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# Food Research Institute Studies

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# Food Research Institute Studies



Editor: Carl H. Gotsch  
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**Vol. XXII 1993 No. 3**



**William O. Jones, 1910–1993**

## DEDICATION

William O. Jones, emeritus professor and former director of the Food Research Institute, died on June 17 in Palo Alto. It is fitting that this last issue of *Food Research Institute Studies* be dedicated to him. Bill valued good writing and was always a promoter of this journal, which first appeared in February 1960. Bill saw the journal as a natural outlet for Institute research and a working and learning tool for young staff. New researchers and writers were given the opportunity to organize their work for publication under the keen scrutiny and tutelage of an experienced editorial staff.

The second issue of *Food Research Institute Studies* opened with Bill's article, "Food and Agricultural Economies of Tropical Africa." The journal included a number of his finely written articles over the years, among them "Environmental, Technical Knowledge, and Economic Development in Tropical Africa" and "Turnips, the Seventh Day Adventist Principle, and Management Bias." From 1970 to 1975, he served as editor of *Studies*. Thereafter, he was an always-eager consultant to the journal, offering sage advice on matters ranging from substance to form to commas. As an editor and writer, Bill was simply the best.

Following are two tributes given to Bill Jones at a memorial service at Memorial Church, Stanford University, on July 26, 1993, by Walter Falcon and Scott Pearson, the two Institute faculty members who have been director since Bill stepped down in 1972.

LWP



### Remarks for the William O. Jones Memorial Service

My name is Wally Falcon. Bill Jones and I were good friends and close colleagues for the past 20 years. I succeeded Bill as Director of the Food Research Institute, and he was one of greatest mentors anyone could possibly have had.

All of us here today have our own memories of Bill. My recollections will no doubt stir additional personal memories from each of you. Because William O. Jones had such a major impact on me—personally and professionally—I feel especially honored to have been asked by Kay and his family to say a few words about him this afternoon.

Bill was born in Nebraska, and he and I shared mid-western farm roots. However, I did not have the chance to know him until the early 1960s—when he was already a distinguished economist and Africanist.

Bill's historical knowledge of the African continent was immense. One of the things he taught all of us was that economic development could not be talked about sensibly without a deep historical understanding of the region under study. Even his classic volume about a staple food, *Manioc in Africa*, is placed in historical context. I believe, by the way, that this particular volume held a special place in Bill's heart. He could tell endless stories about it. He would regale friends with the story about a leading review of the book that contained a typographical error, causing the title to read "Maniac" in Africa. He could also be emotional—dare I say stubborn?—about it. I think he really never quite forgave Scott Pearson and me for using the word "cassava" (the more popular name) rather than "manioc" (the only "proper" name, according to Bill) in the title of our later volume.

In addition to his work on commodities, Bill made lasting contributions in

two other areas; he was an author well ahead of his time in both. Perhaps his single most important article was “Economic Man in Africa,” which was published in *Food Research Institute Studies*, a journal that was especially important to him. This essay helped change the way the entire profession thought about smallholder farmers in Africa. Bill’s views on the rationality and price responsiveness of African farmers were radical in 1960; 30 years later, his views have become the conventional wisdom. He also carried out pioneering work on marketing. Early on, he advocated private markets—the privatization we hear about today—although he was appalled by that particular word. Throughout his career he remained sharply critical of many government interventions into both food production and marketing.

Many of us applauded when Professor Theodore Schultz at the University of Chicago was awarded the Nobel Prize in economics. We knew, however, that significant groundwork for Schultz’ achievements in agricultural development had been laid by W. O. Jones. Indeed, a quotation from Schultz’s Nobel Lecture is extremely fitting today. Schultz said:

“Most of the people in the world are poor, so if we know the economics of being poor, we know much about the economy that really matters.”

Bill Jones’ economics really mattered, and his work mattered because it was firmly rooted in numbers, facts, and history. Real-world relevance was important to him, and he was very proud of the empirical tradition that permeated all of the work of the Institute, including his own.

Bill Jones also worked hard to improve the scholarly contributions of others. He was the best editor I ever knew. He liked to edit, and his blue pencil was legendary. (No one claimed publicly that Bill edited his incoming mail—a comment made about one of his predecessors. But several of us suspected that he did so when no one was watching!) The clarity of his thought and the sheer quantity of his editorial commentary sometimes were devastating to writers. (I say this with painful personal knowledge.) His editing also created a “Jonesism,” known universally whenever Institute colleagues get together. If a paragraph were truly awful, Bill would draw one of his famous squiggly lines on the side and write, “Oh, my.” To be given an “Oh, my” was the worst fate that could befall a writer. And “Oh, my” is still the expression of choice for all of us who want to refer to anything that is utterly hopeless.

Bill was also a builder of institutions. He took great pride in his role in reshaping the Institute from its low point in the mid-1960s. He was a builder of both physical facilities and faculty.

Bill taught well in the classroom, but he was exceptional as a mentor. He believed deeply in the apprentice system for training scholars in applied economic research. Care, integrity, thoroughness, and clarity—plus the idea that research is not research until it is published—were some of the qualities he passed on to younger faculty and to his students.

Bill loved a good argument. Which side of an issue he was on was often less important to him than having a spirited interchange. He was quite capable of switching sides in a debate, which was occasionally a source of consternation and often the source of amusement to his colleagues who gathered regularly with him for 10 o’clock coffee. He loved good stories, especially about Africa, fishing, and the foibles of the Stanford administration. He had an unusual capacity to recall beautiful places in California. He enjoyed the out-of-doors, and he seemed to draw much that was spiritual from nature and natural beauty.

Let me close with one more personal comment. Bill was a great director. He was also a great ex-director. That may seem like a strange comment, perhaps made more clear if I note my own recent retirement as director of the Food Research Institute. Bill was reserved, wise, and incredibly productive in his later years. He let me make my own mistakes as director without interference, yet he was always there—whenever I needed him for whatever reason. Therefore, I too was one of Bill’s boys. In that sense, I share with his sons, Steven, Peter, and Brian, much that was so superb about Bill Jones.

William Orville Jones was a great man. His family will miss him and so will I. And so will Stanford and the world.

Walter P. Falcon



### **William O. Jones: A Mentor of Scholars**

For 25 years, I was Bill Jones’ colleague and friend in the Food Research Institute. Bill was the most influential force in my early professional career. He was my mentor, as I strove to emulate his successes as a researcher and teacher of food and agricultural economics and as a cross-disciplinary student of African affairs.

I wish to share with you some personal thoughts about why Bill Jones was such an extraordinarily successful mentor—to me, and to scores of others in the Stanford community. In doing so, I hope to summarize what I believe will be Bill’s most important professional legacy. Wally Falcon has reminded us of Bill’s classic accomplishments as a researcher. But I will always remember Bill Jones as, first and foremost, a mentor of scholars.

When I arrived at Stanford in September 1968, Bill Jones sat me down and told me, “Scott, if you want to become a successful agricultural economist, do not ever lose sight of the three components of good scholarship—to think clearly, observe carefully, and write well.” For the next quarter of a century, Bill patiently mentored me to improve my abilities in all three of these facets of empirical scholarship. Allow me to offer three anecdotes to illustrate Bill’s incredibly insightful techniques as a mentor.

Early on, Bill taught me that the key to thinking clearly for an empirical researcher is to develop a convincing story line. He often said, “Get to the point and eliminate the frills.”

In my first year in the Institute, Bill suggested that I convert my doctoral dissertation into a book. I was delighted, but soon chagrined when he said, “Of course, you will have to rewrite the entire manuscript and thread a clear story line through it.” Under Bill’s guidance, the revision slowly took shape. Meanwhile, I decided to become creative and insert a new chapter on Nigerian politics into the manuscript. After Bill read that chapter, I received my first “Oh, my!” from him. Fortunately, I did not then recognize the full significance of that notation. Bill gave me a reprimand but also a nugget of wisdom when he said, “Don’t ever confuse politics with economics.” Thanks to Bill, that naive chapter did not go into the book. Because Bill was thinking clearly, my first book has a much clearer story line. And I learned something from that episode.

Bill Jones loved ideas. But he abhorred unsubstantiated claims. Bill consistently counselled everyone to go to the field, observe carefully, and obtain high



quality information. He would often ask, "How can you expect to tell a convincing story if you don't have the facts to back it up? Where is your evidence?"

In late 1976, when Bill was a spry 65-year old, he and I travelled to West Africa. We were visiting a doctoral candidate in the Institute, Roy Southworth, who was beginning a year of field research in Atebubu, Ghana. Roy was studying the marketing of food crops, focusing mainly on African yams. Shortly after Bill and I settled into the Atebubu Rest House, Roy came to Bill with a sheepish confession. With considerable embarrassment, Roy said, "Bill, I haven't been able to find the wholesale market for yams." Bill countered, "Roy, you have to get up earlier in the morning." Roy hesitated, not knowing whether he should take this advice literally or metaphorically. "But I go the yam market every day about 6 AM," pleaded Roy. Bill responded, "Go at 5 AM tomorrow." And, sure enough, Roy located the wholesale market for yams, which consisted of a group of merchants dealing over coffee and tea at a makeshift cafe in front of the main yam storage area between 5 and 5:30 AM. With the help of Bill's long experience as a keen observer of African food markets, Roy was able to study his yam traders carefully and to write an excellent doctoral dissertation. High quality, first-hand information supported a convincing story line. The mentor had launched another young scholar. I watched this process carefully and tried to learn how this master played his hand.

More than anything in his professional life, Bill Jones was a writer and an editor. To my mind, Bill set the standard in the agricultural economics profession for clarity of written communication. He was the only person I have known in the profession who outlined all of his writings with topic sentences for each paragraph. This man knew what he wanted to say and how best to write it. When I asked Bill once why he valued clear writing so highly, he responded, "A muddled message falls on deaf ears. Bad communication ruins a good story based on quality information." Bill wrote beautifully himself, and he greatly improved the writing of his colleagues and students by commenting on and editing numerous drafts of papers.

During my fourth year on the Institute faculty, Bill Jones asked me to give him critical comments on a first draft of a book manuscript that he had just completed. Full of eagerness and diligence—plus the respect that any sensible nontenured professor has for the boss—I spent several days dissecting Bill's manuscript. With great glee, I found a way that Bill might strengthen his argument by reordering much of the first 40 pages. Then I suffered a crisis of confidence. How could I suggest to Bill, of all people, that I could improve his writing? That would be akin to an apprentice painter suggesting to Michelangelo that he change his color scheme. After much agony and with great trepidation, I plunged ahead and offered my editing suggestions to Bill. To my great relief, Bill was delighted, saying, "You know, you're right. I could improve the clarity of my story line in the way you suggest. Thanks so much for the helpful ideas." That book, on the marketing of staple foods in Tropical Africa, went on to become a classic in its field. It is still, more than two decades after publication, the best book written on that topic. In that instance, Bill taught me that good mentors open two-way dialogues to improve the clarity of communication. The man was always a learner as well as a teacher.

Bill dispensed wisdom with confidence, humor, and humaneness. He was nearly always right and rarely rigid. The story line of his professional life reflected quality and clarity. He thought clearly, observed carefully, and wrote well. For all these reasons and many more, Bill Jones was the quintessential mentor of scholars.

Scott R. Pearson

# FOOD RESEARCH INSTITUTE STUDIES

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William A. Masters\*

## THE SCOPE AND SEQUENCE OF MAIZE MARKET REFORM IN ZIMBABWE†

The study of food markets in Africa owes much to the Food Research Institute and its *Studies*, particularly through the early work of William O. Jones (e.g., Jones, 1960, 1972, 1984). The research pioneered by Jones and others shows clearly the high costs of excessive state controls, whether inherited from colonial governments or imposed after Independence.

In recent years, many African governments have sought fundamental reforms in their food market interventions. A cornerstone of most reforms is deregulation, intended to increase competitive pressure on marketing costs. Comparative-static models show the potential welfare gains from greater competition, yet give little guide to the dynamics of the reform process. Policymakers might wish to have a more competitive sector in the longer run, but be unwilling to accept the short-run adjustment costs of a sudden liberalization. And deregulation might destroy the state's marketing institutions, leaving no instruments with which to make even limited interventions.

Zimbabwe's maize market reform program is in many ways an archetypal example of this dilemma. The government's Grain Marketing Board (GMB) is the oldest food crop marketing board in Africa, founded in 1931 as the Maize Control Board (Jones, 1987, p. 378). Like many other boards, the GMB has a legal monopoly/monopsony over all international trade and many domestic marketing functions. It has a nationwide network of depots, staffed by several thousand employees, at which it is required by law to buy and sell at uniform government-set prices. The board is financed directly by the government, which subsidizes its deficits or taxes its surpluses.

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\* Assistant Professor of Agricultural Economics, Purdue University, West Lafayette, Indiana.

† Thanks are due to Tobias Takavarasha, Share Jiriengwa, Thom Jayne, Phil Abbott, and Scott Pearson, for stimulating discussions and helpful comments on earlier drafts of this paper.

Relative to similar agencies elsewhere, the GMB has been unusually effective in fulfilling its legal mandate—buying and selling at announced prices throughout the year, maintaining fiscal solvency, and defending a very large market share. The GMB's relative success has enabled it to postpone reforms longer, and to contemplate a more gradual reform process, than marketing boards elsewhere that have been forced into sudden reform by bankruptcy or loss of market share. But reform is coming to Zimbabwe nonetheless, as the costs of parastatal marketing have gradually become apparent. The board's maize operations required government subsidies of Z\$45-95 million (US\$30-90 million) annually in the mid-1980s. The board's operations also have come under scrutiny for possibly worsening income distribution as well (e.g., Masters and Nuppenau, 1993).

The government announced its intention to reform grain markets in its 1991 structural adjustment program (GOZ, 1991). Change was made all the more urgent when, in the first quarter of 1992, import delays after an exceptionally severe two-year drought caused the GMB to run out of maize. Since private stocks were also low, very little grain was available anywhere. Many people were forced to reduce consumption and to use substitutes such as bread and potatoes. This crisis caused great hardship. But the drought exposed previously hidden weaknesses of the marketing system, revealing promising new directions for maize market policy.

This paper analyzes the performance of the Zimbabwean maize market and presents a strategy for reform. The proposed strategy is designed to fulfill government objectives through increasing competition by deregulating private trade while making the GMB itself a more competitive marketer. Conclusions are drawn about grain market reform in Zimbabwe and its implications for other countries.

#### MAIZE MARKETS IN ZIMBABWE: HISTORY AND BACKGROUND

Since white settlement began a century ago, maize has been Zimbabwe's dominant food crop and a major item in the country's trade.<sup>1</sup> The crop was one of Rhodesia's first significant exports. Between 1909 and 1932, export quantities grew at the phenomenal annual rate of 18.8 percent, driven by demand for white maize in England's starch industry.<sup>2</sup> The global depression of the 1930s put an abrupt stop to the maize boom, and migration during and

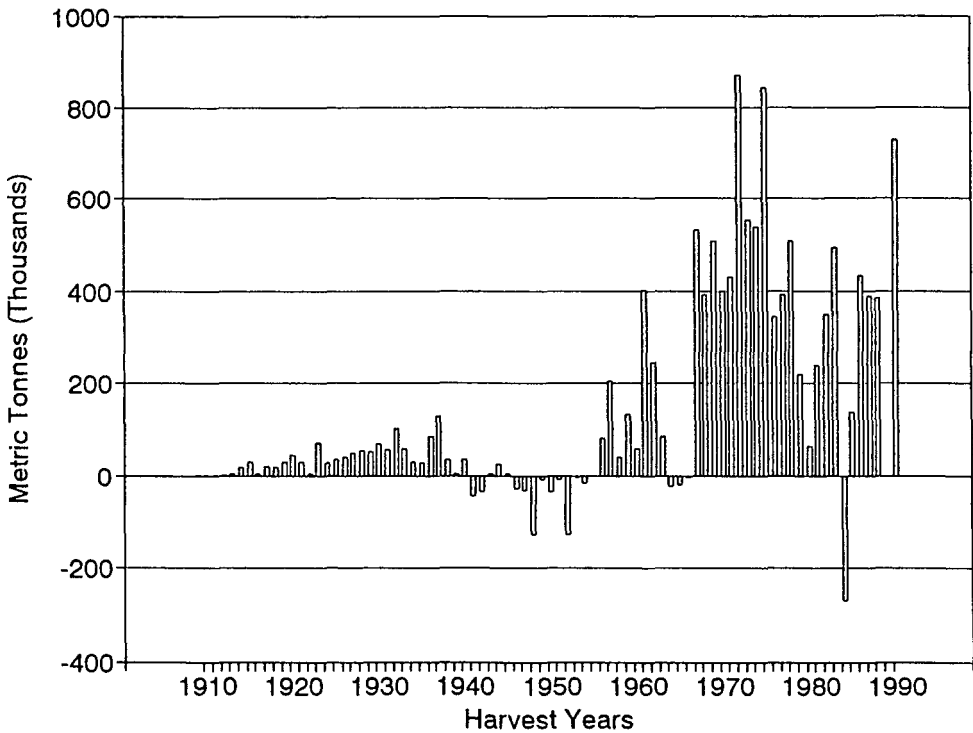
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<sup>1</sup> The material in this section is drawn largely from the author's Ph.D. dissertation (Masters, 1991, chapter 5).

<sup>2</sup> Historical data are drawn from Weinmann (1972, 1975). Growth rates are author's calculations, using least-squares regression. Exports grew from 1,000 to a peak of over 100,000 metric tons in this period. At the peak of the boom in the 1920s, one-quarter to one-half of marketed maize was exported.

after World War II turned the country into a frequent importer. Rapid export growth resumed in the mid-1950s, only to be halted again by civil war in the 1970s. The 1980s showed mixed performance, and the crop's future is uncertain. Whether Zimbabwe will return as a major exporter, will fall into uneasy self-sufficiency, or will become a regular importer depends in large part on the efficiency of the marketing system in mediating between production and consumption.

Chart 1.— Zimbabwe Net Maize Exports, 1909-90



Source: Calculated from data in Weinmann (1972, 1975) for 1909-50, Muir-Leresche (1984) for 1951-77, and CSO *Statistical Yearbook and Quarterly Digest of Statistics* (various issues) for 1978-90. Data for 1989 are missing.

*The Grain Marketing Board Before and After Independence*

Until 1931, Zimbabwe's maize market developed with little intervention. When the marketing board was founded, it was initially a temporary measure to protect farmers from the export price collapse of the Great Depression. The board's domestic monopoly enabled it to keep domestic prices above and

more stable than trade parity, without explicit subsidies. The board restricted access to the high-priced local market through quotas, which were allocated preferentially to the white settlers on smaller farms. Production from Africans, along with that of settlers on the largest farms, was channeled into an "export pool" at lower and more variable prices.

In 1941, the country became a net importer of maize. The quota system was abandoned, and other means were used to separate grain sales from white settlers and black natives. For example, after 1948 a 10 percent Native Development Fund levy was imposed on all African maize sold to the board. But the most important distinction between white and black farmers may have been geographical. Whites had developed their large-scale commercial (LSC) farms primarily along the more fertile, better-watered, tsetse-free highlands, where they established railroads and towns. Blacks were forcibly moved onto smallholdings in less fertile, isolated "Native Reserves," now known as communal areas.

The marketing board's practices reinforced the black farmers' geographic isolation. The board built its depots along rail lines within the main settler farming areas in the north of the country, near the capital city. With favorable conditions and much land, white farmers in these areas easily provided the bulk of the board's intake. Almost all of this grain was sold to industrial millers in urban areas, who then distributed packaged flour to cities, towns, mines, and rural areas around the country.

The monopoly/monopoly position of the board was protected by a ban on private trade anywhere outside of the reserves. The ban included all major highways, railroads, and towns and thereby prevented the development of private trading networks and wholesale markets capable of competing with the board. Without much direct trade between producers and consumers, even in remote areas most net sellers had little choice but to deliver to the GMB, while net buyers had little choice but to buy industrial flour. This system put a large gap between selling and buying prices, giving smallholders a strong incentive to be just self-sufficient—although the price gap was not large enough to induce much illegal trade.

At Independence in 1980, the new government sought to assist smallholder producers by giving them the same marketing opportunities that the board had historically given to LSC farmers. In a decade, the number of permanent GMB depots rose from 34 to 66, and in 1985 an even larger set of seasonal buying stations was introduced. Almost all of this expansion was in the communal areas and significantly reduced farm-to-market costs for net grain sellers. But rural depots remained staffed and designed for intake only, shipping almost all their intake to urban depots for sale to industrial millers. The expansion of the GMB did little for rural grain buyers. Private transport and marketing of whole grain for local processing remained illegal, and smallholders continued to buy large amounts of industrially milled maize flour, at a cost significantly above what locally processed grain would have cost through direct grain trading (Duncan et al., 1990, pp. 91-92).

Expansion of the GMB intake network in the 1980s did not change the board's pre-Independence role as a procurement agent for industrial millers. Small-scale millers continued to provide custom-milling services throughout the country, including in urban areas, but on a highly seasonal basis. Throughput was high after harvest, when farmers brought their own maize for grinding, but declined thereafter as local grain supplies were exhausted (Rubey, 1992, p. 6). Although it was technically legal for GMB depots to sell grain to informal traders and small-scale millers, depot staff generally did not know this or were unwilling to sell grain in small lots (Jayne and Chisvo, 1991, p. 325).

Another aspect of GMB operations that did not change after Independence was panterritorial pricing, whereby the GMB sets the same price at all depots. The primary effect of this system is to help producers in surplus areas (who otherwise would receive lower prices), at the expense of everyone else.<sup>3</sup> Currently the great majority of smallholders, and probably most smallholders who are net grain sellers, live in areas with net maize inflows in most years (Jayne and Chisvo, 1991, p. 321; Masters and Nuppenau, 1993). Thus panterritorial pricing implicitly taxes most smallholder farmers, while subsidizing almost all LSC maize producers. A national spatial-equilibrium model of the effects of panterritorial pricing found that in 1988 the current system reduced producer surplus in smallholder districts by 17 percent, while raising producer surplus in LSC districts by 9 percent, relative to optimal regional prices (Masters and Nuppenau, 1993, Table 6).<sup>4</sup>

### *Evolution of the Maize Market: Quantities and Prices*

Zimbabwe is now at the bottom of a repeated boom and bust cycle in the maize market. Wide swings in production (Chart 2) have been caused by a series of technical, political and climatic shocks as well as price changes. Technical changes include the adoption of the SR52 hybrid in the mid-1960s and the R200 series of hybrids in the late 1970s. Political shocks include trade sanctions after 1965 that caused a reduction in tobacco area and a shift into maize, and the escalating civil war during the 1970s that reduced total planted area. In the 1980s, production grew rapidly under unusually good rains in 1981 and 1985, helped by a catch-up expansion in area, as farmers returned to fields abandoned during the war, and smallholder adoption of the

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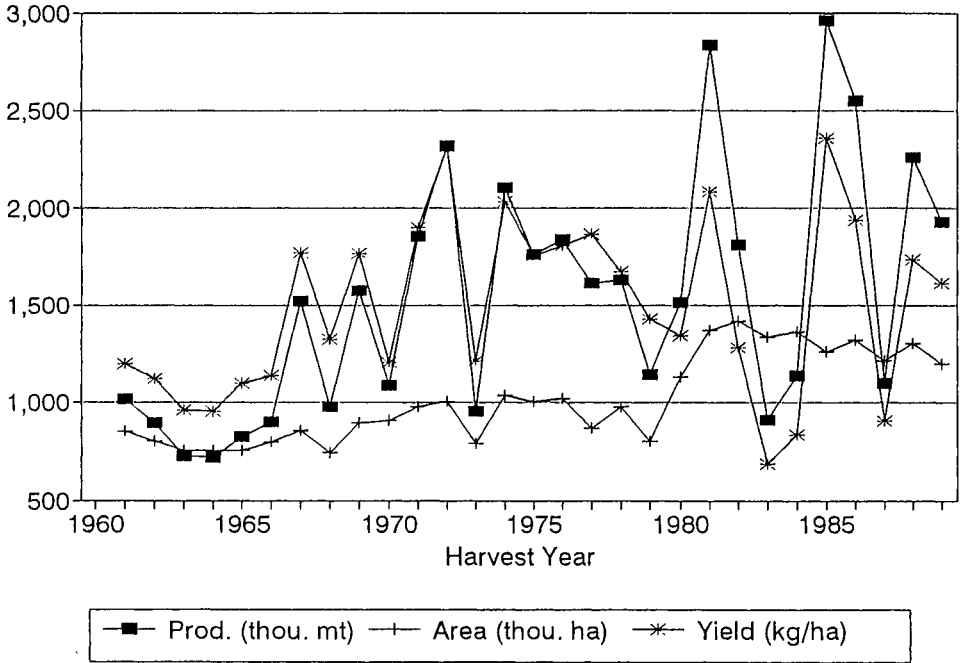
<sup>3</sup> Panterritorial pricing does not apply for consumers; in high-production areas, net buying households can often find neighbors or relatives willing to sell them grain, at prices close to GMB buying prices. But in low-production areas, a majority of households may be net buyers, so prices rise toward the grain-equivalent cost of industrial maize flour.

<sup>4</sup> Actual price changes after reform would depend on the nature of the reform.



seeds-fertilizer packages developed in the late 1970s (which in turn was helped in part by freely available low-cost credit). But the 1980s also saw record low harvests in 1983, 1984, and 1987, due to drought and low prices.

Chart 2.— Maize Production, Area, and Yield,  
1961-89 Harvest Years

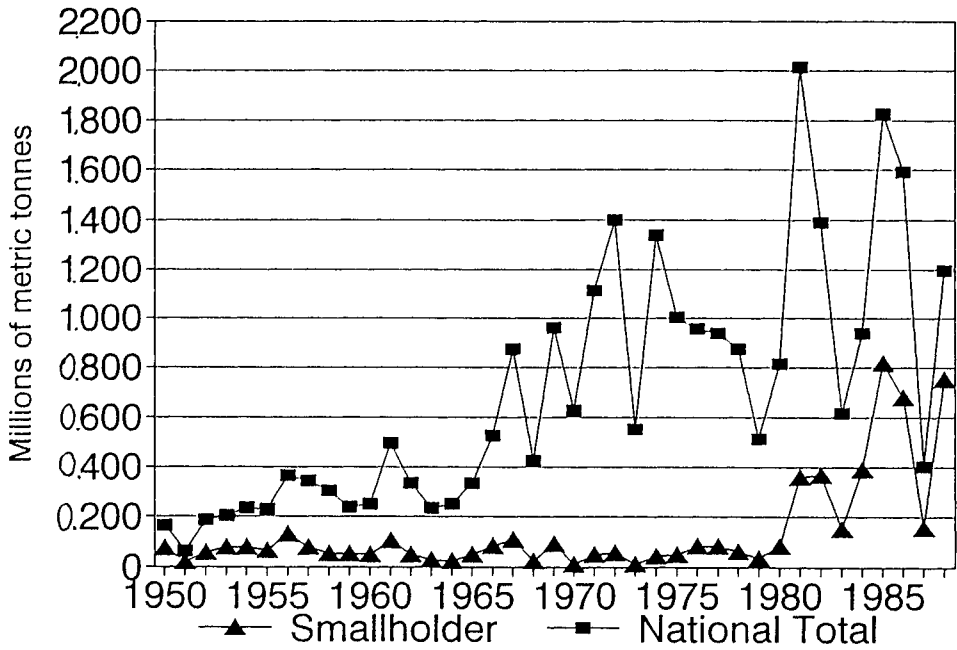


Source: USDA, World Agriculture Trends and Indicators (WATI) database.

Smallholder sales in relation to the national maize market are shown in Chart 3. Increased sales in the 1960s came entirely from LSC farms, but much of the boom of the 1980s came from smallholders. Smallholders were especially important in the second half of the 1980s.

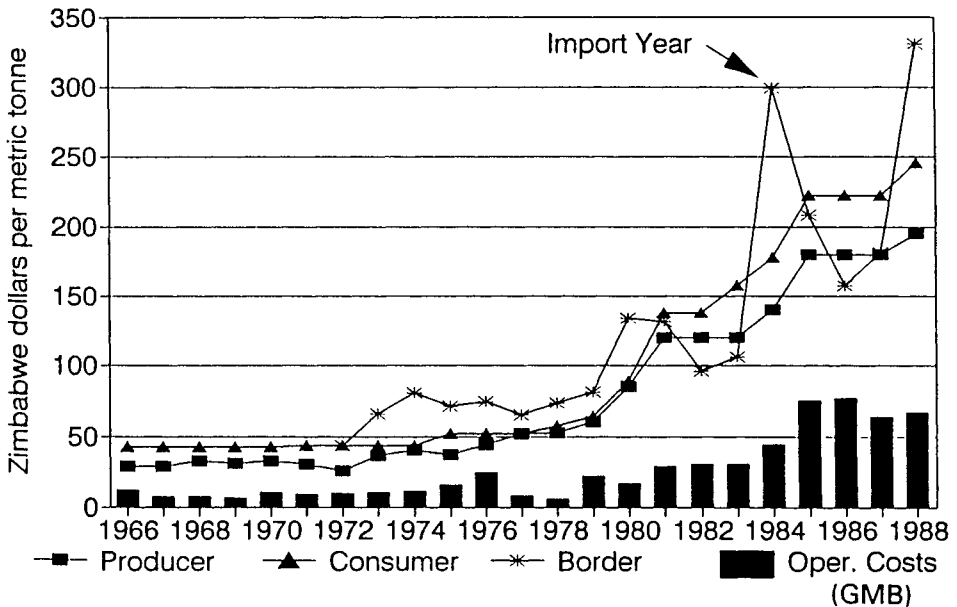
The evolution of production and marketing has been strongly influenced by maize prices, illustrated in Chart 4. Producer and consumer prices are set by government and announced usually just before the harvest, after annual negotiations with farmers' groups and the marketing board (Wright and Takavarasha, 1989). Price negotiations are ostensibly centered on cost of production estimates. But in practice—as shown for maize in Chart 4—the outcome since 1980 has been to follow border price trends.

Chart 3.— Formal Maize Marketings, 1950-88



Source: Masters (1991) from GMB data.

Chart 4.— Producer, Consumer, and Border Prices for Maize, 1966-88

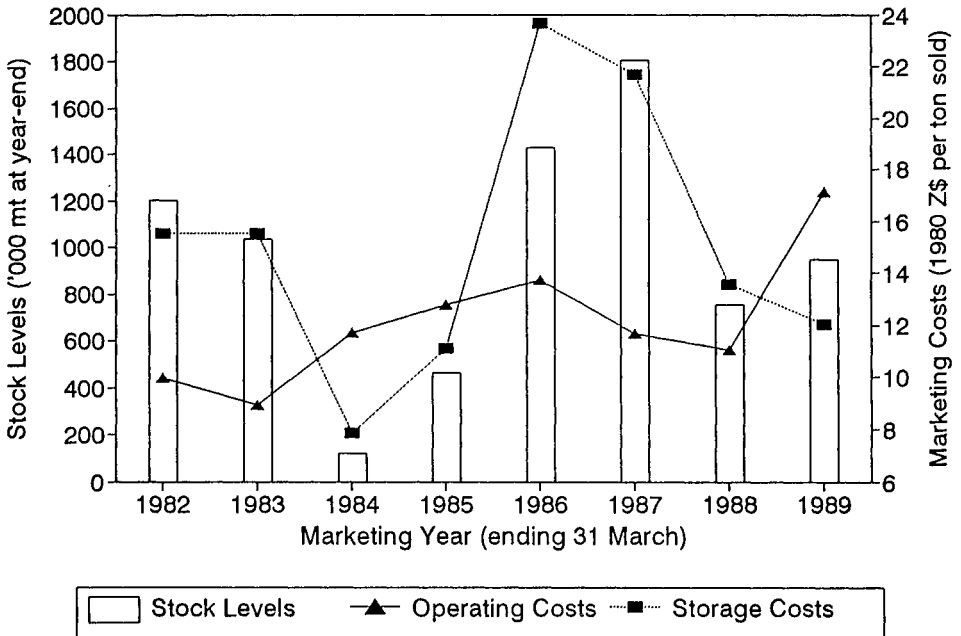


Source: Masters (1991) from GMB data.

In the 1970s, domestic prices were consistently below border prices; profits on exports were used to subsidize low-price domestic sales, reversing the 1930s pattern. After Independence, sanctions were lifted and border prices became extremely volatile. To follow them, domestic prices were raised in 1980 and 1981 and again in 1985 and 1988. In between, nominal prices were kept constant, avoiding declines and thus stabilizing official domestic prices.

GMB operating costs rose sharply after Independence (Chart 5), particularly after the record-breaking 1981 and 1985 harvest years. Much of the cost increase was due to the financial burden of storing these bumper harvests, although other expenses also increased. Chart 5 shows the close relationship between year-end stock levels (on the left-hand axis) and storage costs (on the right-hand axis). When stocks are large, storage costs (which consist mostly of interest payments) are about twice as large as all other GMB expenses put together (transport, handling, and administration). Chart 5 also reveals that although storage was the most costly GMB activity during this period, operating expenses rose substantially—an average of about 7 percent per year in real terms. Much of this increase was due to the greater cost of buying from smallholders, who are more remote and dispersed than LSC farmers and whose share of the market rose sharply in this period (Chart 3).

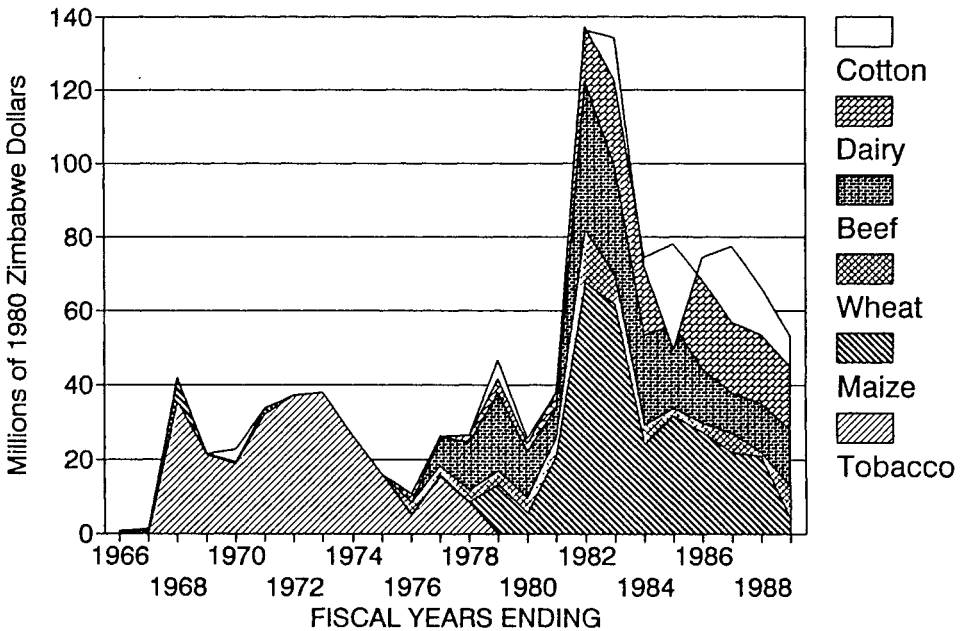
Chart 5.— GMB Stock Levels and Costs, 1982-89  
(1980 Z\$/mt, deflated by CPI)



Source: Author's calculations, from data in GMB Annual Reports.

In the 1980s, the government was unwilling to raise consumer prices to cover increased marketing costs, so the board began to run a deficit. This was a new development; previously, the GMB had operated on a break-even basis, passing on the benefits of its monopoly position to its customers or suppliers. The relative magnitude of the post-Independence maize market subsidies is illustrated in Chart 6.

Chart 6.— Product-Market Subsidies, 1966-89  
(Deflated by Low-Income CPI)

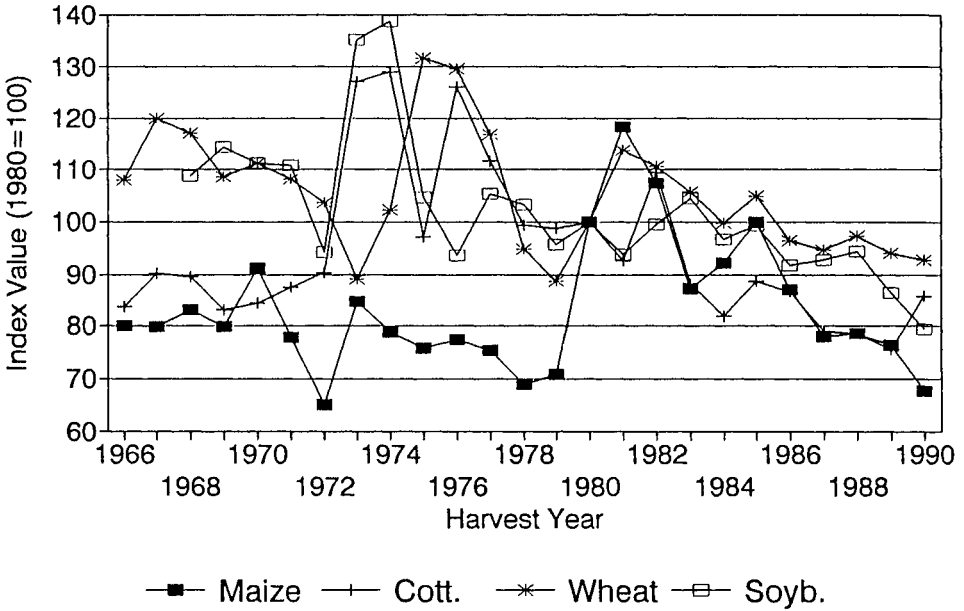


Source: Masters (1991) from GMB data.

Total subsidies peaked in 1982 and 1983. Maize generally accounts for less than half of agricultural subsidies, and in the late 1980s subsidies on maize were reduced faster than those on dairy and beef. Also, the maize subsidies of the 1980s were generally lower in real terms than the subsidies paid to tobacco growers in the late 1960s and early 1970s, meant to compensate tobacco producers for the loss of exports due to sanctions.

The “bubble” of subsidies in the mid-1980s was associated with unusually high real maize prices, relative to other major controlled crops (Chart 7). Real maize prices peaked in 1981, after the price increases of 1980 and 1981 more than reversed the downward trend of the 1970s. But during the 1980s, real maize prices gradually fell back to their 1978-79 level. Real cotton prices also fell (although cotton prices had been at historically high levels in the mid-1970s), while wheat and soybean prices stayed somewhat higher.

Chart 7.— Real Producer Price Indexes, 1966-90  
(Deflated by Low-Income CPI, 1980=100)



Source: Masters (1991) from GMB data.

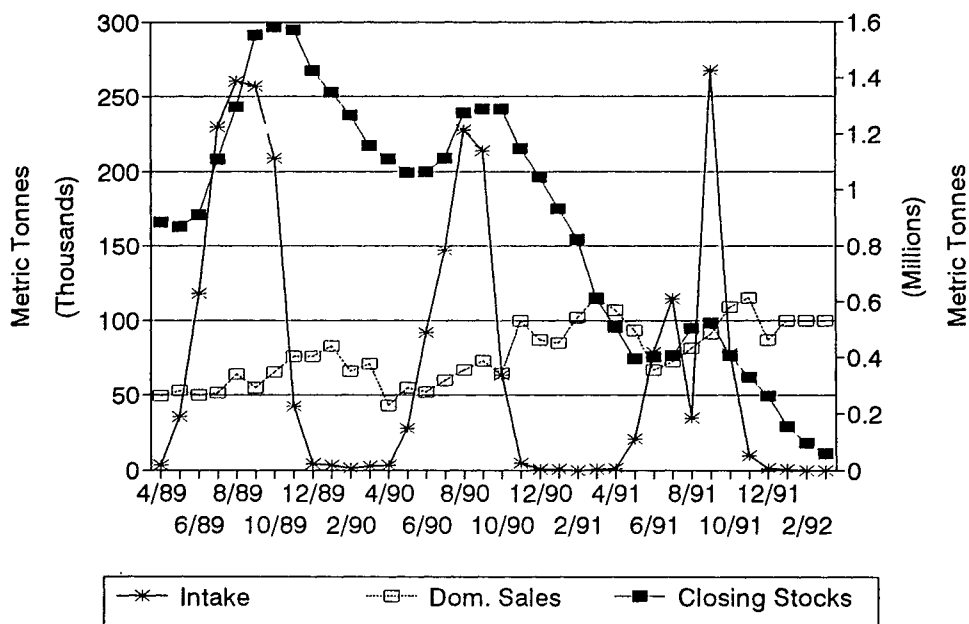
In the 1980s, the declining real maize price—relative to other crops and other activities in the economy—was a major contributor to the post-1981 acreage declines shown in Chart 2. Along with poor rainfall, low prices resulted in low GMB intake from the 1991 and 1992 harvests. This contributed to a steady erosion of maize stocks, until they hit rock bottom in March 1992, a month before imports began to arrive.

The development of Zimbabwe’s maize market before and after Independence thus was influenced by both price and nonprice factors. In particular, the structure of the marketing system played a critical role, in both the successes of the first five years of Independence and in setting the stage for the 1992 grain shortage crisis.

*Anatomy of the 1992 Crisis*

A detailed picture of the 1992 crisis is given in Chart 8, showing the month-by-month interaction of intake, sales, and stocks since the 1989 harvest. GMB intake is highly concentrated after the harvest. Because prices are constant throughout the season, each farmer has an incentive to deliver as

Chart 8.— GMB Intake, Domestic Sales and Stocks  
(April 1989 - March 1992)



Source: Grain Marketing Board file data.

soon as possible. Nonetheless, on-farm bottlenecks in harvesting, shelling, and bagging the grain, as well as off-farm bottlenecks in transport and handling, limit the flow to about 10,000 tons a day. In 1989, deliveries kept up this pace for four months, July through October. But the 1990 harvest offered only two months of full-capacity deliveries, and 1991 provided only one month's worth.

The GMB's domestic sales also follow a seasonal pattern. The lowest sales (about 50,000 tons a month) occur in the April-June harvest period, reaching retail markets shortly afterward. In this period, most Zimbabwean households have access to custom-milled grain from their own family's harvest. But as soon as rural households run out of their own grain, they generally buy industrial flour from GMB-sourced grain, since there are virtually no alternative sources of grain or flour.

After the relatively good 1989 harvest, GMB sales rose slowly to a peak of 83,000 tons per month in January, before falling back to 43,000 tons in April. After the smaller 1990 harvest, sales rose earlier and climbed higher, reaching almost 100,000 tons a month in November, and fell slower and declined less, to just under 70,000 tons in June. The 1991 harvest was even worse, with sales reaching 115,000 tons in November. By the end of the year, it was clear

that the upcoming harvest would be very small. Deliveries were rationed, as the country awaited imports and stocks fell precipitously toward zero.

Stock levels, shown in Chart 8 on the right scale, are the result of accumulated intake minus domestic sales, net exports, and losses. With strong production and relatively slow exports, the 1989 harvest season yielded a stock build-up of about 0.7 million metric tons (mmt) between May and October, to a peak of almost 1.6 mmt—enough for almost two years of domestic consumption. Faster exports then helped draw stocks to under 1.1 mmt in May, for a net build-up of almost 0.2 mmt during the marketing year.

In mid-1990, with stocks still well over a full year's domestic requirements, there seemed little reason to stop exporting. But the pace of exports was exceptionally rapid. For calendar year 1990, exports totalled 0.73 mmt (CSO, 1991, p.19), almost as much as the record exports of 1975 (Chart 1). Combined with low intake and high local sales, 1990 exports brought stock levels down to under 0.4 mmt by May 1991. This was not yet low enough to trigger imports. But then, while intake from the 1991 harvest came in barely faster than sales, previously contracted exports continued to be shipped. As a result, by October 1991 stocks were well below the minimum reserve stock level needed to cover import lead times (World Bank, 1991, Vol. 3, p. 98).

If imports had been ordered in September or October 1991, they might have arrived in time to avoid shortages in early 1992. But import orders were not issued for several months, and at many depots stocks had fallen to zero by February. Regular supplies were not restored until the stream of commercial imports and food aid reached full flow in June 1992. Intake from the 1992 harvest was negligible, so imports continued to be the main source of marketed grain until the next harvest.

In retrospect, the 1992 crisis resulted from a combination of domestic and trade factors. Declining domestic incentives had reduced acreage, raised demand, and reversed the country's maize surplus position, while overzealous exports and delayed imports allowed stocks to fall to zero. The 1991-92 drought would have had a much smaller economic impact if domestic prices had been higher in earlier years, trade had been more responsive to domestic conditions, or both.

#### MARKET REFORM: A TWO-TRACK STRATEGY

In many African countries, governments have reformed agricultural markets by deregulation (legalizing private trade) and privatization (selling or closing down parastatal agencies). Such liberalization allows traders who operated before controls to re-enter the market and those who operated despite controls to expand. But in Zimbabwe, after sixty years of controls and with virtually no parallel market in place, there are very few former or suppressed traders ready to come forward.

For a competitive network of marketing agents to develop, substantial new investment will be needed. What is required is not only new transport

and storage capacity, but also new human capital. Traders must acquire new skills and forge new types of relationships with suppliers and clients. These investments take time. While the private-sector marketing network is being built, there inevitably will be bottlenecks and super-normal profits along certain routes or at certain times. To limit these disruptions, the marketing board's existing trading network should be kept active. This will ensure a continuous flow of grain throughout the country and throughout the year. But to enable private traders to enter, the GMB must begin to charge break-even rates for its services. If the GMB were to operate on a competitive basis, its own marketing costs would put a ceiling on private traders' margins, without choking off the ability of the private sector to compete within those margins.

The expansion of private trading can be accelerated by the government, through the provision of market infrastructure. For example, a new market information system will almost certainly be needed, to disseminate news about prices and quantities being traded in different locations. It may also be necessary for government to establish new trading areas, simplify licensing requirements, and reduce any other potential barriers to entry that may arise over time. But such changes will have little impact if trading is not profitable.

To allow private traders to expand while maintaining active GMB trading, a two-track strategy of phased deregulation and GMB reform is proposed. The combination of deregulation and reform allows emergent private traders gradually to capture market share in regions and activities where they have particular strengths, while the GMB increasingly specializes in functions for which it has some comparative advantage. In this way, marketing costs decline gradually as the system evolves toward greater competition and efficiency.

#### *Deregulation and the Private Grain Trade*

Deregulation is needed for new firms to enter and invest in lower cost marketing systems. But immediate deregulation without simultaneous GMB reform would lead to a distorted pattern of private-sector investment and increased fiscal losses. These negative effects of deregulation arise because the GMB's system of uniform panterritorial and panseasonal prices forces it to cross-subsidize losses in some areas with profits from elsewhere. Deregulation without GMB reform would lead emergent private traders to enter low-cost markets, which are now highly profitable, instead of attempting to provide better service in high-cost areas where the GMB is losing money.

Under uniform GMB pricing, the highest-profit activity is the transport of grain from LSC areas to industrial millers. These shipments cover short distances over excellent roads, with large consignments and small transaction costs at both ends. The task could easily be taken over by the farmers and millers themselves or by a small number of traders, but such a change would



benefit only LSC farmers and urban consumers. The GMB would be left with smaller throughput, higher average costs, and trading deficits, giving government the prospect of either subsidizing the board (thus ending the move toward competitiveness), raising the board's margins (thus initiating another cycle of lost market share and increased losses), or disbanding the board entirely (thus raising rural margins even higher and possibly leaving some areas temporarily without grain trading services at all). Faced with such a choice, the government could well prefer a return to complete control.

To ensure that private competition does not destroy the GMB before the board can be reformed, deregulation must be phased in. Taking all segments of the market into account, deregulation should begin with activities the GMB does least well and are therefore most needed and most profitable in social terms. Only later, after GMB reforms eliminate the need to cross-subsidize one route with another, is complete deregulation economically justified.

The first area for deregulation should be trade in grain that is destined for processing by hand or in small-scale hammer mills. Such "informal" trade could replace, at lower cost, some of the "formal" trade that passes through the GMB to industrial millers. But the GMB's centrally managed depot network is not well suited to this labor-intensive, geographically dispersed activity, and private investment in this area is urgently needed.

Much informal trade involves intra-rural movements, but some passes through or is sold in towns and cities. For such trade to expand, complete liberalization of all grain movements is necessary. To do this while still protecting the GMB during its restructuring process, a narrower and more targeted set of controls should be used. The need for a change in the type as well as extent of controls is made clear by the government's initial experience with maize market liberalization.

In February 1992, the Minister of Agriculture announced that private trade would be decontrolled between noncontiguous communal areas and in the country's driest areas (within Natural Regions IV and V) (GOZ, 1992a, p. 11).<sup>5</sup> The intention was to expand intra-rural grain movements. But when

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<sup>5</sup> The statement reads, "for reasons of food security as well as efficiency, the government plans to eliminate existing restrictions on crop movements. To this end the present provisions which permit the movement of maize within a communal area will be extended, so as to allow transport of maize between non-continuous communal areas, so that deficit communal areas can receive grain from surplus communal areas without having to go through the GMB." Later the statement announces, "The Government have also decided that maize will be deregulated in Natural Regions IV and V, i.e. from April this year maize can be bought and sold freely by producers and traders in these regions, while at the same time the GMB will continue to provide a price floor for producers wishing to sell to the Board, and will also... ensure that maize is freely available at all its depots to any buyer" (GOZ, 1992a, p. 11).

regulations to fulfill the Minister's directive were actually issued (Statutory Instrument 121 of 1992), they implemented only the second half of the policy. Trade between noncontiguous communal areas (which is banned by the Grain Marketing Act of 1966 and its predecessors) could not be deregulated, if only because this would make the remaining GMB controls unenforceable. Since all grain looks alike, the police would not be able to distinguish legal shipments (with both origin and destination in communal areas) from illegal shipments (with an origin or destination in commercial or urban areas). Any papers used to prove the origin and destination of one shipment could be used repeatedly, and there would be little way for the police to detect fraud.

To allow private trade but still protect the GMB's profitable activities, it would be necessary to lift movement controls entirely and use more selective restrictions to protect the GMB's most profitable routes. One approach would be to protect only the GMB's monopoly on sales to industrial millers, through controls at the factory gate. Since the millers are highly concentrated (one firm, National Foods, controls two-thirds of the milled maize market) and conveniently located (most mills are located near the GMB's urban depots), such controls could be enforced through occasional spot checks on the origin of grain entering each mill, along with occasional paper audits to ensure that flour production is matched by official grain purchases.

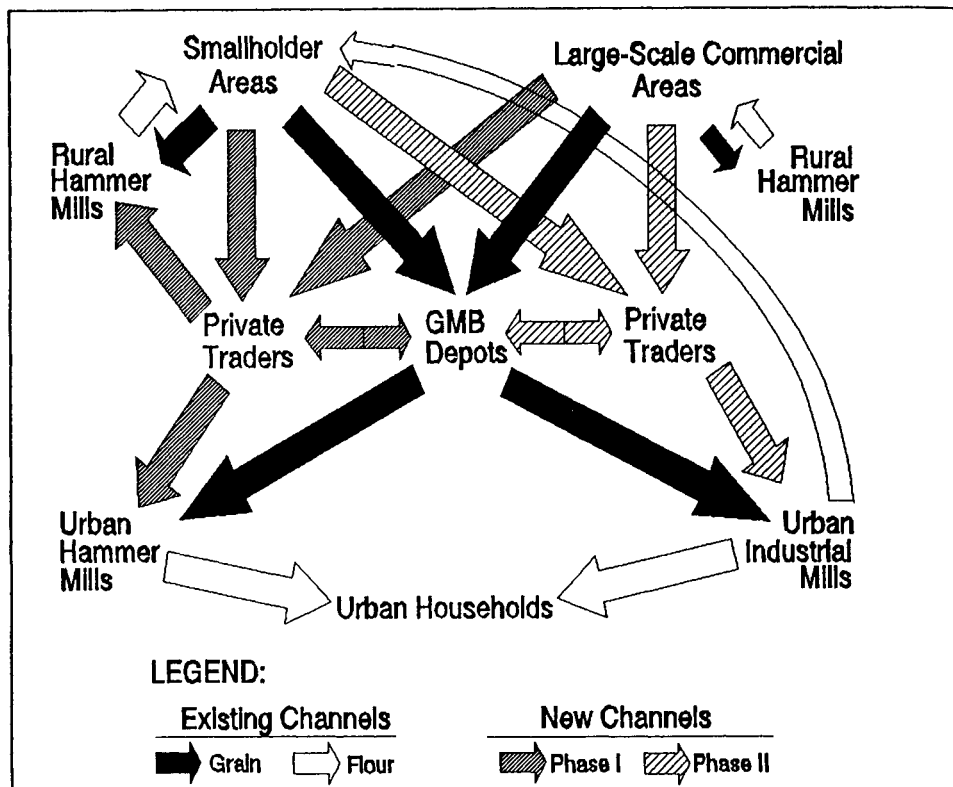
The economic rationale for continued GMB control over the intake of industrial millers is that this task is done well by the GMB, so continued control involves little technical inefficiency and is relatively nondistortionary. Furthermore, the income transfers caused by continued control are relatively progressive, because revenues from the GMB's better-off industrial customers are used to cross-subsidize its activities in poorer areas. In addition, there may be a need for continued controls to offset the millers' market power, since it would be economically inefficient as well as politically awkward to have the nation's staple food and principal wage good be dominated by a single privately owned firm.

A flow chart of existing and proposed new marketing channels is given in Chart 9. This diagram shows the movement of maize from farms to consumers, with existing grain marketing channels in black and existing maize flour marketing channels in white.<sup>6</sup> The proposed new channels are shaded, in dark stripes for the first phase of deregulation and light stripes for the second phase.

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<sup>6</sup> The urban hammer milling sector shown here is legal but small, accounting for only about 10 percent of the market in the capital city. Much of this throughput is illegal movements of small quantities for household use. The sector has not been a significant buyer of grain from the GMB, due partly to local-government restrictions on small-scale milling, partly to the preference of higher-income consumers for more refined products, and partly to government subsidies on industrial milled products in the mid-1980s and early 1990s (for details, see Rubey, 1992).

Chart 9.— Existing and Proposed Maize Marketing Channels



After the first phase of deregulation, grain trades among smallholder areas (shown in the upper left hand quarter of the chart) would replace some of the current grain movements from smallholders to urban industrial mills and back again. Smallholder grain also would be able to move directly into urban areas (the lower left hand quarter), supplemented by LSC grain delivered through the GMB. If LSC grain trade were liberalized, it would supplement smallholder grain in both rural and urban hammer milling.

The continued restrictions during the first phase would operate on the right half of the chart, forcing the bulk of urban consumption to come through the GMB. Once this is also liberalized in the second phase, there would be open competition between the GMB and private traders everywhere.

In the first phase, after removal of movement controls, private traders would: (a) buy and bulk up grain from smallholder farmers; (b) move and store grain at the wholesale level; and (c) distribute grain to households for hammer-milling. Established rural retailers, who already have close links with households and knowledge of local demand conditions, are likely to be able to enter activities (a) and (c) quickly and at low cost. At the same time, established wholesalers, who already have close links with retailers, will be able to

enter (b) equally quickly. For both groups, costs will be kept low by using existing transport and market information channels, moving from an essentially one-way, urban-to-rural flow of manufactured goods to a two-way flow of manufactures and grains. Specialized grain traders may gradually emerge, but this is unlikely to happen in the first few seasons of private trading.

Because of the high cost of credit, private traders are unlikely to undertake much long-term storage. Thus the GMB, whose monopoly on international trade gives it access to external credit at the lowest possible rates, is likely to continue undertaking most of the country's grain storage—at least until national interest rates fall to international levels. The GMB's storage advantage has a spatial as well as an intertemporal element, since grain must be moved to a GMB depot before it can be stored. Only in locations that are relatively far from GMB depots will there be much local storage. In areas closer to depots, the GMB will offer a more effective post-harvest price floor (and buy a larger market share) and then offer a more effective off-season price ceiling (and sell a larger market share).

A simple model of the relationship between seasonal transport and storage is illustrated in Chart 10, adapted from Timmer (1974). The left panel shows a representative seasonal price pattern at or near a GMB depot/urban area, while the right panel shows a more remote informal/rural market.<sup>7</sup> The urban price fluctuates (along line P) between some ceiling ( $P_c$ ) and floor ( $P_f$ ). But in rural areas prices would fluctuate even more (along line P') if no rural-urban trade were feasible, because of higher informal interest rates and storage costs.

Allowing rural-urban trade (at a given transport cost T) reduces rural fluctuations, by injecting urban supply (along line P+T, which peaks at  $P_c+T$ ) and demand (along line P-T, which falls to  $P_f-T$ ) throughout the year. In the simple case illustrated in Chart 10, it would be optimal for there to be some rural-to-urban flows in the period O-A (when urban demand is above P'), followed by some reverse flows in the period B-C (when urban supply is below P'), with intervening periods (A-B and C-D) of rural self-sufficiency.

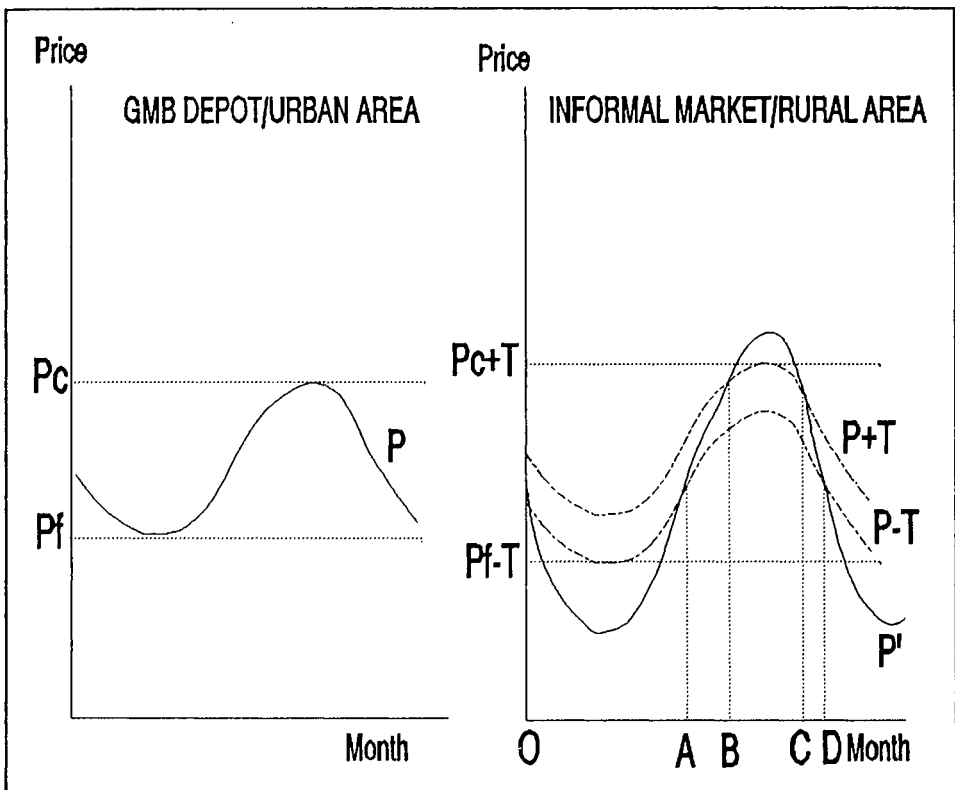
The data needed to estimate price rises and transport costs in and between specific locations are not yet available. Some seasonal price information has been reported in Jayne et al. (1990), and preliminary results from

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<sup>7</sup> In these graphs price fluctuations are drawn smoothly, to show the most general case. The curves would have flat segments where floor or ceiling prices were binding and held constant by either government policy or international trade at constant prices, as illustrated by Timmer (1974, p. 151). Currently, GMB/urban prices take the form of fixed, panseasonal buying ( $P_f$ ) and selling ( $P_c$ ) prices, preventing the urban market from converging on a single integrated price (P) at which both purchases and sales take place. In urban areas  $P_c$  applies throughout the year, while in surplus areas the  $P_f$  price floor applies at only at harvest, and informal-market prices rise thereafter to cover storage costs (Agritex, 1992).

a new official survey of rural prices have recently become available (Agritex, 1992); both provide some evidence of rapid post-harvest price rises in rural areas. This would confirm that differences in seasonal storage costs will cause rural informal-market prices to fluctuate more than urban formal-market prices and that this can generate economically efficient flows of grain from rural to urban areas and back again. As a result, the GMB will be able to accomplish some stabilization and price integration on a voluntary basis without explicit government subsidies, simply by providing low-cost storage.

Chart 10.— The Seasonal and Spatial Relationship  
Between GMB and Other Market Prices



The board's market share and the ability of private traders to compete in any particular activity depends on how the board is reformed. The reform process will shape the emerging trading network, and vice versa. After deregulation, private traders would take over an activity if the GMB were to charge an excessive large marketing margin. Similarly, if private traders are charging more than necessary, the GMB can use its depot network to compete with them. With competition between the two, each would do what it does best. If either one charges too much, it will lose market share and fail to cover its fixed costs; if they charge too little, they will gain market share but fail to

cover their variable costs. Either way, competition will drive marketing margins toward minimum costs.

### *Reform of the GMB*

While the private trade is developing under the phased deregulation, the GMB's own reform process should proceed as quickly as possible. The objective of these reforms should be lower marketing costs and faster response to changing market conditions. To fulfill these objectives, the GMB will have to introduce more flexibility in prices over space and time, to reflect variations in supply and demand conditions.

*Spatial price variation.* Currently, GMB prices are "panterritorial," in the sense that they are the same at all depots.<sup>8</sup> But grain is more valuable in deficit areas than in surplus areas. Thus panterritorial pricing subsidizes net sellers in surplus areas, while taxing those in deficit areas. The result is an inefficient increase in transport and marketing costs plus an inequitable transfer—from relatively resource-poor farmers in deficit areas to relatively resource-rich farmers in surplus areas.

To reform this system without fully withdrawing GMB services, the GMB could calculate inter-depot transport margins and add (or subtract) them from the pre-announced base buying and selling prices. For simplicity, the "base" price could apply at depots near Harare. Since grain generally moves from north to south, inter-depot transport margins generally would be added to prices paid and received at more southerly depots and subtracted from prices at more northerly depots. The transport costs in moving grain to or from each depot could be announced as soon as transport patterns were known and included in a published schedule along with other information about GMB prices and operations.

The GMB also should introduce depot-specific operating costs. Currently, the GMB applies a constant margin between buying and selling prices at all depots. To account for varying unit costs, it would be desirable to allow the gap between buying and selling prices at a specific depot to vary. At high-cost depots, consumer prices would be higher or producer prices lower, relative to low-cost depots.

In some locations, GMB operating costs may be substantially above a private trader's costs. This is most likely to be true at very low-volume locations, where full-time GMB staff may be under-employed and local shop-keepers could undertake grain transactions at lower cost. In such cases, the board could choose to lease or sell its facilities to a private firm, with continued grain trading being a condition of the lease.

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<sup>8</sup> Prices are not panterritorial at the farmgate or consumer levels, as noted earlier.

*Intertemporal price variation.* GMB buying (producer) and selling (consumer) prices must be made more responsive to changing conditions from year to year. Seasonal flexibility also could be introduced to help the GMB compete with private traders, but it is much less important than annual pricing. Seasonal price variation affects only the location of short-term storage, whereas annual pricing affects aggregate production, consumption, and the amount of costly long-term storage that the board must undertake.

One cause of the GMB's problems with stock levels is the system of administrative price-setting, which makes prices adjust slowly in a cobweb-type price cycle (Muir and Blackie, 1988). Real prices are raised after droughts when public stocks are low, causing an increase in area planted, large intakes when rainfall returns, and decreased demand. Stocks are then built up and real prices are allowed to decline again, repeating the cycle. Over the last decade, the production cycle has hit bottom in 1979, 1983, 1987, and 1992, and peaked in 1981, 1985, and 1988.

In a competitive market, prices would adjust continuously to new information. But if a price floor/ceiling system must be pre-announced, it would be possible to imitate a competitive price discovery process through "graduated" pricing, following a pre-announced schedule linking prices to harvest or intake quantities. The lowest possible price would correspond to export parity, and the highest to import parity. In between, prices would correspond to domestic effective demand.

Producer payment could be made in two segments—a fixed initial price paid on delivery, followed by a variable supplementary payment depending on the harvest size. In this way the board would present the market with a national effective demand curve, which would stay roughly constant in real terms, shifting only as needed to reflect changes in stock levels, income, population, and the prices of inputs or substitutes. Such a graduated scheme would stabilize producer incomes, since prices would vary inversely with yield, and also stabilize the board's annual credit demand and payout to farmers. This would help stabilize the stop-go effect on aggregate economic growth caused by price cycles in the 1980s, when large payouts to farmers in high-price/bumper-crop years (such as 1981, 1985, and 1988) over-heated the economy, and low-price/drought years (such as 1982-83, 1986-87, 1989-92) left farm incomes and aggregate demand relatively low.

On the consumer side, prices could be adjusted gradually, to minimize consumers' adjustment costs given the need for the marketing board to at least break even. More frequent but smaller price changes sometimes would provide more stable real prices and real incomes than under the current system, in which nominal prices are adjusted in a big jump about once a year. At other times, consumers would be asked to bear some variation in real prices over time, in exchange for lower average prices.

*International trade and price stabilization.* Zimbabwe's border prices are highly unstable, as shown in Chart 4 above. The variation is highest when

the country switches between exporting and importing. Because of the high cost of transport between Zimbabwe, its neighbors, and the closest ocean ports, import prices are generally between 50 and 100 percent above export prices.

Import and export prices themselves vary, in part because external donors are sometimes willing to buy maize at high prices for food aid in the region, and at other times imports are available at relatively low prices from nearby surplus producers. But usually production in Zimbabwe is closely correlated with production throughout the region, which shares a common meteorological and political climate (Koester, 1986, p. 45). As a result, both import and export prices are low when Zimbabwe wants to export and high when it wants to import.

Given the wide band between export and import prices and the correlation between Zimbabwean and regional production, there is strong demand in Zimbabwe for continued intervention to isolate domestic prices from international trade. In the past, the marketing board has stabilized domestic prices by keeping them consistently above export values (e.g., the 1930s) or below them (e.g., the 1970s). In this context, price stabilization did not require inter-annual storage. But the country is no longer a consistent exporter, having experienced two major import years (1984 and 1992) in the last decade.

Since Zimbabwe is an intermittent trader, price stabilization requires storage as well as trade intervention. Some stabilization is possible without storage, by subsidizing additional imports in shortage years and additional exports in surplus years. Indeed, the GMB does this when stocks hit zero or grow excessively large. But some inter-annual stockholding is almost certainly desirable, given Zimbabwe's very high international transport costs, long import/export lead times, and limited regional trade prospects.

The importance of inter-annual storage implies that relative storage costs are a critical element of the marketing system. Here the marketing board has a significant comparative advantage, not only because of its historical investment in the facilities and staff needed for stockholding, but also because its export monopoly on stocks of valuable crops gives it enough collateral to obtain overseas credit at extremely low rates. Private firms (without export monopolies) are riskier debtors and pay higher interest charges. In this context, giving the marketing board a monopoly on international trade seems likely to yield social benefits (from a lower cost of capital) that exceed its costs (from the absence of competition in international trade). Even without that monopoly, however, the board's established network of facilities and staff would give it some competitive advantage, at least in the short run.

Given the board's welfare-enhancing role in grain storage, it is appropriate for the board to maintain a substantial depot network. Depots could all be located in production areas to minimize procurement costs, but the risk of transport bottlenecks suggests that some grain should be stored near consumption areas as well. Thus a nationwide network of depots is needed; the current locations may not be exactly optimal, but the general idea is fully con-



sistent with an efficient marketing system. To link the depots, the current system of contracting transport services from the private sector through competitive bidding should be maintained. The board specifies the route and approximate quantity to be moved, and all transporters may bid. In this way the board ensures that it receives the lowest-possible transport services along each route. Since grain movements are somewhat seasonal, transporters tend not to be specialized in grain, but rather make bids for grain movements that are most compatible with their other tasks. The competitive system thus yields lower costs and better performance than if the GMB operated its own grain transport vehicles.

Continued GMB operations can enhance national welfare not only during the deregulation process, but also afterwards. Privatizing or breaking up the network would increase instability over time and probably spatial variability as well. Nonetheless, the board's role need not—and should not—be enforced by restrictions on private competition in domestic markets. The board can be competitive in those activities where it provides the best service at lowest cost. Only for international trade is there a significant rationale for restricting competition in the long run.

*Government oversight and GMB accountability.* With the flexibility to adjust prices over time and place, the GMB would be free to become a fully competitive marketing agent. To ensure that GMB management does not use its state-owned assets to earn excess profits or pay excessively high costs, the government (as the GMB's owners) would have to have a substantial oversight role. In keeping with the Grain Marketing Act, control should be exercised indirectly through the government-appointed Board of Directors, with a minimum of interference from other officials.

The government's precise objectives for the GMB might include earning a target return on assets or, at a minimum, requiring no net subsidies. The GMB need not break even every year, but it should be able to finance temporary losses with commercial credit. Given that constraint, the government also has certain "social" food security objectives for grain markets, particularly intertemporal stability (to minimize social adjustment costs) and spatial integration (to minimize social conflict between regions). To some degree these objectives can be met without subsidies, through a more efficient marketing system. By competing with one another, the GMB and private traders can provide more price stability and regional integration than either could alone.

If the government wants more storage and transport than the GMB can provide competitively, the government would be able to use the GMB for that purpose. But after deregulation, the costs of intervention would be much clearer than under current market controls. For example, if the government wanted the GMB to reduce price differences between two depots, the government would have to pay the board to undertake all of an increased transport burden between them. Currently, the costs of intervention are hidden in

cross-subsidies and transfers. After deregulation, those costs would be clearer, which is likely to reduce the government's willingness to intervene.

### SUMMARY AND CONCLUSIONS

This paper analyzes Zimbabwe's historical maize market performance and the government's current reform options. The historical perspective leads to a phased reform strategy, in which private trading is gradually liberalized, while the marketing board is mandated to rationalize its operations toward welfare-enhancing interventions.

In the first phase of reform, only rural and informal urban trade would be deregulated, to protect the marketing board's profitable sales to industrial millers. In this "protected" phase, the board would continue nationwide year-round operations, but would introduce break-even transport and storage margins. These margins would provide moving price bands at each location, within which the market share of private traders could expand gradually.

In the second phase of reform, deregulation would extend to all domestic activities, so that private traders would compete with the board at all locations throughout the year. The board could retain its monopoly on international trade or use variable levies or quotas to isolate domestic prices from short-term border price fluctuations. Maintaining the board's export monopoly would give it access to lower-cost overseas loans than would be available to competitive firms, thus allowing it to undertake more storage and provide more price stability. But the board would receive no direct subsidies and be required to finance its price stabilization through commercial loans, passing its storage costs on to the domestic market.

The two-track reforms proposed here are designed to make possible increased competition in the short run and a gradual transition to the lowest-cost system in the long run. Some aspects of the reform strategy presented here may be specific to Zimbabwean conditions, but much of it may be more widely applicable. In particular, deregulation generally should be phased in and accompanied by reforms in the old marketing institutions, to minimize disruption and exploit whatever competitive advantage a public-sector marketing agency can offer. Reforms along these lines, backed by careful empirical work of the sort pioneered in the *Food Research Institute Studies* (e.g., Southworth, Jones, and Pearson, 1979), offer great hope for lower marketing costs and improved welfare among both producers and consumers.

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