to a penultimate low of 47.95 ¢/lb. just six years later. It is often suggested that the use of futures contracts can help commodity producers hedge their production investments against sudden price falls. However, as can be seen in Figure 1, price fluctuations have not subsided over the past

² “Fiber fineness and fiber tensile strength are positively associated with staple length, and longer staples generally result in finer, stronger yarns … Staple lengths are graded by thirty-seconds of an inch and categorized as short (<34/32), medium (34-36), long (36-44) and extra-long (>44).” Extra-long is not included in the A-index, it refers to specialty fibres such as Egyptian Cotton. See Eric Monke and Todd Petzel, “Market Integration: An Application to International Trade in Cotton,” American Journal of Agricultural Economics, November 1984, p. 483.
two decades, even as the expansion of information technology has made futures contracts more readily available to people around the world.

Of course, in the long term nominal fluctuations will not matter, it is the value and stability of the real price of cotton that determines the productive activities of people engaged in the market. The speed of adjustment of nominal values to real economic factors has been one of the major points of debate in economics since John Maynard Keynes argued that prices face real rigidities in the short- and medium-terms. What is of relevance to the discussion here is the fact that cotton farmers in developing countries may not have a fine sense of the distinction between nominal and real prices and thus will almost assuredly set their forthcoming production schedule in line with the previous
season’s price. Even the most astute observers cannot predict the degree of fluctuations that happen year on year and sometimes are unable to determine even the direction of price change.

During the 1990s the International Cotton Advisory Committee’s (ICAC) forecasts of the price of cotton were off by as much as 40 per cent. In general, the price predictions of cotton have been shown to be “consistently less accurate than coffee and cocoa,” two other important export commodities in the developing world. If well-established and adequately financed organizations cannot, with any useful degree of accuracy, predict the fluctuation of the price of cotton then how are farmers in West Africa, for example, to respond to forecasts and futures market signals?

Even more striking are the effects of other economic policies on the production choices of farmers. On 1 January 1994 the CFA franc was devalued by 50 per cent in its pegging to the French franc, this coincided with a high international price (real and nominal) in terms of US dollars. Not surprisingly the West African production boom in the 1994/95 season was far more pronounced than in any other cotton-producing region. Furthermore, the nominal and real price jump added to the “euphoria which led to an investment boom.” In Benin, for example, the fall in cotton’s real price in the latter half of the 1990s meant the earlier overinvestment created an under-utilized ginning

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7 Cotton was not alone in its variability, copper too showed similar inconsistencies with the World Bank’s predictive models. See Angus S. Deaton, and Ronald I. Miller, “International Commodity Prices, Macroeconomic Performance, and Politics in Sub-Saharan Africa”, Princeton Studies in International Finance, no. 79, December 1995, p. 21.
8 SIDA, Bourdet, A Tale of Three Countries, p. 12.
9 ibid.
capacity. In other words, there was a sub-optimal use of the very limited foreign direct investment in West Africa’s cotton sector. The lack of accurate information on prices and production available to producers throughout sub-Saharan Africa (SSA) and other developing economies can lead to lamentable investment decisions. For West Africa, the third largest cotton exporter (Annex 5), the overinvestment and oversupply likely worsened the falling real price of cotton that continued into the next decade.

Not only are the determinants of real-price changes difficult to discern, much depends on how one defines real prices. As with all ‘real’ measures of nominal values there are different methods of calculation. If one uses the United Nations Commission on Trade and Development (UNCTAD) calculation of price indices then it seems that the price of cotton has not changed significantly over the past three decades. UNCTAD corrects for price fluctuations through a weighted average of agricultural commodities based on the proportional value of exports from developing countries. With this measure the price of cotton in 2002 was only 40 per cent less than its mid-1970s peak. On the other hand, if one uses the standard calculation of real prices (i.e. adjusting against the rate of inflation) as Yves Bourdet of the Swedish International Development Agency (SIDA) does in her study of cotton sector reforms in West Africa, then a very different picture is painted: “In 2002, the real price of cotton was barely a fourth of its early 1970’s level.”

Since the concern of this study is to apply the findings toward greater economic development in sub-Saharan Africa it seems appropriate to use a calculation of prices

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13 Bourdet uses the IMF’s CPI for industrial countries as the measure of inflation. Bourdet, A Tale of Three Countries, p. 11.
which accounts for the cost of imports that still come largely from the industrialized world, rather than an index of agricultural commodities (see figure 2).

![Figure 2: Deflated Cotlook A Index (Annual Average 1950/51 – 2000/01)](chart.png)


The drastic decline in the real price of cotton is the result of several factors, which can be grouped into two general categories. On the one hand, there are the fundamental technological and economic factors which have significantly changed over the past fifty years. The most important changes include the slow expansion of consumption relative to production as synthetic fibres have become price competitive with cotton; and higher yields stemming from technological improvements in agriculture in general. On the other hand, the less defensible negative price impacts are the direct result of subsidies granted to cotton producers in the United States, China and the European Union. These subsidies push down the real price of cotton even further than it would be otherwise. Moreover, the subsidies impinge on the production and investment decisions of farmers.

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and businesses by increasing the year-on-year volatility.\textsuperscript{(16)} This situation, and possible solutions to it, will be discussed in the following chapters. For now it is important to note that cotton, which was once seen as a major contributor to development throughout Africa has, over the past four decades, lost, and continues to lose, its real value. The sad reality is that most African cotton farmers have few income alternatives to cotton production as compared to farmers in the United States, Greece or Spain who have a vibrant economy with which they could otherwise engage.

2.2 Changes in the Global Production of Cotton (1945 – Present)

The current global distribution of cotton production is closely related to the rapid industrialization occurring through much of the global south. Cotton, as the key input in textile production, has been integral to many countries’ export-led development programmes. John Baffes, the author of many of the World Bank’s reports on the cotton sector, notes that although cotton production has grown at an average annual rate of 1.8 per cent since 1960 this trend has been anything but proportional:

Most of the growth came from China and India, which tripled and doubled their production during the period [1960 to 2000]. Other countries that significantly increased their shares of the world cotton market were Greece, Pakistan, and Turkey. Some new entrants also contributed to this growth. Australia, for example, which produced only 2,000 tons of cotton in 1960, averaged 650,000 tons during the late 1990s. Francophone Africa produced less than 100,000 tons in the 1960s and now produces ten times as much. The United States and the Central Asian republics of the former Soviet Union, the two dominant cotton producers during the 1960s, have maintained their output levels at about 3.5 and 1.5 million tons, respectively, effectively halving their market shares. A number of Central American countries that used to produce almost 250,000 tons of the fiber now produce virtually none.\textsuperscript{(17)}

The declining real price over this period undoubtedly influenced the exit of Latin American cotton producers and would have likely done the same to American and


European producers had their governments not protected them from the declining market price. China and India do support their farmers in times of low international prices, but they, along with Australia, have a significant cost-per-unit output advantage over most other producers. In the American market the *Farm Bill* has been the key legislation providing direct support to cotton producers in the Southern states since the Great Depression. The European Economic Community provided such great support to cotton producers through the *Common Agricultural Policy* (CAP) that people began to enter the declining market, as was the case in Greece and Spain. The third major developing-country cotton-producer, Brazil, although not mentioned by Baffes, also more than tripled production from 804,000 tonnes in 1961 to 2,632,000 tonnes of output in 2005. Overall cotton production reached a peak of 24,780,000 metric tonnes in 2004 and is likely to continue its steady expansion into the coming decade.

Although the consumption of cotton doubled between 1960 and 2000 its price has continued to decrease. Bourdet notes that a key determinant of this trend is the much quicker expansion of cotton fibre supply reflecting significant agricultural productivity gains. Another important factor was the introduction of cheap synthetic fibres, which decreased cotton’s share of total fibre consumption from 68 to 40 per cent between 1960 and 2000. Therefore, the defining trend of cotton over the past fifty years has been increased productivity and output at a lower per-unit return, which would normally

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19 Baffes, *Cotton and Developing Countries*, pp. 120-121.
<http://faostat.fao.org/default.aspx> Here after FAO, ProdSTAT.
23 Bourdet, *A Tale of Three Countries*, p. 14. This comes from ICAC data. They expect the share of cotton to decrease further to 36 percent in 2010.
reflect increasing returns to scale, but for many of the world’s cotton farmers this has not been the case. Instead their incomes have steadily eroded since the 1970s (see figure 3).\textsuperscript{24} It seems odd that the cotton supply increased at such a rate as to make its production almost unprofitable for many of its farmers, but the contradiction is not what it seems when one considers cotton as a single node in the long and complex chain of textile and apparel production. For sub-Saharan Africa, at least, this can be partially explained by Lewis’ argument that “it is not the low prices of primary commodities that keeps wages low in the producing countries but rather the poverty in developing countries that keeps commodity prices low.”\textsuperscript{25} Regardless of the exact cause of declining real incomes in the face of increased productivity and output, the situation demands that the productive activities for developing world producers change so that they may increasingly gain from their contribution to the global economy. This will be discussed in greater detail in chapters 4 and 5.

\textbf{Figure 3: Average Real Income per hectare (1950/51 – 2000/2001)}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure3.png}
\caption{Average Real Income per hectare (1950/51 – 2000/2001)}
\end{figure}


\textsuperscript{24} ICAC, \textit{Cotton: World Statistics}, p. 9. See charts “Deflated Cotlook A Index” and “Deflated Average Revenue” per hectare.

\textsuperscript{25} Lewis (1954) cited in Deaton and Miller, \textit{International Commodity Prices}, p. 25.
As cotton becomes less valuable in its own right it becomes indispensable for developing countries to ‘upgrade in the supply chain so that they may capture a greater share of the rapidly expanding global apparel/fabric industry. Entrance into this market is useful even for economies without domestic cotton production. Gary Gereffi, the originator of GVC analysis, notes textiles’ developmental importance as the “typical ‘starter’ industry for countries engaged in export-oriented industrialization.”

As the consumption of apparel increased across the industrialized world there was a simultaneous expansion of production around the globe, rather than within the domestic market, which had been the norm before the 1970s. In the United States, for example, imports of apparel increased from US$9,731 million in 1983 to $48,492 million in 1997. The shift of productive capacities from developed countries was of enormous benefit to developing economies the world over, in particular those of East Asia. Each of the industrial(izing) economies of Asia began their rapid development through the export of textiles, effectively utilizing cheap labour to finance broader development programmes.

Given the importance of textiles in the industrialization process it is not surprising that governments have seen fit to protect domestic textile production, and have extended this protection to its key input, cotton. This helps explain another anomaly of the international cotton trade, namely that it is “one of the few products in the world that are less and less traded over time (in relative terms).” In other words the rate of production increase has been, and continues to be, greater than the rate of export expansion. The

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28 See Chapter 5 of this volume.
extreme case is China. According to the ICAC, China produced an estimated 4,871,000 tonnes of cotton in 2003, and was projected to produce 6,300,000 tonnes in 2004.\textsuperscript{30} This makes China the largest cotton producer in the world, outpacing the United States by about a million tonnes each year. Yet China has been a net importer of cotton since 1989, with the exception of the 1999/00 crop year. In 2005, the latest year for which data was available, the value of China’s net import of cotton fibre was US$306,649,000, approximately 7,549,140 kg.\textsuperscript{31} Cotton, it seems, is barely worth the effort of picking and ginning unless the gains from its manufacture as textile and apparel are captured by the same national market.

The enormous increases in cotton production in select developing countries closely follows the expansion of textile production. As the major economies of Asia entered the textile market it was possible to lower costs by producing the raw material near the production and export locale as well as indirectly fund industrialization by subsidizing the production of key raw materials. However, increases in West Africa’s production, and decreases in Latin America’s, are not so readily explained by the connection to the textile market, since the latter continues to be a major producer of textiles and apparel while the former has seen declines in its textile sector as liberalization packages have been implemented. The explanation here is far more direct and of the more common economic logic: the cost of cotton production in the Americas is much higher than that of Africa and Asia.

2.3 The Cost of Production

Comparing the cost of cotton production between countries is extremely difficult and should not be taken in any absolute sense. Aside from free or heavily subsidized inputs in some countries, which are costly investments in other countries, one must also take into account the fact that some farmers – mainly those in developing countries – sell cottonseed to earn their income while other farmers – usually in the developed countries – gin the cottonseed as part of their property and earn their income from the sale of lint rather than the raw cottonseed separately. Nevertheless, M. Rafiq Chaudhry of the ICAC attempted a cautious study of the cost of worldwide production in 2001.\(^{32}\) He determined that, based on his measure of *net* costs of production, the highest producer was the United States at US$1.50/kg followed closely by Syria producing at a cost of approximately US$1.30/kg. Of the primary country data reported China having the lowest net cost at US$0.50/kg.\(^{33}\) This finding is not surprising given that Chaudhry’s correction of subsidized production rested on measures of direct subsidization. Since China’s subsidies are a tangled web that ranges from direct payouts to an artificially undervalued currency, the true cost of production may be somewhat obscured.\(^{34}\) Without delving into the complexities of China’s support mechanisms it is safe to conclude that China does, independently, produce cotton at a relatively low cost.

Using the complete set of estimates in the ICAC, study Oxfam compares the cost of production between West Africa and the rest of the world. In Benin, for example, cotton is produced “at approximately $0.30 per pound. In contrast, production costs in

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\(^{32}\) Primary data from this study is available for only 9 of the 28 countries surveyed. Paying organizations (unlike poor undergraduate students) have access to all data; therefore there is a difference in countries discussed from the primary and secondary sources.

\(^{33}\) ICAC, Chaudhry, *Cost of Production of Raw Cotton*, p. 8.

the USA fluctuate around $0.68 per pound.”35 This large difference in the cost of production is more than accounted for by the direct production and export subsidies received by US farmers. Yet these estimates do not include the less direct benefits of existing agricultural infrastructure, especially irrigation. The Oxfam study notes that “almost all cotton production in sub-Saharan Africa is rain-fed; irrigation is not an economic possibility.”36 Furthermore, cotton producers in the USA and elsewhere benefit from a well-developed communications and transport infrastructure that is severely lacking in Africa. Despite these vast differences of direct and indirect support, cotton producers in sub-Saharan Africa have remained globally competitive.

The greater competitiveness of sub-Saharan Africa as compared to Central America is a reflection of the economic stagnation in the former relative to the growth in the latter. This comes directly from Chaudhry’s analysis of the different sources of cost, such as harvesting, land, irrigation etc. Over the past three decades the cost of producing a kilogram of cotton lint has increased due to various technological improvements (i.e. agricultural chemicals and mechanization) and increases in real wage and land rent. The technological improvements have also led to greater yields of cotton per hectare, thus offsetting the increased input prices of land and labour.37 As new technologies are implemented many of the traditional cotton producers were able to remain competitive despite growing costs. But as new capital is optimized, Chaudhry concludes, increases in yield will slow or stop altogether, implying that any increase in input prices will be manifested in an increased cost per kilogram of output.38 As production technologies are

35 Oxfam, Finding the Moral Fibre, p. 6.
36 Oxfam, Finding The Moral Fibre, p. 18, note 54.
37 ICAC, Chaudhry, Cost of Production of Raw Cotton, p. 5.
38 ICAC, Chaudhry, Cost of Production of Raw Cotton, p. 5.
optimized in cotton-producing regions, one would expect to find falling output to coincide with increased factor prices.

This is precisely the case in Central America. The five main cotton producers of Central America\(^{39}\) produced an average of 1.2 and 1.0 million tonnes of cotton per year in the 1960s and 1970s respectively (Annex 1). Average annual output dropped by 40 per cent in the 1980s, a reflection of several factors, not least of which is the onset of civil disorder through much of the region. Nevertheless, as relative calm was restored to Central America, average production continued to decline to 303,407 tonnes per year in the 1990s, and even further to 152,935 tonnes per year over the first six years of the 21\(^{st}\) century\(^{40}\) (Annex 1).

According to the International Labor Organization (ILO), Latin America saw a significant decline in the working population living below the international standards of US$1 and US$2 a day. In 1980 15.6 per cent and 41.2 per cent of the employed population worked for less than one and two dollars a day, respectively. By 2003 the estimates had declined to 13.5 per cent and 33.1 per cent, with further declines expected over the next decade. Although these changes are not staggering, they do indicate significant improvement, whereas Sub-Saharan Africa has only seen increases in the percentage of labourers working in these lowest brackets of income.\(^{41}\) Central America was able to gain from some of the agricultural improvements decades ago, but has since been unable to offset its improved labour market operations with greater capital inputs and productivity. African producers, on the other hand, have increased their capital

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\(^{39}\) El Salvador, Guatemala, Honduras, Mexico and Nicaragua were used as the key examples of Central American cotton production.

\(^{40}\) FAO, ProdSTAT. My calculations.

inputs, and therefore yields, as the unskilled labour has become ever more available to the market, increasing the competitiveness of African cotton.

It is often assumed that comparative advantage of many developing countries rests simply on a cheap and near unlimited supply of labour. And it is certainly the greatest factor in the low cost of cotton production in Africa. However, SSA is not the cheapest production locale. As Baffes reports “Brazil, China, and Pakistan are the lowest-cost producers, followed by Australia, Turkey, and West Africa.”[42] The three ‘emerging’ economies with the lowest costs of production have a successful combination of cheap labour and farm support (i.e. mechanization, irrigation and extension services). They too engage in direct subsidization, but to a far lesser degree than that seen in Europe and America (see chapter 3, table 1). It is interesting that Australia’s cost of production is comparable to West Africa since the Australian government subsidizes production far less than its EU and US counterparts and has an almost equivalent cost of labour. However, in Argentina, the USA, and Australia, 95 to 100 per cent of the harvest is machine picked, significantly reducing labour’s share of total cost.[43] Clearly, the cost of production, although highly dependent on labour costs for many producers, is not the panacea of export promotion. If the major cotton producers of Africa are to capitalize on their natural advantage stemming from cheap labour they must begin to change their policies to gain an even greater cost advantage.

2.4 The Contemporary Cotton Market

Thus far the chapter has provided an overview of the pricing mechanism related to cotton, the shifts in the geography of cotton production over the past four decades, and

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[43] ICAC, Chaudhry, Cost of Production of Raw Cotton, p. 4.
a brief explanation of the key factor inputs affecting the cost of cotton production. Before looking at the problems associated with cotton production it will be helpful to have an idea of what the trade and production of cotton looks like on a global scale today.

There are two sources for the information presented below. On the one hand, there are the international agencies including UNCTAD, FAO and the World Bank which calculate the price, production and trade of commodities each year. The ICAC also publishes such statistics and is likely more accurate. However, much of their data is not freely available. The data presented below may, therefore, have minor discrepancies. This is done in an attempt to use the most recent and accurate information available.

ICAC projected that the world output of cotton in 2003 was 20.23 million metric tonnes. Of these 20.23 million tonnes China, America, and India accounted for the greatest output at 5.09, 3.64, and 2.63 million tonnes respectively. Pakistan, Uzbekistan and Turkey were significantly behind the three leaders producing 1.87, 1.04 and 0.95 million tonnes. These six producers accounted for almost three quarters of global cotton production (73.9%) in 2003. This ratio is relatively constant throughout the current decade. During the 2002/03 season, SSA collectively produced 1,295,000 metric tonnes, half of which came from the cotton-producing Francophone African countries (CFA).

Continuing in the 2002/03 season it is interesting to note that two of the top three producers also claim the title of top consumers. China consumed 5.68 million tonnes of cotton, and India 3.01 million tonnes during this season. Without even looking at international trade flows it is clear that the major developing economies, accounting for a

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third of the world’s population, rely heavily on cotton for the domestic manufacture of textiles and apparel.

Following this pattern, Pakistan and Brazil consumed 1.98 and 0.90 million tonnes of cotton lint, respectively. Turkey, for its part, consumed 1.4 million tonnes of cotton, meaning that it accounts for the vast majority of both production (71%) and consumption (83%) of cotton in the Middle East. For SSA (excluding South Africa) consumption is a mere 225,000 tonnes. Moreover, virtually all of this consumption was domestically produced, only 5 of 48 countries importing 58,000 tonnes of cotton. The CFA recorded no imports and collectively consumed only 33,000 tonnes of cotton, over half of which went to Cote d’Ivoire alone. The situation in Central Asia is similar to that of francophone Africa. Uzbekistan, accounting for two-thirds of the region’s output,
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Conversely, Canada imported and consumed 70,000 tonnes of cotton; the United States consumed 1.77 million tonnes of cotton, almost all of which was produced domestically; and the European Union consumed 920,000 tonnes of cotton – with total ‘domestic’ production reaching 453,000 tonnes (355,000 from Greece, 98,000 from Spain). Latin America, when excluding the exceptional case of Brazil, produced 267,000 and consumed 411,000 tonnes of cotton in 2002/03. Finally, East Asia produced 55,000 tonnes while Australia contributed the remaining 454,000 tonnes calculated in the ICAC’s sub-regional category. Australia proceeded to consume only 27,000 tonnes of cotton while the rest of the region (including Japan, Korea, Indonesia and Thailand among others) consumed 1.7 million tonnes (see figure 5).

\textit{Figure 5: Five-Year Average Consumption}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure5.png}
\caption{Five-Year Average Consumption}
\end{figure}

From the preceding discussion the general pattern of the international trade of cotton should now be clear. Given that two of the three big producers consume close to all of their domestic production the landscape of net exports looks very different than countries’ production levels. The United States is unequivocally the world leader with net exports reaching 1.931 (2,342 – 411) million tonnes in 2002/03. Because of China and India’s cotton consumption, net exports in the 2002/03 season were -250,000 and -421,000 tonnes, respectively. Francophone Africa had exports of 1.027 million, and no imports. Again, Central Asia followed this pattern with net exports reaching 634,000 (1,101 – 467). And, of course, East Asia and the EU imported virtually of the cotton they consumed (see figure 6).

Figure 6: Five-Year Average Net Exports


46 The data shown accounts for over 95% of global consumption. Countries included in categories are the same as the ICAC data, the exception is noted. The ICAC data inexplicably omitted any consumption quantities for Taiwan during the 1990s.
This overview of production, consumption, and trade suggests an interesting pattern. It seems that, in general, developing countries that have non-positive net exports are at higher levels of economic well-being and growth; whereas those with very high net exports of cotton (the select African and Central Asian economies) tend to be on lower rungs of the developmental ladder.\(^\text{47}\) It is the contention of this paper that, because these economies have yet to realize the gains from utilizing cotton in domestic industry, they continue to produce minimal or stagnant growth rates (relative to population). On the other side, the pattern for developed countries is not surprising: They produce and consume very little cotton. They are the consumers of the final apparel products. These two general patterns highlight one of the central questions in terms of cotton, textiles and development: if the developed world sits atop this greatly profitable global supply chain (cotton, textiles, apparel, *haute* fashion) then why do these governments continue to protect their domestic cotton producers and textile manufacturers? And, what can be done about this hypocritical practice? It is to these and related questions that we now turn to in the following chapters.

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Chapter 3

The Political Economy of Price Manipulation

The market for clothing has grown enormously over the past two decades. As more people in North America and Europe demand larger quantities of apparel of higher ‘quality’ the importance of the cotton sector in its contribution to overall economic activity has greatly expanded. In just fourteen years, from 1980 to 1994, the developed world more than doubled expenditure on clothing, from US$ 110 billion to US$229 billion\(^1\) implying that the apparel sector’s annual growth outpaced OECD economies by about 2 per cent each year. In terms of quality (that is variety over time, not durability), one survey notes that the global industry is “increasingly influenced by changes taking place at the retail end” which demands, \textit{inter alia}, quicker response and shorter lead times as retailers move “to shorter season product lines.”\(^2\) Fashion and style have always been closely tied to the elite classes of society but it has only been in the latter half of the twentieth century that these imperatives were accepted by and made available to the general public.

Over the past several decades the expansion in the end-consumer market has provided far less benefits to those at the lower end of the supply chain. At the initial node of production, cotton output increased by only 35.6 per cent between 1980 and 1994, and this rate of growth has been and is projected to continue to decline to 17.2 per

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cent growth in the following fourteen years. Admittedly cotton constitutes only 40 per cent of total fibre consumption with a further expected decline to 36 per cent by 2010.

Even at this rate of decline, the implication is that increased demand for apparel worldwide has provided the stimulus for greater fibre consumption in general, and cotton production in particular. Output growth has not simply been one-sided. Yields per hectare have increased over the past two decades albeit at a slower rate than before, indicating that supply has increased at all price levels (see figure 1).

![Figure 1: Yield Growth](image_url)


To accurately determine which side of the market has had the greatest pull we would need to compare the exact supply- and demand-price elasticities. If, however, demand has expanded more quickly than supply, which seems to be the case, one would

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expect the world price of cotton to increase proportionally along with the quantity demanded. Unfortunately, the reverse has been true for African cotton producers, their output price has diminished at an uneven rate as output has expanded. Surely a more detailed analysis is required to determine to what extent cotton output growth is demand- or supply-led. On this very preliminary analysis it seems the interactions of cotton’s supply and demand violate the basic principle of profit maximization – that price and output move together. The cause of this contradiction is found in the public and private politics of the developed world. The greatest contributing factor being the subsidization of cotton output.

3.1 The Impact of Subsidies

No market operates without imperfection. It is simply impossible to have all economic agents act completely rational (read: maximize utility given perfect information) at all times. The operations of markets are, of course, assumed to be approximations of the models of perfect competition. In the preceding discussion it was shown that the cotton market deviates from competitive economy models. There are several underlying causes of this distortion of which production subsidies are the most prevalent. If this is the case then ‘imperfection’ does not adequately describe the cotton market. Rather the market is the target of outright manipulation, and three governments are directly responsible for creating this burden.

The United States of America and the People’s Republic of China represent the top cotton exporting and producing countries, respectively. The governments also represent, by an enormous margin, the greatest bulk of global cotton subsidies. The ICAC’s 2002 study of cotton subsidies found that “over the last four seasons [1997/98
to 2001/02], the largest government expenditures to assist cotton growers were paid in China (Mainland) and the USA."⁵ Although not excusable, this situation is not surprising given the two states account for over 40 per cent of global production.

### Table 1: Total and Proportional Subsidies by Country

<table>
<thead>
<tr>
<th>Country</th>
<th>Cotton Year 2001/02 (Price: US$0.4181/lb.)</th>
<th>Cotton Year 2002/03 (Price: US$0.5571/lb.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assistance (US$/lb.)</td>
<td>Production ('000s tonnes)</td>
</tr>
<tr>
<td>Spain</td>
<td>0.76</td>
<td>107</td>
</tr>
<tr>
<td>Greece</td>
<td>0.59</td>
<td>410</td>
</tr>
<tr>
<td>USA</td>
<td>0.38</td>
<td>4,421</td>
</tr>
<tr>
<td>China</td>
<td>0.10</td>
<td>5,320</td>
</tr>
<tr>
<td>Colombia</td>
<td>0.16</td>
<td>33</td>
</tr>
<tr>
<td>India</td>
<td>0.09</td>
<td>2,475</td>
</tr>
<tr>
<td>Mexico</td>
<td>0.09</td>
<td>92</td>
</tr>
<tr>
<td>Benin</td>
<td>0.05</td>
<td>179</td>
</tr>
<tr>
<td>Argentina</td>
<td>0.04</td>
<td>74</td>
</tr>
<tr>
<td>Brazil</td>
<td>0.03</td>
<td>750</td>
</tr>
<tr>
<td>Egypt</td>
<td>0.03</td>
<td>314</td>
</tr>
<tr>
<td>Mali</td>
<td>0.03</td>
<td>242</td>
</tr>
<tr>
<td>Turkey</td>
<td>0.03</td>
<td>901</td>
</tr>
<tr>
<td>Cote d'Ivoire</td>
<td>0.02</td>
<td>163</td>
</tr>
</tbody>
</table>


It is undeniable that such enormous subsidization, in any market, will generate oversupply and hence an artificially low price. In contrast to this high level of total subsidies, the European Union protects its cotton producers (Greece and Spain) through the largest relative support, often paying producers *double* the per-unit world

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⁶ It is important to note that the support per-pound tabulated by Oxfam does include only direct income and price support. The US data *does not* include `step-2` funding nor crop insurance. Oxfam retrieved non-US data from the ICAC study discussed here.

⁷ Cotlook Ltd., *Displaying Cotlook Indices (seasonal) from 1997 to 2007*. <http://www.cotlook.com/cdis/more_cotlook_indices.php> Retrieved 8 March 2007. Please Note these are the A-Index NE annual averages. In 2003 Cotlook Inc. began taking the average of ‘far east’ prices a part of its official price quotations, this is not reflected in the prices shown.
price. For example, in the 2001/02 and 2002/03 crop years total EU assistance was
dwarfed by American and Chinese support, but EU per-pound support was between
two and three times that of the United States, the next largest per-unit subsidizer (see
table 1). Although the EU produces only about 2 per cent of global output (Annex 1)
the degree of production support does impact the international market.

Determining the real impact of these subsidies is a complicated process of
delineating the different means of support and estimating the divergence between
observed trends and what would be the case in a freer market. Such difficulties have
led to “numerous models … with considerable variation in the results.” Depending
on factors such as the assumed level of price-elasticities or which subsidies are
removed in a particular model, the short-term price impact varies between neutrality
and a 30 per cent increase. All told, John Baffes’ overview of these various
approaches finds that by “taking a simple average over all models, it appears that in the
absence of support the world cotton price would have been about 10 percent higher than
it actually was.” That said, virtually all of these models use the base model and data of
the ICAC and it seems reasonable to do the same here.

In their 2002 study of government intervention and its affects on the production
and trade of cotton the ICAC, uses the demand variables of its World Textile Model to

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9 Although there are no formal studies that assess the price impact of EU subsidies exclusively (as opposed
to part of a collection of subsidies) the policy discussion in chapter 4 highlights how Europe, at first, hid
behind its small production base, but has since realized their cotton policies are not entirely negligible.
10 John Baffes. “Cotton and the Developing Countries: Implications for Development,” in Richard
Newfarmer ed., *Trade, Doha, and Development: A Window into the Issues*, (World Bank, Washington DC,
11 Other differences in model calculations include whether liberalization is confined to cotton or applied to
other sectors, and which base year(s) is used. Baffes, “Cotton and the Developing Countries,” p. 122-123.
calculate elasticities. This “suggests that a 20% increase in cotton prices would result in a 1% decline in world demand for cotton … However, there is no measure to assess the impact” of resultant increased supply in non-subsidizing countries.\textsuperscript{13} Nevertheless, there is little doubt in any study that the removal of subsidies by the United States, the European Union and/or China would shift cotton production from their land to the more competitive locales of West Africa, Brazil and Uzbekistan\textsuperscript{14} – areas which are also in much greater need of assistance. Furthermore, the ICAC study demonstrates that as production expanded in these areas (as well as Australia) global production would decrease (see figure 2). Therefore, a negative global supply shock will increase cotton’s international price while simultaneously expanding the output in some of the poorest regions of the world.

**Figure 2: Estimated World Output and Price under Subsidy Removal**

![Figure 2: Estimated World Output and Price under Subsidy Removal](chart.png)


Because the 1994/95 growing season was one with a particularly high real price (94.5¢/lb.) there was relatively little direct production assistance in the USA and

\textsuperscript{13} ICAC, Production and Trade Policies Affecting the Cotton Industry, p. 7.

\textsuperscript{14} Baffes, “Cotton and the Developing Countries,” pp. 122-123. This provides an excellent but brief overview of eight studies which calculate the price impact of subsidies in the cotton market. Also see ICAC, Production and Trade Policies Affecting the Cotton Industry, 2002; Goreaux (2002); Bourdet (2004); Oxfam, Finding the Moral Fibre (2004).
elsewhere (with the exception of Europe). Therefore, the ICAC study used the 94/95 season as a representation of what US production would be in the absence of subsidies. With 1994/95 as the base-year, and supply price-elasticity calculated at 0.47, the study concludes that price levels would have been $17/\text{lb}$ higher in 2000/01 and $31/\text{lb}$ higher in 2001/02, with an associated decline in world production of about 20 per cent (as represented in figure 2b). The difference between these distortions is, in part, a result of the counter-cyclical payment scheme used by the United States, which keeps output proportionally higher in years with lower prices. Such observations lead Oxfam to conclude: “The lower the price gets, the more harm these subsidies are inflicting.” However, this holds true only for US subsidy removal (the ICAC study and figure 2 refer to global subsidy removal). Referring back to figure 2, as prices rebounded in 2002/03 the US relative and total support declined, as did production. Therefore, as price increased by 33 per cent, total US subsidies declined by approximately 23 per cent. Similarly, seven of the ten minor subsidizers discontinued direct support as cotton’s price returned to a more reasonable level. Europe and China, on the other hand, actually expanded their per-unit and total subsidies, even as prices and output increased. This contradiction reflects their preference for direct production support as opposed to counter-cyclical payments.

The ICAC study provides an excellent starting point, but it is difficult to assess the developmental implications of subsidy removal from their analysis. There are several institutions and groups of academics involved in analyzing the cotton industry from a

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16 *ibid*.
18 Note that as a proportion of total world direct subsidies the US contribution declined from 58% to 49%.
developmental perspective, but none are as thorough and direct as Oxfam International. In their 2004 paper, *Finding the Moral Fibre*, the organization calculated that US subsidies alone depress the international price of cotton by about 7 per cent, approximately 4¢/lb. Based on this 4¢/lb. price difference Oxfam found that in 2001 “sub-Saharan cotton exporters lost $305 million,” of which US$191 million would have been accrued to the eight West African producers.\(^{19}\) The 2001 estimates are not out of the ordinary in terms of the income sub-Saharan Africa loses annually to the subsidized American cotton farms.

The support given to American farmers keeps production at artificially high levels, but the impact is not simply confined to output. The large subsidies of the United States also skew the export of cotton in their favour (figure 3). The United States is, by a large margin, the largest exporter of cotton and, along with China, one of the only two countries that provide direct export subsidies.\(^{20}\) It is unfortunate, but not surprising, that the United States’ share of the global cotton exports has increased dramatically over five years, from 17.3 per cent in 1998/99 to 41.5 per cent in 2003/04.\(^{21}\) These increases in US exports reflect the changing nature of the textile market. Increasingly, clothing producers in developed countries have shifted their productive capacity to the lower-cost countries of South East Asia. Therefore, the use of cotton lint within the United States has declined while cotton production has remained steady because of the immutable production subsidies provided by the US *Farm Bill*.

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\(^{19}\) Oxfam, *Finding the Moral Fibre*, p. 8.

\(^{20}\) Although China provides direct export subsidies for the export of raw cotton, it is a net importer of cotton. ICAC, *Production and Trade Policies Affecting the Cotton Industry*, pp. 6-7.

In a similar study, John Baffes applies his 10 per cent depressed price average to the global baseline production and trade projections set forth by the Food and Agricultural Policy Research Institute (FAPRI). Baffes projects that between 2003/04 and 2011/12 African exports would be 12.6 per cent above the baseline each year. Similarly, Uzbekistani exports would be 6 per cent higher each year than is currently projected. His estimates imply that Francophone Africa “lost approximately $150 million annually in export earnings due to subsidies.”

Therefore, both Baffes’ and Oxfam’s study show that developed world subsidies cause not only losses of income but also losses of foreign exchange earnings. And earning hard currency is absolutely pivotal to the financing of economic and social developments in order to break the cycle of African dependency.

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Export earnings are of enormous importance to developing nations, especially those with heavy debt loads. This is often at the heart of arguments in favour of reducing barriers to trade in primary commodities since it would allow the developing world to utilize its aggregate comparative advantage in commodity production. Cotton, however, stands apart from almost all other commodities on this point in that the trade of cotton is already relatively liberalized:

Under agricultural trade-only liberalization, nothing major happens in cotton markets … With only 2 percent of world imports in TRQs [trade related quotas] and 2 percent purchased by countries that apply tariffs. The world cotton price increases by about 4 percent compared to the baseline because of the removal of trade distortions … [In this model] Major cotton exporting countries, such as South Africa, Uzbekistan, the United States, and Australia, increase their exports as world cotton price rises. 23

The removal of the remaining barriers to trade would surely benefit producers by raising prices, but it is interesting to note that international aggregate distortions are less influential than American or Chinese subsidies on their own. Therefore, the majority of cotton market distortions are the result of the domestic farm support found in the United States, the European Union and the People’s Republic of China.

In terms of development for cotton producing and exporting nations, one need only focus on the removal of subsidies from these three markets. What benefits may we expect from such removal? For SSA the impact would be beyond any other single policy change. For example, a joint study by John Beghin and Ataman Aksoy on distortions in commodity markets found important implications for developing country cotton producers. Using Baffes’ 10 per cent average depressed price, they find that, in Benin “a 1-percentage-point increase in the world price of cotton would raise per capita

income [of the entire nation] by one-half a percentage point and reduce the incidence of
poverty by 1.5 percentage points.”

Table 2: Estimated Foreign Exchange Losses from US Subsidies

<table>
<thead>
<tr>
<th>Country</th>
<th>Est. value of cotton exports 2001/02* ($m)</th>
<th>Est. 2001/02 export value with the withdrawal of US subsidies** ($m)</th>
<th>Est. value lost as a result of US subsidies in 2001/02 ($m)</th>
<th>Est. value of cotton exports 2002/03 ($m)</th>
<th>Est. 2002/03 export value with the withdrawal of US subsidies** ($m)</th>
<th>Est. value lost as a result of US subsidies in 2002/03 ($m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benin</td>
<td>124</td>
<td>157</td>
<td>33</td>
<td>199</td>
<td>213</td>
<td>14.3</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>105</td>
<td>133</td>
<td>28</td>
<td>190</td>
<td>204</td>
<td>13.7</td>
</tr>
<tr>
<td>Cameroon</td>
<td>81</td>
<td>102</td>
<td>21</td>
<td>97</td>
<td>104</td>
<td>7.0</td>
</tr>
<tr>
<td>Central African Rep.</td>
<td>9</td>
<td>11</td>
<td>2</td>
<td>7</td>
<td>7</td>
<td>0.5</td>
</tr>
<tr>
<td>Chad</td>
<td>63</td>
<td>79</td>
<td>16</td>
<td>79</td>
<td>85</td>
<td>5.7</td>
</tr>
<tr>
<td>Cote d’Ivoire</td>
<td>121</td>
<td>153</td>
<td>32</td>
<td>102</td>
<td>110</td>
<td>7.3</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>18</td>
<td>23</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>0.4</td>
</tr>
<tr>
<td>Ghana</td>
<td>7</td>
<td>9</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>0.3</td>
</tr>
<tr>
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<td>16</td>
<td>3</td>
<td>15</td>
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<tr>
<td>Madagascar</td>
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<td>3</td>
<td>4</td>
<td>4</td>
<td>0.3</td>
</tr>
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<td>Malawi</td>
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<td>8</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>0.4</td>
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<td>Mali</td>
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<td>204</td>
<td>43</td>
<td>205</td>
<td>220</td>
<td>14.7</td>
</tr>
<tr>
<td>Mozambique</td>
<td>23</td>
<td>29</td>
<td>6</td>
<td>20</td>
<td>21</td>
<td>1.4</td>
</tr>
<tr>
<td>Nigeria</td>
<td>55</td>
<td>69</td>
<td>14</td>
<td>18</td>
<td>20</td>
<td>1.3</td>
</tr>
<tr>
<td>Senegal</td>
<td>11</td>
<td>14</td>
<td>3</td>
<td>19</td>
<td>20</td>
<td>1.3</td>
</tr>
<tr>
<td>Sudan</td>
<td>65</td>
<td>82</td>
<td>17</td>
<td>101</td>
<td>108</td>
<td>7.3</td>
</tr>
<tr>
<td>Tanzania</td>
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<td>100</td>
<td>21</td>
<td>51</td>
<td>54</td>
<td>3.7</td>
</tr>
<tr>
<td>Togo</td>
<td>61</td>
<td>77</td>
<td>16</td>
<td>103</td>
<td>111</td>
<td>7.4</td>
</tr>
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<td>24</td>
<td>25</td>
<td>1.7</td>
</tr>
<tr>
<td>Zambia</td>
<td>29</td>
<td>37</td>
<td>8</td>
<td>23</td>
<td>25</td>
<td>1.7</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>69</td>
<td>87</td>
<td>18</td>
<td>44</td>
<td>48</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,126</td>
<td>1,426</td>
<td>306***</td>
<td>1,318</td>
<td>1,412</td>
<td>94.6</td>
</tr>
</tbody>
</table>

*Estimated export value equals the product of the quantity of cotton exports and the average annual A-index world price.
**Calculations based on an increase in the average annual A-index price of 11 cents per pound.
***Calculations based on an increase in the average annual A-index of 4 cents per pound.
****Countries that suffered losses in 2001/2002 but did not suffer losses or produce cotton in 2002/2003 are not included in the table. These countries include Congo, Kenya, Somalia, and South Africa which account for $7 million in estimated foreign exchange losses in 2001/2002.


Although staggering, it is not surprising for a country that relies so heavily on cotton. 40
per cent of Benin’s exports and 7 per cent of its national income come from the
production of cotton. Unfortunately, this heavy reliance on cotton is observed time and

again in West Africa – cotton lint accounts for over 50 percent of Malian exports, approximately 60 per cent of Burkina Faso’s, and 75 per cent of Chad’s total exports (see Annex 6).

Agricultural productivity expanded rapidly during the second half of the 20th century, but this technological progress has begun to slow. Although the real price of cotton – and many other commodities – have seen increases in recent years, one cannot be satisfied that such a trend will be sufficient to alleviate endemic poverty at an acceptable rate. The impact of this price trend could vary widely, yet the ease by which Western governments could further raise the real price, expand production in developing states, and stabilize nominal fluctuations calls for immediate action. The removal of production and export subsidies would be a great step toward real development for those who need it the most.

3.2 Market Concentration in Cotton – National and International Oligopsonies

As shown, the greatest barrier to optimal cotton production and trade is the direct support given to producers in the three key markets discussed in the previous section. If trade-distorting subsidies were removed, the extra revenue generated in the cotton market would accrue to some of the least developed economies. With the available data it is very difficult to determine how much of current and expected revenue is, and would be, reaped by each agent in the supply chain – the exporters, the ginners, and the farmers. If all, or most, cotton markets are relatively competitive then we could conclude that each node of production and trade within a country receives revenue equal to total cost.\(^\text{25}\) In

\(^{25}\) Obviously, total cost includes ‘opportunity cost’ such that economic profits are zero (Max(\(\Pi\)) \(\rightarrow\) MC = MR and \(\Pi = 0\)).
such circumstances every economic actor receives her or his fair due,\textsuperscript{26} and, therefore, we need not worry about how much surplus accrues to whom.

Given the lack of international firm-level data, it is difficult to discern the existence of a global concentration of market power in the cotton trade. One important aspect of its structure is the fact that virtually all cotton processing and exporting companies belong to the International Cotton Association Limited (ICA) – not to be confused with the ICAC. The ICA operates out of Liverpool, England and sets its own rules for the trade of cotton.\textsuperscript{27} The ICA and some of its ‘International Executive Members’ are multinational, privately-held companies, including Louis Dreyfus Inc., Dunavant, the Weil Brothers, and Cargill International.\textsuperscript{28} Therefore, firm-level data is almost non-existent in statistical databases and the formal literature. Despite such difficulties there has been some analysis on the structure of the international cotton market, and even more at the national level of select developing states.

In 2005, the ICAC conducted a survey of eighty cotton companies involved in international trade, the findings of which “inclines them to believe that market competition prevails.”\textsuperscript{29} However, the ICAC findings are not accepted by all analysts. For example, Michael Fok asserts that the increasing market concentration in the “trade and processing of agricultural commodities remains overlooked as well as the price capture by the resulting oligopolies.”\textsuperscript{30} Fok goes on to counter the ICAC’s survey

\textsuperscript{26}This means fair within a capitalist economy, where people are compensated for the value of their output, which is determined by all economically active persons. If this is deemed ‘unfair’ then one must challenge the structure of capitalism itself, which is well beyond the scope of this paper.
\textsuperscript{27}International Cotton Association Ltd., Rules and By-Laws, June 2005 Edition. See www.ica-ltd.org
\textsuperscript{28}International Cotton Association Ltd., List of Registered Firms with the Association, 23 October 2006. See www.ica-ltd.org
\textsuperscript{29}ICAC 2005, The Structure of International Trade, 2005. Cited in Fok, Liberalization and globalization, p. 4. The actual study is not available to the public.
\textsuperscript{30}Fok, Liberalization and globalization,” p. 2.
declaring that their “position is debatable since there are only a dozen companies really involved in international trading business.”

Yet, beyond listing the major companies involved in the cotton industry, Fok fails to demonstrate that they exercise market power at the international level or that they even have the capacity to do so. Without more detailed information, no firm conclusion can be reached as per the concentration of market power on the global scale.

In contrast to these inconclusive results, national markets in SSA clearly lack proper competition. Although imperfect competition enables the possibility of a sub-optimal distribution of surplus, this is not an assured outcome. The distribution of income is highly dependent on the government policies that oversee and regulate the market when competition is lacking. In SSA the production of raw cotton is done, almost exclusively, on a competitive basis, since small-scale farming is the most productive cotton-growing arrangement. Therefore, rural farmers are the most likely to suffer from the lack of buyer competition and are in the greatest need of protection.

Protecting cotton farmers is certainly necessary, but cannot be done without proper policies. Cotton farmers in SSA were highly insulated from the volatility of the international market until the collapse of commodity prices in the mid-1980s. Before this time, every major cotton producing country had at least some form of government regulated or controlled monopoly, which oversaw the purchase, ginning and export of

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31 Fok, Liberalization and globalization, p. 4.
32 He does, however, provide an insightful discussion on Cotlook’s price setting mechanism that will be referred to in the following section, 3.3.
33 In this case, the discussion is of oligopsonies rather than oligopolies – a concentration of buyers instead of the more common inverse.
Like most parastatals, the bureaucracy and corruption grew beyond a sustainable level, and eventually led to the collapse of the government monopolies. The combination of parastatal and commodity price collapse ensured the status quo could no longer be maintained by any African state.

In Southern and Eastern Africa the process of government divestment liberalized the ginning and trading sectors, replacing them not with a competitive industry, but with a small collection of private firms. Cotton sector reforms in Francophone Africa, on the other hand, have had a much more measured approach to liberalization and, as a result, continue to exhibit some of the faults found before the commodity crisis two decades ago. Originally cotton production and regulation in Francophone West Africa (CFA) was established through the state-owned French company *Compagnie Francaise pour la Developpement des Fibres Textiles* (CFDT), which changed its name to Dagris in 2001. Dagris built supply chains in West Africa that were highly vertically integrated and directed toward the export of cotton to the European market. Despite a decade of reform the market structures in Francophone Africa have remained largely unchanged.

Yves Bourdet’s study of the reforms in three major West African markets – Mali, Burkina Faso, and Benin – is a useful overview of the current market structure in the CFA. In Mali, the *Compagnie Malienne pour le Developpement du Textile* (CMDT), took control of all cotton market operations in 1974. CMDT remains as a joint venture between the Malian government and Dagris in a 60-40 ownership split. In 1989 Mali’s cotton sector underwent its first major reforms, but these did not include privatization.

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36 To this day Dagris is still majority-owned by the French government, holding a 64.2% stake in the company. See Bourdet, *A Tale of Three Countries*, p. 12.
Rather, these reforms kept CMDT as a state-run monopoly and attempted to provide protection to small-scale producers. Specifically, the reforms gave the CMDT more financial autonomy and attempted to provide greater protection to farmers in the form of minimum producer prices, a price stabilization fund, and rules in regard to the disbursement of profit.\(^{37}\)

Unfortunately, these reforms did not lead to a more stable market. By the late 1990s the Malian cotton sector was crumbling; in response “the Malian government ordered an audit that far and wide illustrated the wrongdoings at the CMDT and indirectly revealed the weaknesses of the 1989 reform.”\(^{38}\) The World Bank has been pressing the government to implement new reforms, but the process has been slow. The cotton sector in Mali continues to be dominated by the CMDT as the “exclusive purchaser of seed cotton” and controls “the procurement and distribution of inputs” and the transportation and ginning of cotton.\(^{39}\) Therefore, Malian small-scale farmers are indeed protected from the volatility of the international markets, but not from the whims of CMDT personnel.

The reforms in Burkina Faso have been of a similar nature as those found in Mali. In 1979 SOFITEX, *Societe Burkinabe des Fibres Textiles*, was established as another joint venture between the national government (65%) and CFDT (34%). As with Mali, the company held a government-sanctioned monopoly over the entire cotton sector, which resulted in a supply structure with a high degree of vertical integration. In 1999, SOFITEX was re-organized to give greater say to the primary producers. As such, the

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38 Bourdet, *A Tale of Three Countries*, p. 20.
39 Bourdet, *A Tale of Three Countries*, p. 17. In terms of ginning the CMDT continues to be the sole operated of Mali’s 17 ginning factories.
ownership is now divided between the federal government at 35 per cent, Dagris (formerly CFDT) remaining at 34 per cent and the multitude of producers’ associations owning 30 per cent of the state body.\footnote{Bourdet, \textit{A Tale of Three Countries}, p. 22. The remaining 1 per cent stake is now owned by local banks.} Again, with great similarity to Mali, the first round of reforms in the early 1990s did not produce the substantial gains hoped for.

In Burkina Faso today, there are three new liberalization policies being implemented: the gradual liberalization of input markets; support for the entry of private companies in the transportation sub-sector; and the divestment of 17 per cent of the SOFITEX ginning capacity, in the hope that private enterprise will overtake the processing zones.\footnote{\textit{Ibid.}} The experience of the first round of reforms in both Mali and Burkina Faso demonstrate that, although these public monopolies were designed to protect small-scale farmers from the open market, they have failed to pass on these benefits to the primary producers. This is due, in great measure, to the lack of oversight and proper management. The high level of corruption and the lack of skilled managers in the parastatals seriously compromised the positive effects that could have developed in more stable environments.

In contrast to these reforms Benin has seen much greater change over the past two decades. The ‘leftist’ government of Benin rejected any marketing agreement with the French government and its agencies, such as CFDT. Nevertheless the government did not hesitate to establish its own vertically integrated market around the entirely state-owned company, \textit{Societe Nationale pour la Promotion Agricole} or SONAPRA.\footnote{Bourdet, \textit{A Tale of Three Countries}, p. 26.} Ironically, the reforms in Benin began earlier than in its CFA counterparts and were much quicker in their drive towards limited privatization.
Deregulation began in 1992 and is continuing today. Liberalization of the cotton sector has focused, at least initially, on the input market (i.e. seeds, fertilizer) and this has been somewhat successful, as the number of private firms has gone from one, at the beginning of reforms, to a peak of twelve in 1999.\textsuperscript{43} Although the market, as a whole, has remained highly regulated by the Benin government, it has not experienced a serious collapse as was observed in Burkina Faso and Mali. The fact that the reforms have not led to any cotton market crises in Benin shows the benefit of allowing liberalization to proceed, even though the market may not arrive at full competition. In other words, some competition is better than state control. More precise policy prescriptions will be discussed in chapter 4.

As mentioned, the reforms in Southern and Eastern Africa took a very different approach than those seen in the CFA. The political and economic conditions, as well as the historical background of the former British colonies – Uganda, Tanzania, Zambia, and Zimbabwe – certainly had an impact on the policy reforms implemented by the governments following the collapse of commodity markets in the 1980s. But the reaction

\textsuperscript{43} ibid. At the time of her publication the number of companies was down to five.
of the cotton market indicates that there were far worse problems in the policy packages here than in the CFA. Production and yields stagnated or collapsed in East and Southern Africa, whereas cotton production expanded in West Africa even under the worsening international market conditions (see figures 4 and 5).

The cotton parastatals in Tanzania and Zimbabwe met with financial bankruptcy. Uganda’s cotton production duly collapsed in its own right. Conversely, Zambia began reforms in the early 1990s after a general macroeconomic crisis and decline in cotton output, which eventually led to a strengthened market. The reform packages in each economy exhibited two broad similarities. On the one hand, these economies began to privatize key subsectors in the cotton production process – usually the transportation, ginning and exportation mechanisms. On the other hand, certain aspects of producer support were strengthened within the existing government agency – generally this included extensions services, research and information/educational programmes.

Beyond the usual reasons for agricultural and parastatal collapse in the developing world, John Baffes’ review of the cotton market in Zimbabwe, Tanzania, and Uganda notes that: “all three countries had active textile industries that were being subsidized at the expense of cotton.”

46 The indirect taxation hastened the collapsing cotton sector in each of these countries. Uganda’s industry took the greatest hit, falling from an output of 16,000 tonnes in 1984/85 to just 5,000 tonnes the next year and, finally, to a historic low of 2,000 tonnes of cotton lint produced in 1987/88 (Annex 1). Similar, but less

45 Goreaux, Reforming the Cotton Sector in Sub-Saharan Africa, pp. 11-17.
46 Baffes, “Policy Reform Experience in Cotton Markets,” p. 171. This is a very important conclusion that shall be returned to in chapter 5’s discussion on moving into the textile market to increase incomes in Africa and elsewhere.
exaggerated declines, occurred throughout East and Southern Africa in the late 1980s and early 1990s (see figure 6). The rapidly falling output of such an important cash crop demanded government action, and this came in the form of liberalization packages supported by the multilateral donor community.

*Figure 5: Cotton Production in Southern*

The Ugandan reforms began in 1992 and focused on the opening of the ginning and marketing sub-sectors to private enterprise as well as consolidating research, seed multiplication, extension and credit services within the government-run Cotton Development Organization (CDO). The programme was rather successful in Uganda as cotton production reached and exceeded its 1980s peak-output before the turn of the century. Similar success was seen in Tanzania and Zimbabwe as they too implemented controlled privatization reforms.


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Despite the increased output, a competitive buyers market was not established in any of these countries. For example, the Government of Zimbabwe formally ended its ginning monopoly in 1994, and although it is by far the largest producer of cotton in Anglophone Africa, only three private ginning companies were ever established. With so few companies to purchase the raw cottonseed from producers it is highly likely that these private actors are able to exercise their market power over the farmers to extract a greater share of the value-added surplus. However, precise data on the prices received by farmers and paid by ginners and traders would be needed for a more robust conclusion.

As with Zimbabwe, Zambia’s cotton sector reform also resulted in greater output, but given the lack of buyer competition this was likely at the relative expense of the small-scale farmer. Until the early 1990s, the Zambian cotton sector, as elsewhere, was highly regulated by the government, through the Lint Company of Zambia (Lintco). At this point the government was facing a macroeconomic crisis and began full-scale reforms throughout the country, which included the 1994 division of Lintco into three private companies. In a study of Zambian farm productivity, Irene Brambilla and Guido Porto found that the privatization process at first dampened cotton productivity as farmers adjusted to the new market. Eventually, the reforms were successful in creating a more modern and competitive industry through the transfer of competitively-priced inputs and the increased access to technical knowledge. During the interim, the three private companies that replaced Lintco established “geographical monopsonies rather than

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48 Baffes, “Policy Reform Experience in Cotton Markets,” p. 177. This is in reference to private industry before Mugabe totally wiped out hope for the country.
national oligopsonies.” After several seasons of adjustment, two new companies entered the Zambian market, creating a more competitive setting at the regional and national levels. As expected in a market moving from monopsony to oligopsony this resulted in greater household participation and revenue for the cotton sector. Although not perfect, the Zambian reforms provide a useful template for market liberalization that can directly benefit the farmers in SSA and elsewhere. The specifics of such reforms shall be discussed in detail as part of the overall recommendations for reform in the cotton industry in chapter 4.

The fact that there remains few private firms participating in the ginning and export of cotton in the smaller markets of SSA is hardly surprising since such activities are natural monopsonies. This is a direct reflection of the high initial investments associated with market entrance, which is all the more true in economies with limited infrastructure. The privatization process has increased output and productivity throughout the region, but without proper oversight there is great incentive to take advantage of the far weaker bargaining position of small-scale farmers and their associations. If the productivity gains are not appropriately passed on to the farmers then the developmental benefits of liberalization will be severely dampened. Here the asymmetry of power and information plays a key role in directing the allocation of value-added income. Although specific data would be optimal, the price levels and differentials between the different nodes of production and processing provide great insight into establishing who has extracted unfair rents as a result of the lack of competition. It is to

50 Brambilla et al., Farm Productivity and Market Structure, p. 19. See also tables 1-4, pp. 28-29.
this concept we now turn.

3.3 Price Setting Mechanisms and Differentials

Throughout this paper, the international price of cotton has been used as the universal measure of its value, but this ignores the complexity of the various levels of price setting. Generalizing the Cotlook A-Index in its application to all cotton markets allows one to focus on the production, output and income gains made at national or super-national levels. Moreover, as was discussed in chapter 2, the quality of cotton, although somewhat variable between staple lengths, does exhibit a high enough level of homogeneity to be considered a wholly integrated market. But to assess the wealth generation and developmental implications of cotton’s price in sub-Saharan Africa one must determine the price captured at the various nodes of production.

The A-Index is the average of the lowest five prices from a basket of nineteen, taken from different ports of entry. These price-per-pound quotations are cost, insurance, freight (c.i.f.) prices plus tariffs; in other words, the price paid at the Northern European points of import. Free on board (f.o.b.) prices, alternatively, are those paid at the point of export – this is the ‘cost’ portion of c.i.f. prices. Furthermore, the f.o.b. price itself, includes the cost of transport and other extension services covered by traders and ‘middle-men’ above the price paid at the farm-gate, which is the income farmers actually receive.

Returning to John Baffes’ study of policy reforms, he calculates the average difference between c.i.f. (A-Index) and f.o.b. prices in the developing countries to be

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53 In 2003 Cotlook began including the import price in some ‘Far East’ ports in an attempt to stay relevant, given the increasing shift in cotton consumption from North Europe to the Far East. See [http://www.cotlook.com/information/cotlook_indices.php](http://www.cotlook.com/information/cotlook_indices.php).
approximately US$0.10 per pound.\textsuperscript{54} Therefore, as the A-Index price hovered around or below US$0.60/lb. over the past four years, exporters in, say Benin or Tanzania, received approximately 83 per cent of this price.\textsuperscript{55} Furthermore, the farm-gate prices will be well below this 80 per cent margin considering the cost of ginning alone.

Again, the high degree of private company participation in the market means that there is a substantial lack of price differential data.\textsuperscript{56} To surmount this perennial information gap the World Bank’s study, Reforming the Cotton Sector in Sub-Saharan Africa, uses Burkina Faso’s monopoly, SOFITEX, as a proxy for the price capture at the various nodes of production in similar economies. From SOFITEX’s reported earnings, the World Bank’s Louis Goreux calculates over a six-year average (1995/96 to 2001/02) that Burkina Faso’s primary producers received 57 per cent of the f.o.b. price – all calculated in CFA francs per kilogram of cotton fibre.\textsuperscript{57} We can generalize this to the limited extent that other land-locked West African producers likely receive a little over half of the export price of the cotton they produce. If such data was more readily available, then the general developmental benefits of cotton production and productivity could be calculated. This would be aided by the use of price differentials as a positively related proxy for the exercise of market power. Unfortunately, once again we must leave this important discussion until more data is collected.

Assuming the price capture at each node of cotton’s domestic trade was done in line with the competitive equilibrium point where marginal revenue equals marginal cost,

\begin{itemize}
\item \textsuperscript{54} Baffes, “Policy Reform Experience in Cotton Markets,” p. 165.
\item \textsuperscript{56} Such differentiation is extremely difficult given the lack of private firm data. Even World Bank’s in-depth study on the topic admits this problem. See Goreaux, Reforming the Cotton Sector in SSA, p. 27.
\item \textsuperscript{57} Goreaux, Reforming the Cotton Sector in SSA, p. 28, Table 4. However, the percentage difference between the A-Index and f.o.b. price is about 7% less than that calculated by Baffes.
\end{itemize}
we could still not conclude that the international price setting mechanism is optimal. Indeed, Cotlook has been greatly criticized for its speculative method used in determining the universally accepted price of cotton. Michael Fok points to an interesting trend in this respect: “For more than fifteen years, the cotton growth coming from [Francophone West Africa] has been regularly retained in the A Index calculation.” Yet it is well known that West African cotton tends to be of a higher-than-average grade and lint length. Moreover, we saw in chapter 2 that, although West Africa’s cost of production is fairly competitive compared to other cotton producers, it is not the cheapest. Despite these two factors (higher cost and quality) there has been virtually no premium above the A-Index extracted by the West African exporters, as shown in figure 5.

![Figure 6: Co-movements of A-Index and CFA Cotton](image)

*Source of Chart: Fok, Liberalization and globalization, p. 9.*

The extremely high correlation between a local price and an international price-average does seem to imply a lack of proper price determination in Liverpool. For Fok this is enough to show that there does exist price-manipulative market power at the international

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58 Fok, “Liberalization and globalization,” p. 4.
59 Both factors of quality, lint length and grade, have been produced in proportions above the A-Index’s average quoted proportions. See Fok, “Liberalization and globalization,” p. 5, table 2.
level. While this may be a bit presumptuous it does highlight the fundamental problem of having the A-Index based not “on real transactions but intention declarations provided through telephone calls or faxes.”

Clearly this will benefit the economic agents with access to advanced information technology – generally not the small-scale farmer. Hence, unfair price capture likely reflects the asymmetry of buyers’ and sellers’ access to information, rather than traditional bargaining power.

For all commodities, the international price or average-price quotation is not simply a reflection of production costs. It is, to some degree, influenced by the commodity’s futures market. As the futures’ contracts come to fruition their aggregate price-average must equal the international price. As with many other commodities, cotton’s futures contracts are traded on the New York Board of Trade (NYBOT). However, the New York Cotton Exchange (NYCE) has been criticized for its lack of applicability to producers outside the US cotton market. Moreover, it is this futures market that impacts (to an unknown degree) the price set by Cotlook. Although the establishment of other futures markets has been attempted, most recently in Sao Paulo, they generally suffer from a lack of liquidity compared to the New York market.

In sum, the financial power of the New York futures market and the informational advantages of the Liverpool A-Index imply that developing world participants in the cotton market have little alternative than to use this North Atlantic pricing duo. Surely at the time of their creation, in the late 19th century, these organizations did provide the most accurate and appropriate information about the cotton market and its price level.

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60 Fok, “Liberalization and globalization,” p. 4.
This allowed for high efficiency in cotton production. As fundamental economic variables have changed over the past 120 years the manner and location of cotton production has also shifted. The extravagant use of producer subsidies and the slow, incremental reform of the price setting mechanisms both demonstrate the unwillingness by many in the developed world to accept the new reality of global competition. Sadly, it is the taxpayers in the United States and Europe that finances this inertia, but the costs of such decisions are not limited to government budgets – they directly impinge on the subsistence livelihoods of millions of farmers across sub-Saharan Africa, Central Asia and Brazil. If such information were well known in the developed countries one would hope the populace would agree to change such policies. Political advocacy and education is just one of the many possible solutions presently available to help the developing world. We will now look at other possibilities in greater detail.
Chapter 4
Policy Solutions for Growth under Biased Trade

4.1 Domestic and International Responses to Subsidies

The most direct and efficient means to end cotton market distortions is through the elimination of production and export subsidies. If, however, the major subsidizers are likely to continue their direct assistance programmes, then one can expect that other producers will react in the only rational way possible – with subsidies of their own. It is precisely this trend that has been observed in the cotton sector since the fall of the Soviet Union. After World War II most cotton exporters, and many importers, imposed tariffs on the trade of cotton, to protect their cotton and/or textile industry. By 1991 virtually all barriers in the trade of cotton were eliminated.\(^1\) Yet, during this era of liberalization, the United States and European governments maintained the domestic policies affecting production and, by extension, trade.\(^2\) In recent years there have been some signs of improvement, but the lack of real change provides low expectations for expect wholesale subsidy reduction.

In the United States the history of commodity producer support dates back to the Great Depression. The infamous *Farm Bill* provides support to cotton farmers and exporters through five mechanisms: price-based payments, to compensate farmers for the difference between the market and target prices; decoupled or direct payments, paid to farmers based on the historical output of the farm; crop insurance, to compensate for low output resulting from poor weather; countercyclical or emergency payments, designed to help producers in times of lost income because of low international prices; and finally,

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\(^2\) *ibid.*
Step-2 payments, which are countercyclical payments given to exporters and end-users of cotton. As part of the most recent *Farm Bills* the US government contributed, on average, over US$2 billion per annum to cotton producers and exporters between 1997 and 2004. The latest *Farm Bill* proposal decreases the support to areas directly affecting trade, but consistent, direct production support will increase by 66 per cent over the next decade.

In reaction to the 2004 World Trade Organization (WTO) ruling against the legality of the US Step-2 programme, Congress repealed the export subsidy policy. Furthermore, in the latest 2007 *Farm Bill* proposal, the United States Department of Agriculture (USDA) suggested ending the related Step-1 and Step-3 payment schemes. This, however, should not be taken as any sort of concession to the demands of the developing world. In the 2007 proposal, the USDA described the two provisions as having “seldom been used, [having] increased program costs when used, and [as having] had little meaning in the absence of Step 2.” Conversely, since direct production payments are considered to be in the ‘blue box’ category of subsidies (discussed below) rather than the wholly illegal ‘amber box’ category, the USDA’s 2007 proposal suggests an increase in direct payments to cotton production from the current 6.67¢/lb to 11.08¢/lb through the year 2012. Although impinging less directly on exports and price this is not an effective improvement in the fight for fair competition among cotton producers.

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4 *ibid.*
7 *ibid.*
8 USDA, *2007 Farm Bill Proposal*, p. 14, sheet chart. These are the actual levels referred to in footnote 5.
The European Union’s support for the small cotton sectors in Greece and Spain (and the minute market in Portugal) differs from the American model most distinctly in its heavier weighting of set financial outlays as opposed to price-based payments. The extremely high proportional support, already discussed (see table 1 in chapter 3), is further magnified by the inflexibility of payment:

EU cotton producers receive support even in periods of high prices, since the budgetary allocation to the cotton sector must be disbursed. They received approximately the same level of support in 1995 and 2002, for example, although cotton prices in 1995 were twice as high as in 2002.9

As the price of cotton fluctuates, EU farmers profit greatly during periods of price jumps, when most of the world’s other producers try to re-gain their previously lost revenue.

Europe’s cotton support scheme dates back only to 1981, the year of Greek accession,10 but has maintained the extraordinarily high per-unit subsidies on the basis that, as a marginal world producer “the impact of EU production on the evolution of world market prices has been negligible.”11 Indeed, the EU’s support of its small output impacts world prices less than US or Chinese subsidies, but it cannot be considered negligible. The 2003 reforms to the Common Agricultural Policy (CAP) reflect the awareness of this impact. Now, agricultural support is to be decoupled from production levels so as to be less distorting. For cotton, this means that 60 per cent of pre-2003 support will be transferred to the market-friendly Single Payment Scheme applicable to all agricultural sectors. Again, this is an improvement in its own right, but the counter-balance to this change aims at preventing “production disruption in production areas with

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9 Baffes, “Cotton and the Developing Countries,” p. 121.
high economic dependency on cotton,” by granting the remaining 40 per cent of funds to producers on a historical per hectare basis.\textsuperscript{12}

China’s support of its cotton sector, in contrast to the USA and EU, is not done for the benefit of rugged farmers and picturesque rural development. Rather their financial support of cotton is a method of textile production support\textsuperscript{13} – an important source of income, foreign exchange, and investment in the Chinese economy. In line with broader market liberalization, the Chinese government enacted reforms in 1999 allowing market forces to influence the domestic price of cotton. This included setting a reference price for traders higher than the international price.\textsuperscript{14} At only US$0.10/lb., the proportional direct support is not excessive compared to the subsidy response of other developing countries (see table 1 in chapter 3). Of course, like the EU’s low total support, China’s low per-unit support does not absolve its government from the greater obligation to reduce its impact on the international market’s supply and price. However, unlike rural production in advanced dynamic economies, the Chinese government can justify its support of rural incomes on developmental grounds.

Over the next decade elimination of subsidies in the three key markets will not happen. And reduction, it seems, will be done at a painfully slow pace. As these subsidies depress worldwide average prices and increase annual price volatility, other cotton producing countries are left with little alternative other than to provide support, at least in times of low international prices, to their producers. Since the early 1990s elimination of trade barriers, this has been precisely the case (see figure 1).


\textsuperscript{13} In fact, some studies suggest that China may even tax cotton production by 20%. See Baffes, *Cotton: Market Setting, Trade Policies and Issues*, p. 15.

\textsuperscript{14} ICAC, *Production and Trade Policies Affecting the Cotton Industry*, p. 5.
Most of the developing world’s support for cotton production comes from the middle-income economies, which, similar to China, are more concerned with the production and export of textiles rather than their lower value-added inputs. Unfortunately, the textile sector in SSA is not well enough established such that it can consume all of the locally produced inputs. The cycle continues as the lack of higher value-added production limits the governments’ ability to subsidize cotton production. Therefore, Louis Goreaux of the World Bank recommends that the financially weak governments should, in partnership with growers, maintain cotton stocks that can be liquidated in times of need and to provide support farmers’ income while substantially reducing the need for subsidies.\textsuperscript{15}

On the international stage, the CFA was emboldened by the strong case presented by Brazil at the WTO. Brazil argued that US Step-2 subsidies violated anti-dumping regulations. The WTO’s final ruling on the case in September 2004 led the US Congress to eliminate Step-2 payments before Brazil could, in accordance with WTO law, institute retaliatory measures. In a demonstration of the potential effectiveness of international

economic law, the USDA cautioned against other export subsidies since “The WTO’s findings apply not just to cotton, but also other U.S commodities.”\footnote{USDA, 2007 Farm Bill Proposals, p. 76.} As the Brazillian case proceeded swimmingly, Mali, Chad, Bukina Faso and Benin, known as the WAC-4, established the West African cotton sector initiative in May of 2003. Their charge against the major cotton subsidizers was far bolder than Brazil’s limited request. The WAC-4 argued that subsidies by the US, EU and China “cost them an estimated $250 million in export earnings during the 2001/02 marketing season—$1 billion when the indirect effects of these subsidies were considered.”\footnote{Baffes, Cotton and the Developing Countries, p. 126.} A month before the final decision was reached on the Brazil-USA dispute, the WTO ruled in favoured the four African nations in an even stronger decision than that reached in the Brazilian case. The WTO agreed not only with the anti-dumping accusation, but that even indirect impacts should be considered when calculating reparations.\footnote{ibid.}

Despite the strong and unambiguous ruling, the key fault of international law – a lack of coercive force – meant that there was no effective outcome for the WAC-4 nations. It was clear to all parties that the African governments did not have adequate resources to impose the legal retaliation that usually acts as the WTO’s enforcement mechanism. In the end, the WTO absolved itself from any enforcement responsibility by claiming that only subsidies and not compensation fell within its mandate.\footnote{Baffes, Cotton and the Developing Countries, p. 27.} Compensation was left to other organizations, which have even less ability to enforce tough rulings. Therefore, cotton was brought back into the fold of the wider WTO negotiations on liberalization and development. Back under the auspices of the Doha
Development Agenda (DDA) the world’s cotton production could now be categorized under the Uruguay Round’s green, amber and blue boxes of subsidies.\textsuperscript{20}

In the complex labyrinth of national taxes, subsidies and indirect support mechanisms it makes sense to separate those support mechanisms which do not affect trade – the green box – from those that do impact on the international trade of goods and services – the amber box.\textsuperscript{21} Indeed, it was by this very classification that American Step-2 and export credit guarantees were determined to be illegal, as they fell into the amber rather than green box. At the end of the Uruguay Round the developed countries successfully amended the subsidy categories in agriculture to include another group: the blue box. This refers to “any support that would normally be in the amber box, … if the support also requires farmers to \textit{limit} production.”\textsuperscript{22} For the United States this has allowed for a disingenuous interpretation of blue box subsidies as those “that do not \textit{require} production.”\textsuperscript{23} By such a definition the remaining US support measures will not be subjected to immediate withdrawal under WTO law. The United States can now, and did so at the 2005 WTO Ministerial, use the removal of cotton subsidies as a bargaining chip in liberalization negotiations with the already poorly positioned states of SSA.\textsuperscript{24}

The success of the Brazilian case was a ray of hope for other cotton producing and exporting nations, but clearly the same outcome cannot be expected in cases involving the weaker nations of the world. There is some improvement in the subsidy

\textsuperscript{20} Oxfam International, \textit{A Little Blue Lie: harmful subsidies need to be reduced, not redefined}, Oxfam Briefing Note, 21 July 2005, p. 2.

\textsuperscript{21} World Trade Organization, \textit{Domestic Support in Agriculture: The Boxes}. The red box are those subsidies that are wholly illegally \textit{and} must be eliminated immediately, as a rule no agricultural support is counted as a red box.

\textsuperscript{22} \textit{ibid}. my emphasis.


policies of the EU and US as demonstrated by their respective ‘reform’ packages in the most recent CAP and Farm Bill. Yet, these reforms are sluggish at best and will likely remain unchanged until 2011. Indeed, at the last round of the WTO Ministerial meeting, the developed world pledged to withdraw trade-distorting subsidies by the end of 2011, when their current domestic packages come to an end. Given the history of broken promises and intellectually dishonest interpretations of international agreements, developing nations, particularly those with little political clout, must turn to other policies if they are to gain their fair share from the production of primary commodities.

4.2 Optimal Choices under Imperfect Competition

The optimal policy response for governments wishing to increase the income generation of cotton production is largely dictated by factors specific to the country. The level of output, access to the oceans, income alternatives for farmers, and the macroeconomic environment are important variables to consider when attempting market reform. Political considerations must also be taken into account. In particular, the current market policy environment dictates the appropriate rate and method of cotton sector reform. Politically then, the Francophone African Countries (CFA) face very different challenges than their Anglophone counter-parts, the latter of whom have already established a private-sector base for cottonseed processing. However, the reforms in Anglophone Africa began up to a decade earlier than those in the CFA, and therefore provide useful lessons that other reforming governments should heed.

In each of the Anglophone cotton-producing countries previously discussed, the divestment of public monopolies was insufficient for reform, and even went so far as to worsen the situation of cotton farmers. Of these countries, the Zambian cotton market
reforms have proved to be the most successful. The success, however, was not immediate. The parastatal, Lintco, was privatized in 1994, but it was not until 1997 that real change was seen because the three private enterprises segmented the Zambian market, thereby maintaining regional monopsonies.\textsuperscript{25} Thus, even as prices remained strong during this period, there was no price competition among the firms, meaning they passed on little of the price gains to the farming communities. Similarly, in Tanzania, the liberalization of the Cotton Marketing Board in 1994 abolished the input market distribution network. The government “expected that the private sector would fill the vacuum, but this did not occur.”\textsuperscript{26} In both cases, abolishing the inefficient government monopolies included the abolition of the input credit schemes used to support farmers’ initial, seasonal input costs. Once realized, the divergent policy responses led to stark differences in output levels (see figure 6 in chapter 3).

The Zambian government held back from the temptation to intervene in the newly liberalized market. This forced the private sector to keep its revenues from falling by providing credit support mechanisms that kept farmers from exiting the market.\textsuperscript{27} The Tanzanian government, on the other hand, re-entered the market by providing “credit at subsidized rates” and “subsidized input purchases” for the cotton producers.\textsuperscript{28} The former subsidy was soon dropped because of a low repayment rate and the latter has not been sufficient to recover the output levels seen before the price collapse 12 years prior.

\textsuperscript{26} Goreaux \textit{Reforming the Cotton Sector in SSA}, p. 16.
\textsuperscript{27} Brambilla et al., \textit{Farm Productivity and Market Structure}, p. 4.
\textsuperscript{28} Goreaux, \textit{Reforming the Cotton Sector in SSA}, p. 16.
Conversely, liberalization in Zimbabwe, beginning in 1995, did not suffer an initial period of private sector disinterest. The Zimbabwean parastatal was not simply divested, it was sold in its entirety to private interests who renamed it the Cotton Company of Zimbabwe (CCZ or Cottco). The government then assumed all debt of the public monopoly, allowing the CCZ to ‘enter’ the market with the old industry ties but new finances.\(^{29}\) As new companies – especially Cotpro\(^{30}\) and Cargill – entered the market, competitive pricing behaviour began to develop.\(^{31}\) As the overall Zimbabwean market started to worsen, companies began to consolidate to keep profits from falling drastically. When CCZ bought Cotpro in 1999, the conglomerate captured 75 per cent of the market.\(^{32}\) As inflation then hyperinflation gripped the nation, the companies found innovative ways (i.e. bartering) to continue input credit schemes. Eventually output was stabilized (see Annex 1), but surely at a lower level than if the macroeconomic environment was not collapsing.

It would have been difficult to predict that Zambia’s divestment of Lintco into three private enterprises would have resulted in geographic market segmentation, as was the case. It would have been even more difficult to predict that the private sector’s credit support schemes would be so successful in increasing output and productivity as to make buyers illegally outbid one another in the late 1990s. The success of the industry’s ‘outgrower schemes’ attracted new entrants who then tried to increase their market share by offering better prices to producers midway through the season – that is after they had


\(^{30}\) An association established by the (mainly white) farms that produced on at least 25 hectares of land. See Baffes, “Policy Reform Experience in Cotton Markets,” p. 176.


\(^{32}\) Goreaux, *Reforming the Cotton Sector in SSA*, p. 15.
signed a contract with another buyer.\textsuperscript{33} Ironically, the price-competition actually hurt productivity and output by damaging the informal ties between small-scale farmers and the ginning companies. In the Zambian case, the relations were rebuilt through two new trade and credit alternatives, both of which gave far greater voice to the individual farmer and his or her association.\textsuperscript{34} Similar increases in the economic decision-making power of small-scale farmers in Zimbabwe were observed before liberalization and likely added to the short-lived market growth.\textsuperscript{35} Indeed, without direct government control and oversight in liberalized markets, the best check on the private sector’s market power is the collective voice of producers. This is also observed in the more recent reforms in the CFA.

Returning to Bourdet’s study of Mali, Burkina Faso and Benin it is evident that the slow reforms taking place in each of these countries strongly emphasize the strengthening of producers’ organizations. The first round of reforms in Mali and Burkina Faso were specifically designed not to open the cotton sector to market forces, but to insulate producers from rent-seeking traders. In Mali, this meant establishing seasonal prices through a joint “bargaining process involving the CMDT, the state and the producers’ associations.”\textsuperscript{36} Moreover, producers’ associations have gained even more strength as the old functions of the CMDT (i.e. extension, credit management, grading and weighing) have been transferred to the direct control of farmers.\textsuperscript{37} This increased capacity will be of great importance as Mali attempts a new round of reforms.

\textsuperscript{33} Brambilla et al., \textit{Farm Productivity and Market Structure}, pp. 4-5.
\textsuperscript{34} \textit{ibid.}
\textsuperscript{35} Goreaux, \textit{Reforming the Cotton Sector in SSA}, p. 176.
\textsuperscript{36} Boudet, p. 18.
that will open the entire market to competition. The producers’ organizations are an integral “counterbalance to the dominant position of the CMDT” and they can continue in their balancing role against the private sector if state and donor support continues into the medium term.

In a very similar manner, producers’ associations in Burkina Faso bargain with SOFITEX to determine the seasonal price of cotton to be paid to farmers. The Burkinabe state also strengthened the role of farmer associations over several decades by transferring more of the marketing and provisional tasks to their control. During the early 1990s Burkina Faso went a step beyond Mali by selling a 30 per cent stake in SOFITEX to the producers’ associations. As market reforms continue in a much more piecemeal fashion than in neighbouring countries the Burkinabe farmers’ associations are finding “it difficult to secure credits for the purchase of inputs without the guarantee of SOFITEX.” The liberalization of credit and input markets will certainly strain the organizations that have worked so closely with the state in the past, but, as the experience in Tanzania demonstrates, the pain of reform will be far less than that of continued dependency on the government.

Without greater market size it will be uneconomical for sufficient numbers of private businesses to operate ginners to create a fully competitive environment. Given this physical constraint, producers’ organizations are the best method to balance the interests of the farmers against those of the far better financed ginning companies. Of course, one should show caution in finding any single solution to a complex set of problems. The case of URECOS-CI in Cote d’Ivoire provides an excellent insight.

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38 Bourdet, A Tale of Three Countries, p. 19
39 Bourdet, A Tale of Three Countries, pp. 24-25.
40 ibid.
URECOS-CI is certainly the largest and most active producers’ association in the country, claiming to represent 80 per cent of Ivorian cotton farmers.\textsuperscript{41} Hence, when the Ivorian government announced it would sell one of its ginneries to all producers, URECOS-CI demanded an 80 per cent stake – this was rejected by the other producers’ organizations. The negotiations reached a deadlock, but URECOS-CI went ahead and funded the construction of its own ginnery. URECOS-CI has implemented impressive funding schemes to secure the importation of inputs, and has kept itself financially viable even during times of crisis in Cote d’Ivoire. Yet the success of URESCO-CI represents a strange irony whereby a grassroots organization is so successful that it may become, “without appropriate checks and balances, … too powerful” as it enlarges and consolidates its vertically integrated bureaucracy.\textsuperscript{42} The Ivorian case is a rare extreme that should not be taken as reason to fear the rise of producers’ organizations, but it does serve to demonstrate that strong grassroots organizations are not strictly benevolent.

4.3 The International Price of Cotton and Alternative Policies

Casting away the Cotlook A Index is simply not an option for small developing countries, since the international buyers and processors of cotton will continue to use this single international standard into the foreseeable future. One option for producers in all industries is to hedge one’s losses against negative price changes. Of course, this requires relatively free access to capital markets. Even in the United States where the NYCE is both accessible and applicable to producers “fewer than half of cotton [and other] farmers use futures and options.”\textsuperscript{43} This observation is particularly surprising

\textsuperscript{41} Goreaux, \textit{Reforming the Cotton Sector in SSA}, p. 12.
\textsuperscript{43} Sophia Murphy, \textit{Managing the Invisible Hand: Markets, Farmers and International Trade}, (Institute for Agriculture and Trade Policy, Minneapolis, MN, April 2002). p.41.
given the emphasis on market tools in North America generally. The causes are unimportant for the discussion here; the point is that access to financial markets is no guarantee of their use.

Throughout the developing world, and particularly in sub-Saharan Africa, financial market access is greatly limited or simply non-existent. To protect small-scale farmers, domestic protection must be used. Yet, if this is not to lead to the same level of government intervention that oversaw the collapse of commodity markets in the 1980s, then there can be only limited price-insulation for the cotton producers in SSA. We have seen that some government oversight in combination with producer representation can be a fine balance between the extremes of ‘command and control’ and laissez faire economies. However, if donor governments provide no help in establishing an international price-setting mechanism to meet the legitimate demands of the weaker countries of the world, as seems to be the case, a solution must be sought elsewhere.

Given the lack of foreseeable progress in the international negotiations vis-à-vis commodities, the first-best policy option is to capture the profit from value-adding activities at higher tiers of production. How a nation moves from near-subsistence, primary commodity production to the higher returns of industry is not an easy question to answer. Gary Gereffi’s ‘global value chain’ approach provides some insights into how global production and trade operate, and therefore possibilities of movement within the chain. And, Michael Porter’s ‘diamond’ of competitive advantage succinctly presents the four conditional private and public activities that can alter a nation’s comparative advantage. In the next chapter these approaches will be combined to proscribe a general
policy framework that would allow SSA cotton producers to use their comparative advantage of this integral textile input to move toward industrialization.
Chapter 5
The Added Value of Industry – a Theory from Cotton to Textiles

In classical economics, the basic principle is to produce and export the products for which your endowments give you a comparative advantage. With an abundance of cheap labour and productive cotton fields this has been the standard practice for the cotton producers in Africa and elsewhere. But, given the less than promising prospects for serious and sustained economic growth from the production of cotton, sub-Saharan African (SSA) producers must look for alternative development approaches. Virtually all high- and middle-income countries have achieved their success through the industrial advancement of their economy. The same principle surely applies to Africa. So the question is: how can the cotton producers of Africa build an industrial base that is able to bring long-term gains to their economies?

Because these countries have small and underdeveloped domestic markets, growth must be led by the export of manufactures. Furthermore, the history of economic development, from West Europe to East Asia, is a story that places apparel manufacturing at the heart of industrialization.\(^1\) Here, it seems, Africa’s cotton producers have an advantage since they already form an important part of the commodity base in the supply chain for apparel. Capitalizing on this position is far from straight-forward. Thankfully, new theories of created comparative advantage and supply chain operations have recently been developed, which can help explain the nature of the export-led development in the global web of trade. The two approaches to be discussed have largely been applied to industrialized/industrializing economies. This chapter attempts to apply

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these theories to the shift from agricultural-based economies to the bottom tier of industrial-based economies.

5.1 A Combined Theoretical Approach

The two approaches to be applied to primary industrialization are the global value chain (GVC) approach and what is known as the ‘diamond theory of competitive advantage.’ This section will provide an outline of these theories and try to assess their limitations vis-à-vis the industrialization of agricultural economies. The first systematic account of global commodity chain (GCC) analysis – the more generalized predecessor to GVC – was presented in Gary Gereffi and Miguel Korzeniewicz’s 1994 compilation *Commodity Chains and Global Capitalism.* Building on Immanuel Wallerstein’s world systems theory, the authors focus on the power relations between economic actors and emphasize the accrual of profit and surplus at different production points, or nodes, rather than at the broader level of the national economy.

In general, the GVC approach attempts to model the complexities of international trade based on four key dimensions: the input-output structure; the territory covered; the institutional framework (both national and international); and the governance structure of the value chain itself. The first two are important but largely descriptive and, for the cotton market, have been discussed indirectly in the previous three chapters. The institutional framework is highly correlated with the other three dimensions and will be discussed below in relation to the policy recommendations for *industrial upgrading* in

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SSA. The governance structure of GVC is the most unique and innovative aspect of this approach; therefore, it has received the most analytical attention.

When first developed, the GVC framework differentiated between two forms of commodity chains: producer-driven and buyer-driven. As the name suggests, the producer-driven commodity chain is characterized by advanced technology, economies of scale, and high investment costs and is, thus, highly dependent on the manufacturing node (for example, the aeronautical and automobile industries). Buyer-driven commodity chains, on the other hand, have high barriers to entry at the final-product node where control of design, marketing and international brand names ensures the highest profitability. Under such circumstances the actual manufacture of goods is of far less importance than in the producer-driven chains. At the other end there is a high degree of free entry and competition, especially as these processes are ‘out-sourced’ from the lead firms. Clearly the apparel-textile and textile-cotton markets are buyer-driven commodity chains, as are most developing country manufactures, hence producer-driven supply chains will be exempted from this discussion.

The simple dichotomy of producer- and buyer-driven commodity chains severely limits the depth of explanation that one can achieve with GVC analysis. Recognizing this, the theory was expanded to include five systems of governance based on the observed outcome of three nominal variables. The governance structures range from hierarchy, the maximal degree of control by lead firms to the market, where there is little

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6 The term ‘lead firms’ refers to the value chain actor(s) who have the greatest influence on the actions and interactions of firms at other nodes of production. In the apparel market lead firms would be the retail edn stores such as the Gap, JC Penny, Walmart etc. See Gereffi and Krozenswicz eds., Commodity Chains and Global Capitalism.
to no power asymmetry between the nodes of production. The three other governance structures – captive, relational, and modular – lie between these extremes. Gereffi et al. posit that to determine which governance structure is active, one need only look at the relative degree of three factors: first, the complexity of information that is being passed from buyers to suppliers “to sustain a particular transaction”; second, the degree to which the transferred information is codified, thereby reducing or increasing “transaction-specific investment”; and, finally, the capability of the “actual or potential suppliers”. The relationship between governance structures and their underlying variables is neatly summarized in table 1, reproduced from Gereffi et al.

**Table 1: Determinants of Value Chain Governance Structures**

<table>
<thead>
<tr>
<th>Governance type</th>
<th>Complexity of transactions</th>
<th>Ability to codify transactions</th>
<th>Capabilities in the supply-base</th>
<th>Degree of explicit coordination and power asymmetry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Modular</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Relational</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Captive</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Hierarchy</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

There are eight possible combinations of the three variables. Five of them generate global value chain types. The combination of low complexity of transactions and low ability to codify is unlikely to occur. This excludes two combinations. Further, if the complexity of the transaction is low and the ability to codify is high, then low supplier capability would lead to exclusion from the value chain. While this is an important outcome, it does not generate a governance type per se.


The direct development implication of global value chain analysis is known as *industrial upgrading*. Defined as “improving a firm’s position within the chain … this is generally associated with increased competitiveness that allows for the capture of greater

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value-added through the production process.\textsuperscript{10} Known as \textit{intra-chain} or \textit{functional} upgrading, this process involves moving from a governance structure with high power asymmetry to one with greater balance. Empirical applications of GVC to economic development largely focus on this type of upgrading, as it has been well documented in the newly industrialized economies of East Asia and elsewhere.\textsuperscript{11}

Other upgrading is possible through the improved quality of the goods produced (\textit{product upgrading}), greater efficiency of production and coordination (\textit{process upgrading}), or by moving into a new sector by applying the production techniques learned in the original sector (\textit{inter-chain upgrading}).\textsuperscript{12} In each case, the necessary ability for upgrading comes from learning-by-doing at the lower rung of the value chain. In the application of value chain upgrading, from cotton harvesting to textile production, the appropriate type of upgrading could be of the \textit{intra-} or \textit{inter-chain} type. The proper type chosen for analysis depends entirely on where one draws the theoretical boundaries of value chains.

Defining where a value chain begins and ends proves to be a difficult task since, in theory, value chains are broadly defined. However, in empirical applications the effective definition tends to be more narrow. In an attempt to consolidate the terminology of the GVC approach Gereffi \textit{et al.} broadly define global value chains as concepts that:

Highlight the relative value of those activities that are required to bring a product or service from conception through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use.\textsuperscript{13}

\textsuperscript{10} Jennifer Bair, “Global Capitalism and Commodity Chains,” p. 165.
\textsuperscript{11} For example, see Gereffi, “International trade and industrial upgrading”.
\textsuperscript{13} Gary Gereffi \textit{et al.}, “Globalisation, Value Chains and Development,” p. 4.
This definition’s generality reflects, in part, the complexity of delineating modern trade and production processes. Nevertheless, the broad scope hinders the consistency of analysis. Raikes et al. note this limitation: “it is hard to see that there is or can be any one ‘correct’ definition, either length-wise or laterally, considering the degree to which different chains converge and diverge (for example, as joint inputs – oilseed cake and grains in cattle feeds, or separate outputs – cotton-lint and cottonseed oil/cake)”. For this reason the formal, all-inclusive definition differs from the practical application of GVC in empirical studies.

The empirical evaluations of intra-chain upgrading focus on the general principle of ‘organizational learning’ within the value chain. In order to precisely assess helpful and harmful industrial activities, scholars cannot focus on the ‘entire value chain,’ as is conceived in the formal definition. Although not explicit, such analysis restricts value chains to a two-stage market, such as textiles-to-apparel. This is logical, since the adding of more processes to a value chain (i.e. petroleum-synthetic fibres-textiles-apparel) makes the analysis far too complicated for the microeconomic basis in which the GVC framework is grounded. Therefore, the upgrading of raw cotton production in sub-Saharan Africa into industrial textile production approximates with intra-chain upgrading as per the theoretical literature, but has not yet been treated as such in empirical studies.

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16 See Gary Gereffi et al., “Globalisation, Value Chains and Development,” pp. 1-9 for discussion of the theoretical literature. See Dolan and Tewari “From What We Wear to What We Eat,” pp. 94-104 of the same volume, for an example of empirical literature’s omission of agriculture to industry upgrading.
Most of the GVC prescriptions deal not with how to enter a market, but how the “upgrading of local capabilities is critical to sustain existing markets.”¹⁷ We have seen that in the case of SSA, cotton sustainability within the market provides little growth without major policy changes in the more powerful nations. GVC analysis is useful for understanding the power dynamics of disagglomerated international trade, and how firms and nations are able to take advantage of such structures. However, it does not provide much in terms of understanding how firms can initially enter a market in which they would operate with a competitive cost of production. For this we must turn to the theories of comparative advantage.

In neoclassical economics, comparative advantage depends exclusively on the level of endowments, but there are ever more schools of thought which expand on this simple notion. At the forefront of these models is Michael Porter’s ‘diamond of national advantage’. The theory gets its name from the four interrelated elements that provide a rough public policy and business plan approach to developing advantages in a particular industry. *Factor conditions* (i.e. endowments) of infrastructure, human capital, and natural resources no longer determine the flow of trade as in classical economics, but do retain importance, especially in terms of low value-added manufactures. *Demand conditions* in the home market also play an important role, as a dynamic domestic market will signal forthcoming changes in the global market, thereby allowing firms to adjust early to change. *Related and supporting industries*, if globally competitive, allow downstream firms to obtain inputs efficiently. Finally, the *firm structure, strategy and rivalry* determines the ability of domestic industry to compete on a global scale, but this

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is largely specific to the industry in question.\textsuperscript{18} Porter’s application is to modern information-based economies, but the general principles apply to developing nations as well.

For developing nations with underdeveloped markets, the importance of ‘factor conditions’ and ‘related and supporting industries’ will dominate the diamond, as the other two points are usually lacking in such economies. The insights of how competitive advantage is achieved in combination with the broad framework of GVC analysis should shed light on how economies can begin to industrialize – an application of the GVC approach theorists have yet to broach. Therefore, to help the understanding of how economies can first industrialize we will now turn to the history of industry in East Asia.

\textbf{5.2 Evidence from the History of Textile Production}

Industry is greatly diversified and often requires a great amount of industry-specific capital and skilled labour to enter a particular sector. However, apparel manufacture generally requires very low capital-labour ratios\textsuperscript{19} and, as such, is “the typical ‘starter’ industry of countries engaged in export-oriented industrialization.”\textsuperscript{20} Indeed, this has been the case in the world’s fastest developing region, East Asia. Japan, Hong Kong, South Korea and Taiwan were the first major Asian entrants to the textile market and have since entered far more advanced and profitable industries. Their South East Asian (SEA) neighbours entered the textile-export market two to three decades later and are now beginning to move into other, more advanced industries themselves.\textsuperscript{21}

Using the theories discussed in section 5.1 we will see how this region successfully captured the growing textile/apparel market through a combination of factor endowments, appropriate state and international policies, and good timing. In section 5.3 the relevance of this experience will be applied to the cotton producers of sub-Saharan Africa.

The importance of textile manufacture is nothing new in the global economy. In large measure, the first-industrializers of Western Europe gained economic dominance through the production and trade of textiles. The cluster of raw cotton, yarn, cloth, and textiles “fuelled the industrial revolution in Europe and transmitted it to the rest of the world, including East Asia.” 22 The United Kingdom, in particular, dominated textile production through its network of cotton-producing colonies and cloth manufacturers in Lancashire. At its peak in 1882, Britain accounted for 87 per cent of the world’s cotton cloth exports, but by 1933 Japan had overtaken as the world-leading exporter. 23 Japan was well situated between the world’s largest cotton producers, China and America, and was thus able to take advantage of the informal networks between these two giants. Japan was not a major cotton producer, but its proximity to China can be seen as an arms'-length factor condition. As well, Japan maintained “political independence in the nineteenth century, which allowed it to build up its own industry unlike colonized regions.” 24 Japan’s geo-political setting and nationally developed infrastructure were integral to its industrialization. Although necessary, this was not sufficient for Japanese

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entrance and eventual dominance of the cotton textile market.

The proportion of textiles entering world markets declined over this period, from approximately one-half in the late 19th century, to one-third in the second quarter of the 20th century. The industrialization and protectionism of other nations at the turn of the last century ensured Britain’s textile monopoly would not last. The global expansion of textile production was itself a result of a specific technological improvement: the standardization of spinning and weaving.\(^{25}\) Again, Japan was particularly well positioned to enter the industrial sector through the importation of cheap machinery from Europe, and cotton from China. Moreover, standardized machinery meant the global supply chain shifted toward a higher degree of codification. According to the GVC framework, this should bring greater value-added surplus to the producers as the balance between them and consumers increases. Standardization reduced the requisite level of technical knowledge and capital intensity in textile production, thus providing greater comparative advantage to nations with more abundant and cheaper labour.\(^{26}\)

Finally, Japan’s early success in export-led growth was aided by its isolation during World War I. During this period, Japan was a major, but not dominant, textile producer. When textile machinery imports from Europe ground to a halt the Japanese economy had to innovate to stay competitive in textile exports and was “forced to depend on domestic machinery producers.”\(^{27}\) Japan’s rise to the top of textile exportation reflects the demand conditions faced by its machinery production. The large and globally competitive Japanese textile industry continued to rely on domestic machinery in the 1930s, as the textile machinery itself was exported to foreign markets. By 1933 (when

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Japan first overtook Britain in textile exports. Although precise data is lacking, similar market capture in proximate markets seems likely. Hence, the entire region took advantage of the Japanese cotton-textile cluster, enabling the other East Asian nations to enter the market.

By the 1970s, Japan’s competitive advantage in textiles began to decline as its economy grew and diversified into other industries with greater value-added surplus. This economic development, helped in part by American Cold War policy, meant that proximity to raw inputs (i.e. cotton) began to lose importance as the economy became more capital-intensive. In an effort to maintain their global competitiveness, Japanese textile manufacturers contributed enormous foreign direct investment (FDI) to more cost-efficient economies. “By the end of March 1978, Japanese textile FDI had reached some (U.S.) $1.285 million. This investment was concentrated in Southeast Asia and Latin America. It most commonly came in the form of the combined efforts of Japanese manufacturing firms working with Japanese trading companies.”

Thus, the Japanese manufacturing companies maintained ownership of the textile network, while exporting the production capabilities to its less-developed neighbours.

The surrounding countries clearly benefited from the cotton-textile cluster, aided by Japanese FDI. Most countries in the region had some level of textile production, but it was not until the 1970s that the three newly industrializing economies (NIEs) of East Asia – Hong Kong, Taiwan, and South Korea – jumped into the textile market. Each of these economies benefited from a special status in the world that allowed them to develop

28 ibid.
their own form of open and competitive markets. Again, their geopolitical importance to the West during the Cold War provided foreign assistance with little conditionality. As well, the geographical proximity and cultural ties to the cotton-producing regions of southern China and the textile and machinery manufacturers of Japan provided a superb basis on which to expand the regional textile cluster. Moreover, during this time there was a strong trend in ‘out-sourcing’ of basic manufacturing away from industrialized economies. Therefore, the NIEs were extremely well placed to capitalize on the demand for cheaper textile production.

The NIEs competitive advantage in textile production and export is a result of the regional cotton-textile cluster. This cluster is in part natural – China’s enormous and productive cotton output – and, in part, created – Japan’s success in textiles and machinery. The rapid growth that these economies have experienced since industrialization began is less a reflection of these external factors than evidence of the managers’ successful organization and process improvements within the industry. As each of these economies achieved this success they funneled the most basic, labour-intensive processes to their less-developed neighbours. These steps reflect the intra-chain upgrading discussed in detail by Gereffi, and explain why textile production has continued to rapidly expand in Asia. For sub-Saharan Africa, the initial success of Japan provides the most important insights as to how they might successfully enter the textile market. It is to the application of these principles we now turn.

5.3 Industrial Upgrading in Africa – from Cotton to Textiles

The cotton-textile value chain is highly integrated as nearly all cotton is consumed in the production of textiles, and cotton accounts for about 40 per cent of textiles’ fibre

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consumption. Yet upgrading from one node of operation to the other has not been assessed in the GVC literature. Instead the focus has been upgrading within the textile-clothing chain, as it contains several distinct forms of manufacturing. The GVC upgrading literature strongly emphasizes the importance of shifting from basic unit production, known as Cut, Make, and Trim (CMT) to full-package or Own Equipment Manufacturing (OEM) and, finally, to Own Brand Name Manufacturing (OBM). Each step represents an increased level of organizational prowess and market entrenchment. CMT is the lowest value-adding node of textile manufacturing, as it requires only the knowledge and ability to sew and cut fabrics to match them with the requested clothing item. Currently, the African textile industry is “mainly used as a subcontractor to overseas mother companies for cut, make and trim operations.” Moreover, the African textile industry is centred in five countries – Lesotho, Madagascar, Mauritius, South Africa, and Egypt – that account for over 83 per cent of Africa’s textile exports to the EU and US markets. None of these countries are major cotton producers and have, thus, been left out of the analysis in previous chapters.

Global value chain theory predicates industrial upgrading on “organizational learning to improve the position of firms or nations in international trade networks.” But, in the case of cotton and textiles, little organizational knowledge is passed on from textile producers to the ginners of cotton, since each node requires vastly different forms of production know-how. In addition, the cotton-textile chain is of the ‘market’

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32 OEM is where the firm is able to make the clothing and knows how and where to source the inputs for the given segments of the apparel market. OBM occurs when the firm actually engages in the end-user marketing. Gereffi, “International Trade and Industrial Upgrading,” p. 38, 52.
34 Hurreeram and Little, “International Apparel Trade,” pp. 137-8, tables III and IV.
governance structure, implying information sharing is of the most basic type – price and quantity. Both of these factors severely limit the upgrading recommendations GVC analysis can provide. The competitive nature of the cotton and textile markets, as well as the wide technological divide between the two operations, essentially nullifies the ability of cotton ginners to learn about the organizational practices of the more profitable textile and apparel market. One important benefit of the market governance structure for African firms and nations entering the textile market, is that they do not have to overcome the power asymmetry found in other value chain governance structures.

There remain obstacles in the institutional framework that governs textile production and trade. Textile manufacturing has been a highly regulated, if globally dispersed, industry since the Multi-Fibre Agreement (MFA) was first introduced on 1 January 1974. The MFA was designed to promote the “liberalization of trade … while avoiding any market disruption in the [European Economic] Community.” The measure was, of course, ‘temporary,’ to be eliminated in the future, but not “as long as the conditions of competition prevailing in world trade remain[ed] abnormal.”38 Apparently, markets remained ‘abnormal’ until the end of 2005 when the MFA was completely phased-out. The trade of textiles, however, was not brought under the auspices of GATT/WTO regulation, instead a new and special arrangement was created, called the Agreement on Textiles and Clothing (ATC).

36 The ability to codify transactions is clearly high since all that is required in cotton contracts is the quantity and quality of the lint. Similarly, the transactions are far from complicated as they require only the shipment of undamagable cotton lint.
Liberalization of the textile and clothing market was highly anticipated and long-awaited. However, it was not to be, the promised panacea of open trade. The ATC agreement was “a masterpiece of watering down and postponing” as the developed countries were able to include a much wider range of products than was originally intended.\textsuperscript{39} This was done while putting off any significant reforms until the final phase of the agreement in 2005, all the while protecting the developed countries’ most sensitive products.\textsuperscript{40} Nevertheless, the ATC does eliminate the unfair import restrictions in the European and, to a lesser extent, American market. Increased competitiveness should allow the more cost-efficient producers to capture a greater market share, making the market operate in an optimal and equitable manner.

Surprisingly, the majority of trade in textiles and clothing has been “regulated through multilateral agreements mainly within and between trade blocs” rather than through the bilateral framework of the MFA.\textsuperscript{41} Thus, access to a particular export market depended largely on the trading nations’ membership to a particular regional grouping. Such special treatment is largely eliminated under the ATC framework. Before the MFA phase-out, and continuing into the era of the ATC, there have been several avenues of preferential market access for select African textile producers. The EU-ACP Cotonou Agreement provides “member countries duty and quota free access to the EU market.” For the American market, the 2000 African Growth and Opportunity Act (AGOA) “provides for duty free and quota free access to the US market for textiles and apparel products among others, made in sub-Saharan African countries” until 2008.\textsuperscript{42} Such

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\textsuperscript{39} Spinanger, “Textiles beyond the MFA Phase-Out,” p. 458.
\textsuperscript{40} ibid.
\textsuperscript{41} Hurreeram and Little, “International Apparel Trade,” p. 134.
\textsuperscript{42} Hurreeram and Little, “International Apparel Trade,” p. 136.
\end{flushright}
preferential treatment was envisioned as a mechanism for textile market development, but has so far failed at providing long-term market development solutions to the majority of SSA nations.

Preferential treatment packages are not ineffectual *per se*, but in the African context they fail to support nations trying to *enter* the textile market. Rather, the packages benefited the existing textile-exporting countries.\(^{43}\) Furthermore, these agreements sheltered the African producers from direct competition with other developing nations. Now that the market has been liberalized under the ATC, textile production in SSA will be among the hardest hit.\(^{44}\) This situation, however, cannot be blamed on other states’ policies. The few African countries that have been able to gain a significant foothold in the global textile market “have considerable reliance on [the] export of apparel products but have little or no apparel base (raw materials availability, research and development, fashion centre, branding etc.).”\(^{45}\) Unlike their East and South East Asian counterparts, the African producers have not managed to upgrade their production facilities to move beyond the simple sewing of fabrics and into the OEM tier of supply. The failure to move beyond CMT operations can be appropriately analyzed under the existing GVC literature.

Returning to the topic at hand, we see that the international institutional framework supports a highly competitive environment, which negates preferential market access as a useful development policy tool. Therefore, to enter and sustain within this market the African producers of cotton must look to more fundamental factors that they


\(^{44}\) Hurreeram and Little, “International Apparel Trade,” p. 139

\(^{45}\) *ibid.*
can support with the appropriate policy framework. Here, Porter’s diamond model provides useful policy insights for SSA countries by highlighting the importance of industrial clusters in the creation of competitive advantage.

For the cotton producing countries of SSA it would seem logical that they would have a natural advantage in textile production based on their factor conditions. They have huge amounts of under-utilized labour and low-cost, high-quality cotton production. However, such a simplistic notion is what led the East and Southern African producers to develop “textile industries that were being subsidized at the expense of cotton.” As we have seen, this was followed by collapses in both the cotton and textile markets. Moreover, the cotton sector is a major employer in SSA and should not be sacrificed for the potential development of the textile industry. Finally, most African governments cannot afford to subsidize the high capital investments of industrialization on their own, hence foreign investment is integral to any potential upgrading policy.

In reality this ‘natural advantage’ is a misnomer: the difference in the cost of transportation of cotton lint versus finished cloth is negligible because there is very little weight lost and volume gained in the transformation. Therefore, in the textile market, proximity to the primary input is of little productivity advantage. Similarly, proximity to the final market does not seem to provide much benefit as all of the major textile producers in SSA are in Southern and Eastern Africa – the furthest possible distance from the US and EU markets. Ironically, the factor conditions, although appearing to be the most important contributor to SSA’s competitive advantage, are of little, if any, benefit to industrial upgrading in the subcontinent.

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Of the four elements working together to create national competitive advantages the *firm structure, strategy and rivalry* appears to be the least applicable in the SSA cotton-textile value chain. Succinctly, the markets are too small to support enough firms for a competitive environment to prevail. High start-up costs are always an obstacle to market entry, but because there is so little infrastructure in SSA the initial costs are even higher than otherwise. Although rivalry may be restricted one can still learn from the successful strategies and structures employed elsewhere. Peter Gibbon’s account of the supply response under AGOA found that:

> increases in [African] production for the US market are mainly accounted for by firms that are Far Eastern-owned ...[and] enterprises of the ‘Far Eastern’ type seem to be able to produce profitably for the US market even in the absence of qualifying for the trade preferences conferred by AGOA.\(^{47}\)

Indeed, the SEA-owned textile firms understand what is required to produce within a developing economy, owing to their growth experiences at home. Therefore, the African cotton producing countries must attract manufacturing FDI from East Asia. The inflow of investment funds should surmount the limited infrastructure and provide African employees with the opportunity to learn about the organizational networks of the textile trade, which could later be used to upgrade even further.

Finally, there are the diamond points of *demand conditions and related and supporting industries*. As stated above the African textile producers are expected to fail in the more competitive environment introduced through the ATC framework because the producers “have little or no apparel base.”\(^ {48}\) A parallel case highlighting the importance of dynamic domestic demand can be found in the industrial development in India. India’s textile export performance has mushroomed since the late 1980s, as some firms


\(^{48}\) Hurreeram and Little, “International Apparel Trade,” p. 139.
“acquired valuable export-relevant knowledge by catering to the demanding, high-end segment of India’s large domestic market.”

In the SSA context only South Africa has the wealth to form a significant high-end market. Yet, South Africa already accounts for 90 per cent of sub-Saharan Africa’s industrial output. If neighbouring countries were to enter this high-end consumer market they too could gain the benefits of supplying the fickle haute fashion market.

Access to the middle-income economy of South Africa would create an excellent apparel output base, which could be balanced with preferential access to the raw material market of cotton on the input side of the value chain. The preferential access shared amongst African nations would be a wholly different experience than that under AGOA and EU-ACP schemes. The challenges of working in each other’s markets would encourage the acquisition of technical knowledge more than participation in well-established value chains ever could. This could be done without relying on less competitive production processes – as was the case under AGOA – since most export revenue would still come from the US and EU markets. Over time, the industry connections could be strengthened to support textile production to a far greater extent in each of the participating economies.

The small, isolated markets of SSA are a constant limitation to large-scale investments, which in turn limit the financing of public infrastructure. SSA, as a whole, has all of the elements necessary for a strong cotton-textile-apparel cluster. However, each economy, on its own, has little to offer the international market. To this day the remnants of export-orientation toward the colonizing states are still present in SSA. It only makes sense, in the short-run, to continue to aim towards the market that provides

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49 Dolan and Tewari, “From What We Wear to What We Eat,” p. 96.
the foreign exchange earnings that are so desperately needed. In the long-run, consolidation of a commodity-industry cluster seems to be the best method for sustained growth in sectors where there is a decent value-added surplus to be captured. Regional integration is a difficult process, but until African countries can successfully work together few outsiders will take the lead.

To reiterate, SSA cotton producers do have the ability to enter the textile industry, but not because of their ability to produce cheap, high-grade cotton. Upgrading will come from the creation of a competitive environment that enables textile manufacturers to benefit from producing in Africa. The competitive environment can be built through supporting each of the diamond points through targeted policies: first, policies that can attract SEA textile FDI; second, policies that can open intra-African trade between clothing consumers and producers; and, third, through the long-term commitment to strengthen regional industrial partnerships over the historical ties to the European and American markets. By focusing on the elements of competitive advantage that do not currently exist the makers of public policy in Africa will allow the market to confer an ever greater share of productive capacity and surplus to their economies.
There are a great many barriers that limit the economically efficient revenue which should be captured by cotton producers in sub-Saharan Africa and other developing economies. The continual use of production subsidies in the United States, the European Union and China is undoubtedly the greatest source of the current distortions found in the cotton market. There does seem to be some positive steps forward as the US and EU come under increasing scrutiny for their hypocritical trade policies. The greatest difficulty in advocating for the elimination of agricultural subsidies will continue to be the developed world’s tying of agricultural liberalization in their markets to the liberalization of the goods and services markets in the developing world. Perhaps it is necessary that we allow the developing world to compete on a more level-playing field in the agricultural sector before we insist that they freely compete in the highest echelons of the modern economy.

The existence of oligopsony power at the international level could not be determined. A more thorough analysis by organizations that have, or could gain, access to firm-level data would aid attempts to understand international trade regimes and the power that multinational cotton firms can exercise. Until then, we are limited to analyzing a small selection of ginning firms in the developing world. The positive finding of this study is that national oligopsonies should not be denounced as preying upon the weak. In circumstances of small, poorly developed economies any firm’s participation can be helpful. Yet, this is not to say that privatization in such markets should proceed without care. The government can play an important role in constraining uncompetitive markets not through direct intervention, but through the financial,
technical, and institutional support of producers’ organizations – which are the best voice for the many dispersed, small-scale producers.

Finally, the outdated price setting mechanism of Cotlook Ltd. presents a difficult market-distorting factor to overcome. There have been several attempts, none successful, to replace Liverpool’s price setting mechanism. However, replacement may not be the answer. In 2003 Cotlook did update its basket of c.i.f. prices at ports of entry to include Far East cotton import locations with the traditional Northern Europe ports. If greater pressure was brought to bear on Cotlook it could eventually agree to revise its policy of using intended prices, and accept a slight lag in their price setting mechanism by taking the basket of prices after transactions are completed. If this could be done then there would be no danger of the price index leading the trade activities in the cotton market.

There is the strong possibility that there may be no improvement in any of these areas, implying that cotton producers in SSA would continue to face a depressed market price and output level. Chapter 5 attempted to assess the possibilities of moving beyond the production of primary commodities by utilizing the comparative advantage of input production to enter the next tier of production – textiles. For textiles and clothing, at least, the sad reality is that fibre production does not provide upgrading benefits. However, all is not lost. By applying new theories of competitive advantage within a value chain analysis it was shown that through the creation of textile production clusters the cooperation of several SSA states could bring about industrialization. Pan-Africanism has been around since Nkrumah but has yet to lead to any truly effective economic arrangement. Too often African states join a particular group only to fail to follow up on the commitments of membership. If industrialization were the primary goal
of a regional integration scheme it would be difficult for any African leader to deny active participation. The greatest challenge, however, would be to ensure that the benefits of any industrialization are evenly distributed among the member states. A common African market is within reach, but it will not come easily.

As stated at the outset, cotton provides acceptable proxy for other commodities. The case of cotton is especially applicable to other agricultural commodities as many are traded relatively freely but face unbalanced competition from the subsidized production in wealthier nations. The limit, of course, is the much higher quality standards imposed on food products as compared to fibres used solely for manufacturing. However, the different levels of quality found in other agricultural commodities, from flowers to onions, implies that producers can upgrade within those value chains without having to enter an entirely separate type of economic activity. Indeed, product upgrading in cotton is of little use considering the highly integrated prices of different qualities of cotton fibre.

The most important finding in the context of developing countries is the importance producers’ organizations can play in balancing the market power of internationally financed processors and traders. This is applicable to almost all agricultural commodities since most are produced by small-scale farmers and sold to multinational companies. The comparison ends with primary commodities that do not come from the farm. The extraction of metals, precious gems, and oil is very important in many developing countries, but falls into a very different type of value chain in which the extraction process itself tends to be more directly controlled by the lead firms. Here, some parallels may be drawn between the support of the producers’ organizations, but
this is limited and may be unviable if the lead firms’ production control and importance to the national economy bar intervention.

For all developing economies the importance of creating clusters of competitive production is undeniable. Future research in this area would be very interesting if it were to compare the best cluster choice for producers of different primary commodities. As well, future research in the creation of industrial capacity would be improved by a greater focus on the historical circumstances under which second- and third-tier industrializers captured this market. Similarly, the application of GVC analysis to more separated nodes of production could greatly strengthen the theoretical basis of this approach. Integrating theories of industrial cluster development with value chain analysis will provide a useful avenue for determining the policies best suited for the upgrading of developing economies.
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