



Review

Trinidad, Brazil, and Ghana: three melting moments in the history of cocoa ☆

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Abstract

This paper examines decline in cocoa production at three historical moments: Trinidad in the early 18th century, Brazil in the first half of the 20th century, and Ghana in the recent transition from colonialism to independence. In each, decline followed promising expansion. Conventional explanations have been based on biological, agronomic, and market factors. Following a commodity systems approach, we use the extant literature to focus in addition on labor control dilemmas and the consequences of state action and inaction. Throughout, use of the cocoa commodity system as the unit of analysis exposes important commonalities related to power, constraint, and motivation.

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We have chosen to study the history of cocoa production by examining three distinct historical moments: Trinidad in the early 18th century, Brazil in the first half of the 20th century, and Ghana in the mid-20th century transition from colonialism to independence.

Despite contrasts in place and historical period, the three cases display a key commonality: cocoa production in each did not maintain an expected upward trajectory. We hope to explain the downturn in each case and, then, draw common themes from the three cases.

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1. Introduction

Despite widespread interest in cocoa and the chocolate made from it, other commodities have received

much more attention from social scientists. Such notable examples as Sidney Mintz's study of sugar (Mintz, 1985) and Jeffery Paige's study of coffee (Paige, 1997) have shown that commodities grown in the tropics for export raise fundamental questions of power, inequality, and change in the modern world system. At the most general level, we would like to add our work on cocoa to this tradition.

1.1. Explanatory emphasis

We hope that our work will also raise questions about the simple answers scholars and lay people often accept to explain changes in production. A downturn in a commodity or industry is often "explained" as due to a contraction of supply or demand; for example, the decline in the availability of pay phones is ascribed to consumer preference for cell phones (demand) and provider dislike of high maintenance costs (supply) (Davenport, 2001). Such an account is really no more than a description, where an actual explanation requires pushing back to the changing determinants of supply or demand. And where causes are identified, the argument often turns on efficiency in economic competition. The levels of efficiency and competition are too often accepted as natural, resting on technology, natural resources, or a vague historical development. Our emphasis, in contrast, is on the social actors and processes that lie behind economic quantities like supply, demand, efficiency, and competition, which we see as socially constructed. In this emphasis on the social bases of change in commodity production we follow in the tradition of Friedland, Barton, and Thomas on lettuce (1981) and Philip Wood on textiles (Wood, 1986).

We focus, in particular, on success or failure in obtaining and directing production labor, which can be crucial in generating the supply of a commodity. We will see that both a sufficient quantity of labor and an adequately controlled or motivated labor force can hardly be assumed in the case of cocoa and can help explain falling production. Cocoa production, moreover, often benefits from workers who use judgment or discretion in adjusting their behavior. Such non-routine decision making can be thought of as an important part of the skill requirements of a job (Blauner, 1964). The skill requirements of cocoa growing arise because cocoa is disease-prone and sensitive to temperature and moisture variation and because the fermenting and drying methods carried out at the harvest site are critical to the taste that will only show up much later. Motivated rather than coerced labor can be expected to use the necessary skills, which in turn may influence both the amount and quality of production. Coerced labor also resists control and raises the costs of control,

both of which reduce productivity and profits (Clarence-Smith, 1990).

We focus, in addition, on the state as a key to the shaping of supply and demand. We will see the state succeeding or failing: to foster the labor supply; to assure a sufficient return for cocoa entrepreneurs; to provide transportation and other key infrastructure; to help supply connect with demand; to buffer farm owners and workers from ruin in the commodity market; to push long-term investment; and to advance quality, instead of only bulk, production. We have been influenced by Peter Evans' concept of "embedded autonomy" (1995). For Evans, the state, in order to foster development successfully, needs the connections with economic elites that will inform state planning and action, but it must not be captured by these elites; rather it must maintain sufficient autonomy to solve problems caused by elites and work out compromises between feuding elite factions (see also Wright, 1996). The state, often left out of economic analyses, will be central to our analysis.

Turning more specifically to cocoa, the influential "forest rent" analysis of cocoa production patterns (Clarence-Smith, 1995, 2000; Clarence-Smith and Ruf, 1996; Ruf, 1995a, b) offers a general explanation for falling output after growth and expansion. We hope to supplement its economic logic with our emphasis on the labor process and the state. In the forest rent approach, an agronomic insight becomes the basis for an economic conclusion. When virgin forest land is first cultivated, the producer enjoys the benefit or rent of undiminished soil fertility and low disease levels. These decline over subsequent years of cultivation, although the declines can be countered with added material and labor inputs at added cost. Sometimes these same inputs can increase the quality of the cocoa harvested. Unless, however, the premium paid for higher quality cocoa is greater than the added cost of producing it—and those costs increase as the initial forest rent declines—recently cleared land will always out-compete land long cultivated in cocoa.

The resulting agro-economic imperative to open new land can run up against a shortage of forest or a shortage of labor. While these shortages may be simply due to environmental or demographic limitations, they may also be produced by state action or competition from other uses to which the forest land or the labor may be committed. When one or the other shortage arises, a country's cocoa production can no longer compete with other countries' in which virgin forest and the labor to clear and plant it are available. Thus, from the forest rent point of view, the waning of former productive and economic advantage in cocoa and their waxing elsewhere are entirely to be expected; indeed, they are natural processes subject primarily to the contingencies of land and labor availability.

Ruf, in particular, has neatly knitted together agronomic, family, and, to a lesser extent, commodity price cycles into a single explanation for the ebbing of regional cocoa growing booms (1995a)¹. High cocoa prices lead young men to migrate to virgin tropical forests where they plant many new cacao trees on small holdings. These trees start to yield after about 5 years as the farmer's family life cycle both raises the farmer's consumption requirements and provides family labor. Enjoying the forest rent, the farmer's revenue actually exceeds his consumption needs for about 20 years, allowing substantial consumption and investment (in production and/or in his children). When the forest rent becomes exhausted and the children are no longer available to work on the farm, however, tree revenue falls below the farmer's still rising consumption needs. A family crisis ensues, and this individual crisis aggregates to a regional crisis due to the mass migration of many young farmers to the same "cocoa pioneer front" about 25 years before. The mass migration has, moreover, generated mass planting that eventually leads to over-supply and depressed commodity prices at the very moment when the forest rent gives way. With the exhaustion of the regional forest rent, but the return of higher cocoa prices, the stage is set for a new migration of young men to a new cocoa pioneer front, perhaps in the same part of the world, perhaps in a distant part.²

We do not take issue with the agronomic insight of the forest rent approach, but we are wary, as explained earlier, of accepting efficiency and competition—and largely price competition at that—too easily as the sole drivers behind increases and decreases in the cocoa production in specific locations. Admittedly, the scholars taking this approach recognize group action, power, conflict, and state intervention as key contingencies, but their basic argument is about soil fertility, disease,

yields, cost, efficiency, and competitive advantage. Their contingencies are, in fact, the central players in our story, so our approach will be to push them to center stage, but always with the forest rent logic as the chorus.

We have an additional problem with the forest rent approach. It downplays the return to high quality cocoa production, especially since the advent and popularity of mass produced, milk chocolate in the late 19th century. In this account, the economic return to high quality chocolate today suffers from less quality-consciousness and more price-consciousness among consumers. Low price chocolate derives from low cost cocoa generated at the forest edge on small holdings with the advantage of the forest rent. High quality chocolate, on the other hand, derives from cocoa raised more scientifically on plantations with expensive inputs. The economic incentive to grow high quality cocoa, therefore, faces the doubly unassailable problems of consumer preferences and the forest rent (Ruf, 1995a).³ We want to argue that difficulties in securing a return to quality in cocoa are themselves socially constructed, rather than natural, and may again trace to labor issues and to the state (Fold, 2002).

Rather than the important forest-rent approach with its relatively narrow emphasis on agronomic and economic factors, we take a commodity systems approach. This perspective has been developing under several related names, including global commodity chains, filières, and commodity systems analysis (see Friedland, 2001 for a recent review). The various strands have different emphases, but they share a strong orientation to social relationships. As Dixon (1999a) put it in recalling Friedland's original formulation (1984): "He gave commodities a social life by reminding us that people's labor and ideas, their technological developments, the power circulating between groups, the way individuals cooperate and their organizational structures are all critical 'inputs'" (p. 154). This orientation, as will become apparent, is central to our analysis, as well.

Particular strands of the commodity systems approach have developed the aspects of the commodity systems upon which we base our analysis of cocoa: (1) the motivation and control of labor influence the quantity and quality of production (e.g., Friedland et al., 1981); (2) quality of the product can contribute to demand, especially when consumers' socially constructed preferences include quality, as socially constructed (Raikes et al., 2000)⁴; and (3) the state in the

¹ Berry (1976), anticipating Ruf, argued that income from cocoa and labor not tempted away by other economic activities are more important than expected market prices for cocoa farmer's planting decisions, especially in light of the uncertainty of cocoa prices.

² The forest rent school has recently extended its analysis to explain the pronounced tendency of cocoa planting to deforest the tropics. With the falling forest rent as the main determinant of a short-term decision making orientation, cocoa planters have often clear cut the forest to generate cash from timber and to boost early cocoa yields even though shaded cacao trees yield longer. Moreover, migrants or their children tend not to replant when cacao trees show diminishing productivity, unless they have no alternative way to make a living, because the replanted trees do not benefit from the forest rent (Ruf and Zadi, 1998; Ruf, 2000). Marx, who also used the idea of rent to analyze agriculture, would have explained this deforestation tendency by the migrants rarely being land owners, but rather tenants. Without the motivation of land owners to invest long term in the productivity of the land, migrants and other tenants can be expected to run down the land, especially toward the end of their tenancy (Mandel, 1962). Ruf (2001) does take note of the importance of what he calls "secure land tenure" and notes the possibilities of cocoa as an agent for reforestation, but only when forest lands have been exhausted.

³ An earlier version of the same family vs. plantation argument emphasized not the forest rent but a willingness to accept lower returns as the reason for the alleged advantage of family cocoa farms over cocoa plantations (Jolly, 1939).

⁴ Consumption is an important recent emphasis in commodity systems analysis (see Dixon, 1999a; Raikes et al., 2000). In this article, we concentrate largely on production and the early raw materials

multitude of its more or less autonomous actions can constrain or enable commodity production and distribution (see Dixon, 1999b for a revealing example). Labor, the state, and quality are key to the contemporary commodity systems approach and to our own analysis.

2. Cases for analysis

Our paper compares three historical cases of commodity production. We are concerned with the commodity from growing, through harvesting, to sale in the market that takes it away from the producing country for subsequent manufacture and consumption. These are the initial stages of the cocoa/chocolate commodity chain (on commodity chains, more generally, see Gereffi and Kornzeniewicz, 1994). Our cases are quite different, for example in geographic location, historical moment, labor organization, and state behavior. The substantial differences mean that we need to provide a good deal of material about each; moreover, we cannot allow our efforts to reach general conclusions at the end of the paper to obscure each case's unique conjunctures. Our approach is to harness description to a comparative analysis.

We have selected our three cases because cocoa production turned downward in each. We did not select them according to a sampling scheme, for example, to provide contrasts on explanatory variables we thought to be important. After learning about the cases, we see that they do contrast in useful ways, for example on size of farm, type of labor, quality of cocoa produced, and behavior of the state. These contrasts will help us considerably in bringing the three cases together in the conclusion to try to make some general statements about downturns in cocoa, and perhaps other similar commodity production. Our generalizations, however, will be tempered by our strong sense of the special historical conjunctures represented by our three cases.

The three cases do represent the main successions in the history of cocoa growing over the last 400 years. Trinidad stands for the origins of the crop in Central America where it was widely cultivated by the lowland Mayas long before the Spanish invasion. Brazil helps us understand the late 19th century South American cocoa ascendancy in which Venezuela and Ecuador also took part. Ghana allows us to look at the cocoa boom in 20th century West African where the Ivory Coast has now passed all others to lead the world. The current importance of Southeast Asian cocoa cultivation, most

dynamically in Indonesia, is not represented here. Our historical analyses do not reach the late 1980s and 1990s when the market price for cocoa first fell and then plummeted.

This is a secondary analysis. We synthesize our explanations from other scholars' analyses of primary sources. We acknowledge that such secondary analyses run the risk of misrepresentation; selectivity and distortion can occur at each stage: primary source creation, primary analysis, and our secondary analysis.⁵ The secondary works and their primary sources range widely across the realms of history, anthropology, economics, agronomy, geography, and sociology. The sources for our two 20th century cases are more abundant than for our 18th century case. This requires us to be more speculative for the latter. We do not shy away from what we believe may be useful speculations, but we use such words as "may" to indicate this stance.

3. Trinidad

According to most accounts, the Spanish colony of Trinidad passed in one short year in the early 18th century from a growing prosperity based on production of high quality cocoa to a precipitous decline. This dramatic reversal cannot be adequately explained by a narrow focus on climate and disease. These factors need to be integrated into the twin problems of production and distribution faced by Trinidad cocoa planters of the period. Labor and the state will be central in our fuller explanation.

In the first quarter of the 18th century, Trinidad produced some of the best cocoa in the world. *Cacao* plants had only been introduced for commercial purposes from Venezuela around 1678 when competition in the tobacco export market from other Caribbean islands, Virginia, and the Carolinas became severe (Shephard, 1932b).⁶ Production expanded rapidly, and exports reached their height just after the turn of the century (Newson, 1976). Demand for Trinidad's beans with their superior flavor was so high that the harvest was usually placed under contract while the cocoa pods were still growing on the tree. Buyers were willing to commit to a higher price than that for the cocoa grown nearby on the mainland in Venezuela (on the latter, see Ferry, 1989). Trinidad's cocoa was so prized that the pirate Edward Teach, the "Blackbeard" of Ocracoke, North Carolina fame, ventured into the harbor of Port of Spain in 1716 to plunder a Spanish brig of its cocoa

(footnote continued)

production stages at that. This is more in the manner of earlier commodity systems work (e.g., Friedland et al., 1981). We recognize that a full analysis of the cocoa commodity system will require careful attention to stages in the commodity chain well beyond production.

⁵We appreciate the clear reminder from one of the reviewers about these risks in secondary historical analysis.

⁶Some *cacao* was found growing wild in Trinidad as early as 1616 and its plentiful growth was already noted in 1645 (Newson, 1976). Still, the switch in emphasis from tobacco to *cacao* seems to have happened in the latter years of the century.

cargo.⁷ French islanders, attempting to emulate the economic success of cocoa planters on Trinidad, started cocoa plantations nearby, but the Spanish responded with “a considerable troop of arms to dislodge the French from the land which they had usurped” (Borde, 1982b, p. 84).

On the basis of cocoa cultivation and exports, colonial Trinidad flourished according to the classic text (Borde, 1982b) or in more recent accounts, at least grew (Newson, 1976). The population of the two main towns, St. Joseph and Port of Spain, increased after a long period of stagnation (Newson, 1976). Then, suddenly in 1727, disaster struck. Although the trees continued to grow well, flowered, and set their fruit, the immature pods dried and blackened. The reason was uncertain at the time. One contemporary analyst pointed to a comet, another to climatic chilling (“vent de nord, vent de mort”); still another blamed a failure of planters to tithe to the church. One planter who regularly paid his tithe was reportedly spared. Perhaps, then, the theological explanation is correct, but tradition also tells us that this planter used a hardier *cacao* variety that produced an inferior bean. Unlike other planters, he could not sell his harvest through advance contracts. He was probably unable, therefore, to roll over his paper profits into expanded land holdings and plantings in the manner of the more successful planters. The latter might not have had the cash to tithe, but the same could not be said of the planter who received his payment only after the harvest. With cash in hand he would have found it hard to evade his tithe (Joseph, 1970; Shephard, 1932b).

Pierre-Gustave Borde, writing 150 years after the 1727 disaster, gave an explanation with a more modern ring: Trinidad’s cocoa was of such high quality because it was a different variety (*Cacao guianensis*) than its South American competition (*Cacao brasiliensis*). The colloquial distinction was between cocoa criollo (i.e., creole or native-bred cocoa) and cocoa forastero (i.e., foreign cocoa), but the delicate creole species was ironically ill-suited, according to Borde (1982a), to Trinidad’s variation in temperature and soil moisture. While the trees were young and maturing, their vigor overcame their poor fit to the local conditions. Once they had matured, however, they could not fight off the inevitable. Borde’s agronomic explanation appears to have anticipated the spirit, if not the particulars, of the forest rent argument.

Borde’s explanation does not, itself, explain the reportedly sudden demise of the cocoa crop in only 1 year. It is compatible, however, with more recent

observations that clear-cutting land preparation practices at the time contributed to soil erosion and exhaustion and exposed the *cacao* trees to the full force of the sun (Newson, 1976) and the explanation that the 1727 debacle was due to a fungus, perhaps *Phytophthora palmivora* (Shephard, 1932b) or *Ceratocystis* (Newson, 1976). A fungus could be expected to strike down less vigorous trees growing on exhausted soil.⁸

Whatever the cause, the result of the crop failure was devastating and widespread. Cocoa production essentially ceased, and plantations became overgrown. The financial pyramid of urban development resting upon tax revenues, resting upon plantation expansion, resting upon advance contracts, resting upon yields of high quality cocoa came crashing down. Population fell as colonists and their slaves left for the mainland. Those who remained were often hungry and suffered from epidemics. Some turned back to the pre-agricultural search for El Dorado (Naipaul, 1970). Only with the introduction of hardier but inferior cocoa forastero in 1756,⁹ this time planted under a protective canopy of taller trees, did cocoa cultivation revive. The 10,000 pounds produced annually in the 1770s, however, did not approach the 1704 peak of 248,600 pounds and only somewhat exceeded the smallest annual production recorded for the 1683–1719 period, 6930 pounds in 1699¹⁰ (Borde, 1982b; Jackson, 1904; Joseph, 1970; Newson, 1976; Noel, 1972; Shephard, 1932b). The second golden age of Trinidad cacao would not blossom until late in the 19th century (Lewis, 1996; Moodie-Kublalsingh, 1994).

This story of the rapid rise and fall of large scale, high quality cocoa production in Trinidad sounds tidy, but it leaves some puzzles unresolved. These puzzles point in the direction of a less biological, more sociological set of explanations. First, why, at least to judge by annual weights exported (Newson, 1976) did cocoa production not build steadily to 1727 and then fail, but rather fluctuate tremendously, with annual swings of 100 percent and more not uncommon? Prices fluctuated a lot, as well (Newson, 1976), but this is not surprising in the world of commodities. Second, how was it that cocoa farmers before 1727 got the monetary benefit of the high price for their high quality beans, paid for by

⁸ Leeds (1957) demonstrates the continuing uncertainty about the pathological agent at work when he calls it the “blast” but then admits he does not know if this was an unidentified epidemic or a hurricane (p. 13). This uncertainty is unresolved even in the most recent account (Coe and Coe, 1996, p. 28).

⁹ Forastero eventually hybridized with the few remaining criollo trees to yield the hardy and high quality trinitario that has now spread to Venezuela and elsewhere as the basis of much of the world’s premium chocolate (Coe and Coe, 1996). Efforts are now afoot to recover criollo genetic material in order to attempt further hybrids (Au microscope..., 1999).

¹⁰ The 1699 and 1704 figures are actually pounds exported and, therefore, would fall somewhat below total production.

⁷ This is a far cry from the apparent disregard with which English and Dutch pirates held cocoa a 100 years earlier in the late 16th century when they reportedly threw cocoa from Spanish ships overboard (Erneholm, 1948).

advance contract no less, even though the farmers had no apparent alternative use or sales outlet than the export market in Caracas? Cocoa buyers could presumably have told all producers to take the commodity price for generic cocoa or leave it and then turned around and captured the full premium for high quality Trinidad cocoa themselves.¹¹ Finally, if Trinidad's power in the cocoa market derived from the high quality of its beans, why was creole cocoa never replanted? Understandably, some farmers would have been chastened by the 1727 disaster to the point that they or their children would only plant forastero, but others would likely have been tempted by the lure of big, though risky, money and perhaps even tithed regularly or tried to shelter their trees from "le vent de mort."

Part of the answer to these puzzles may lie in Spain's inefficiently administered policy of trade monopolization toward Trinidad and its other colonies. After the foundation of the *Casa de Contratación* in 1503, the colonists were supposed to buy all their supplies, except slaves, from and sell their commercial products exclusively to the Crown, which, beginning in 1543, transferred its monopoly to a limited group of business houses in Seville, Cadiz, New Spain, and Peru (Walker, 1979). The monopolists charged predictably high prices for supplies and transport on top of crown taxes (Erneholm, 1948). Moreover, the irregularity of Spanish ships' visits, about which settlers in Trinidad were already complaining in the late 15th century (Williams, 1964), only worsened as Spain's ability to defend its trade ship convoys diminished. Together, these problems drove colonists in Trinidad and elsewhere in the Spanish Indies toward smuggling and other illegal trade arrangements (MacLeod, 1973; Walker, 1979) and must also have increased the uncertainty surrounding the profitable cultivation of cocoa. This uncertainty reached its height during the Wars of Spanish Succession at the beginning of the 18th century, just when European cocoa culture was taking off. By the time the Bourbons with their more liberal ideas of trade replaced the Hapsburgs, the damage from this uncertainty around trade may already have been done (Erneholm, 1948).

The Spanish had special monopoly aspirations toward chocolate. The colonists had no interest in cocoa while it was still used in its traditional Central American form, mixed with ground corn, red pepper, and red coloring to make a spicy, bitter, reddish drink. One Spanish observer thought the natives were drinking it as if it were blood (Coe, 1994; Gasco, 1997). Once some nuns began to mix cocoa with sugar, vanilla, and cinnamon late in the 16th century, however, the colonists developed a considerable taste for it. At first,

they tried to keep the method of preparation a secret by exporting it to Spain in cakes. Once the secret leaked out, Spain began to import the beans, themselves, with Venezuela, which provided the main market for Trinidad's beans, serving as the prime export station through its link to Veracruz. In the late 17th century, chocolate concoctions were rich, exotic, and quite expensive, and their consumption was largely restricted to the upper classes (Montanari, 1994; Schivelbusch, 1992; Wickizer, 1951). In the early 18th century, prices fell and use spread. During this very period of rising demand, however, Spain, long in decline as an economic power, at war with the English and Dutch, and caught up in a problematic alliance with the French, maintained trade with its new world colonies on only an irregular basis.¹²

This story of Trinidad's great cocoa opportunity lost to Spanish neglect and decline would appear to reach its greatest irony in the passing of the highly sought creole cocoa from the island. By this reasoning, if only the Venezuelan link to Spain had been dependable, the demand for Trinidad's cocoa might have spurred an upward spiral of local development that no fungus could have interrupted for very long. Of course, this Spain-centered account is overly simple. As Spanish trade dominance waned, other European powers and their commercial classes stepped in to sell and to buy, both legally and through smuggling. Moreover, large Mexico City merchants, involved in both intra-Americas and America-Europe trade, had grown increasingly independent of merchants in Seville and Cadiz. They favored the growing diversity of trading partners and brokered cacao exports that came to them from Venezuela via the port of Veracruz (Walker, 1979). Spain's decline is part of the story, but it is not sufficient to explain the collapse of Trinidad's cacao production. In fact, Spain's weakening trade monopoly may have opened new opportunities for cacao growers.

Labor issues surrounding the actual production of cocoa complement trade patterns in suggesting answers to the puzzles of the 1727 debacle. Demand for Trinidad cocoa would not by itself sustain the boom. The crop had to be produced, and this required labor,¹³ but plantation labor was hard for the planters to come by. Of course, cacao does not have to be produced on plantations. In fact, it lends itself well to family farming

¹¹This has been precisely the current fate of unorganized cocoa growers worldwide as they face an increasingly oligopsonistic market for their product (Clairmonte and Cavanagh, 1988).

¹²Earlier claims for total disruption (e.g., Shephard, 1932b) have more recently been tempered (Walker, 1979). Still, Walker's summary chart (1979, p. 227) shows tremendous variation. In the period from 1701 to 1740, the number of vessels of any kind that left Cadiz for the New World during 1 year was less than 10 ships in 17 years, from 10 to 20 ships in 12 years, and greater than 20 ships in 11 years.

¹³Compared to other tropical export crops, cocoa is not as labor-intensive as tea or rubber, but it is more labor-intensive than oil palm. Cocoa most closely resembles the labor requirements of some types of coffee (Lass, 1985).

because of the relatively low capital inputs required to cultivate the trees, harvest the pods, and prepare the beans for shipping (Stinchcombe, 1995). Indeed, as the proponents of the forest rent approach have shown, cacao production has expanded recently through family based forest clearing and planting (Ruf, 1993). The New World model, including Trinidad and, as we shall see, Brazil, however, was plantations, not family farms. The Crown's initial grants of native Americans in accessible areas to four eminent colonists in Trinidad under the *encomienda* system was not designed to mobilize labor but simply to extract tribute. Nor did the recruitment of indigenous people in the less accessible forests and mountains to missions make them available for production labor. On the contrary, the missionaries kept their charges for labor on mission lands. The Crown, bowing to pressure from landowners, sent the missionaries off to Guyana in 1708 and, by 1727, had phased out all but one of the *encomiendas*. Nonetheless, the supply of indigenous labor remained short given the insistence of the government on allocating and rationing Indian labor and the accessibility of the mountains for a preferable subsistence life. Reliance on native American and African slaves was little more successful in this period because the Trinidad planters were far from wealthy enough to buy the many slaves they needed and were always tempted to sell the more expensive African slaves in Venezuela or nearby islands for a quick profit instead of putting the slaves to work on expansion and waiting for profits several years later (Newson, 1976). Irregular production due to insufficient labor, therefore, probably contributed to the irregular exports of the decades before 1727.

Moreover, planters' capacity to extract intensive labor from slaves was not nearly as great in 18th century Trinidad (and other Spanish colonies in the Caribbean) as in such other islands as Barbados that operated as slave societies. In true slave societies, the return to slave labor was much greater due to concentration on lucrative sugar production, so planters had greater motivation to control their slaves fully. Planters in slave societies had coalesced much more into a solidaristic class through long practice of estate management and, therefore, spoke with one voice regarding their interests. Finally, planters in slave societies had much more influence in the island government, which in turn supported planter control over slaves. Trinidad's *cabildo* form of government was more an urban bureaucracy with ties to the Spanish metropole rather than to planters (Stinchcombe, 1994). Thus, the state in Trinidad was too autonomous from the planters to help solve their labor control problem.

The disease component of the 1727 debacle allows us to speculate about an additional labor element. *Cacao*, especially the creole variety, is a fragile crop that needs considerable care. It is susceptible to viruses, fungi, and

insect infestations.¹⁴ To the extent that losses in colonial Trinidad could have been controlled by assiduous implementation of known techniques, a good supply of well-motivated labor would have been essential. We have already seen that the supply of labor was in doubt in early 18th century Trinidad, but the motivation of those at work may have also been a problem. Most agricultural workers were either slaves or native Americans allocated to private landowners from the *mita* pool of forced labor formally reserved for public works. The poor motivation of forced labor may have contributed to conditions favorable to disease, such as poor pruning, weeding, and irrigation, and removal of diseased trees. Well-motivated labor, willing to put forth the effort this crop requires, would be desirable wherever *cacao* is grown. In Trinidad, with considerable variation in soil moisture and temperature (Borde, 1982a), motivated labor would have been particularly useful because of the need for discretion in adjusting to environmental variation and uncertainty. The labor problem in Trinidad was, therefore, the likely combination of not enough workers, working not very intensively without adequate attention to good practices and environmental variation.

Common explanations of the demise of cocoa in Trinidad rely on biological or agronomic factors. Disease in the fields, worsened by intensive plantation methods, and the mismatch between quality cocoa plants and Trinidad conditions are important to this story, but by themselves they do not explain cocoa's decline. Instead, more sociological factors associated with commodity trade, the failure of Spain's colonial regime, and the consequences of reliance on insufficient, poorly controlled, and forced labor flesh out the cocoa story at this time. This was a complex commodity system where laborers, planters, and state shipping agents played primary roles with a large supporting cast that included the Church, the *Cabildo*, and private traders. We turn now to Brazil, which we can investigate in light of these same factors while realizing in contrast that we are no longer dealing with a colony and that plantation labor methods were well developed.

4. Brazil

Cocoa production of modest scale has a long history in Brazil. Jesuits in the 16th century exported cocoa they found growing wild near the Amazon (Coe and Coe, 1996). In the 18th century, declining Venezuelan exports created an opening for Amazonian exports (Alden,

¹⁴ Even in the post-World War II period, dominated by the hardier *forastero* variety, disease alone is estimated to have resulted in losses approaching 30 percent world-wide (Minifie, 1989; see also Yoon, 1998 on new threats).

1976). In the late 18th century, disruption of established trade patterns due to the American Revolution and the Napoleonic Wars allowed Brazilian exports to expand. Cocoa along with rice, however, took second and third place behind cotton in this temporary export bubble (Frank, 1969). Cocoa exports from the southern portion of Bahia in northeastern Brazil, where the crop became concentrated, evolved favorably. From an annual average of 2900 tons in the 1840s, the tonnage shipped increased 259 percent by the 1890s, supported by a 119 percent price rise. Still, by the last decade of the 19th century, cocoa only accounted for 1.5 percent of Brazil's exports (Furtado, 1963).

Cocoa production did not accelerate toward a truly large scale until the 1890s. Expansion in Brazil responded to the shift in demand in the new century toward the ordinary grades of cocoa that Brazil along with West Africa produced for milk chocolate (Wickizer, 1951), which was only invented in 1879 by Nestlé among others (Coe and Coe, 1996). Where the ordinary grades accounted for 22 percent of world exports in 1895, the proportion had grown to 58 percent by the 1909–1913 period and fully to 82 percent by the 1926–1930 period (Shephard, 1932a, p. 148). In 1937, Brazil's total cocoa production reached a peak of 138,000 tons and then declined until the mid-1940s (Knight, 1976). To most students of the Brazilian economy, this decline has presented no puzzle. The conventional explanation (Calcagnotto, 1991, summarized in Ruf, 1994; Wythe et al., 1949) has been West African competition: the huge increase in exports there drove prices down to six cents per pound, discouraging growers. This explanation undoubtedly has some truth to it because when West African production declined and the price went way up in 1946, Brazilian growers followed by bringing in a 1947 crop of 145,200 tons (Wythe et al., 1949).¹⁵ Still, our exploration of the 1727 cocoa debacle in Trinidad suggests caution in accepting conventional explanations about cocoa. For starters, we should not simply accept Brazilian competitive disadvantage as an explanation, but investigate its sources.

Not only did production decrease starting in the mid-1930s, but so did productivity. In 1935, Brazilian cocoa trees yielded 697 kilos per hectare. By 1973, productivity had shrunk over 30 percent to 478 kilos per hectare (Knight, 1976). The proximate reasons are well known and are consistent with the forest rent approach. Shade was rarely provided after the forest was burned off.¹⁶

Plantings were haphazard and overly crowded. Weeding was minimal and pruning absent. Disease control practices were lacking. The soil was depleted by traditional techniques that rarely included so much as applying fertilizer, such that the cocoa region's soil came to test almost uniformly too acidic and deficient in key minerals. Old (the technical term is “decadent”) trees were rarely replaced, even though cocoa plantings begin to suffer declining yields after 40 years, so that by 1966 an estimated 60 percent of Bahian cocoa trees had reached that age. And cocoa culture, whose success is quite sensitive to optimal soil and rainfall, was extended to less than optimal areas of lower natural fertility and subject to drought, at least after 1940 (Knight, 1976; Leeds, 1957; Zehntner, 1914).

Why, though, did Brazilians growing cocoa plant haphazardly, deplete their soils, fail to replace their decadent trees, and spread out into relatively unproductive lands? The reasons for these counterproductive practices require us to piece together new explanations that, as with Trinidad, bring trade in the commodity together with the quality and quantity of labor.

An important part of the answer is probably a short-term boom-and-move-on orientation to commodity extraction. Why replenish the soil and replant younger trees that will not bear at all for 5 years if you expect cocoa to provide only a burst of profit? We do not have historical attitude data to demonstrate this orientation, but the boom-and-decline pattern is a clear constant through six distinct cycles of Brazilian economic history: sugar in the Northeast in the 17th century; the Minas Gerais gold rush from 1700 to 1750; cotton in the Northeast again from 1750 to 1813; rubber in the Amazon from 1870 to 1910; cocoa in southern Bahia in this century; and coffee in the South beginning in 1830. Each boom began as a period of Brazilian monopoly with a large migration to the region where conditions were favorable, a migration that frequently depopulated the area of the previous, fading boom. Then, as other areas in the world began to produce the commodity, Brazil's market share declined. This, along with environmental degradation and technological backwardness diminished productivity and profits, induced an “overwhelming disillusion and pessimism” among producers (Leeds, 1957, p. 7), and led to mass exit from production of the commodity (Baer, 1983). While a short-term, boom orientation may have become ingrained in parts of the Brazilian culture (Leeds,

¹⁵ Growers could not produce a substantially larger crop in just this 1 year by planting new trees and probably not by improved care of existing trees. One possibility is that they warehoused fermented and dried beans in the earlier year in hopes that the price would rise, although warehousing risks substantial loss due to pests and rot. Another possibility is that the measurement of crop sizes is inaccurate or that comparison of weights recorded at different points in processing distort such comparisons.

¹⁶ Not all Bahian cacao was planted without shade. In some areas, the rainforest canopy was retained with only the under-story cleared for cacao planting. This method, called “cabruca,” has a lower yield but better soil conservation, moisture retention, and insect control characteristics. Farmers in the 1980s often held onto it despite strong government encouragement to eliminate shade in order to produce larger crops. When prices plummeted in the 1990s, the farmers' risk averse conservatism was vindicated (Johns, 1999).

1957), these attitudes have been shaped by world trade in commodities that long has jerked Brazil like a marionette (Frank, 1969).

Not only natural resources are wasted by intense, short-term commodity extraction. As Bunker (1985) has shown in the Amazon case, the Brazilian government's efforts to develop infrastructure in support of a new commodity have been wasted when the commodity is abandoned. The Brazilian state did not contribute directly to the decline of cocoa production, as did the Spanish colonial regime in the case of Trinidad, but it did not overcome the fundamental orientation to quick profit extraction that has been a basic cause of cocoa's decline there. State efforts to lengthen growers' time orientation to profit might have taken the form of extension work and research on new hybrids, but both were largely absent until the early 1960s (Alvim, 1976). The Brazilian federal government in the first quarter of the 20th century was dominated by the wealthy export oligarchs of the southern coffee regions to whom it was largely responsive in building a strong export-oriented national economy. To this end, the federal government invested heavily in railroads, shipping, and banking (Topik, 1987), which were also useful for cocoa exporting. The Bahian provincial state was responsive to local cocoa planters, but its resources were more limited (Pang, 1979), and the planters themselves were far from united (Mahony, 1996).

The best cocoa land in Bahia was often cleared by squatters who were then dispossessed of the land by large landowners, often through violence, swindles, and manipulation of the law (Leeds, 1957; Mahony, 1996, 1997; but see also the vivid descriptions of the 1920s in Jorge Amado's 1945 novel *The Violent Land*). Some large landowners of the boom period had begun as small holders, but others traced family roots to slave-owning estate owners long before the cacao boom, going back even to owners of large sugar mills. By the 1910s, fewer than 20 families probably dominated cacao production in Ilhéus, the most important municipality for cacao growing in Bahia (Mahony, 1996).¹⁷

Some of the expropriated squatters and those the cocoa boom attracted late and with relatively little cash ended up on very small farms in marginal locations. After World War II, undeveloped, second class land in southern Bahia still had the potential to increase total production substantially, and it was available from the state for less than 40 cents per acre. The spread of small holdings into these marginal sections in the 1940s concentrated large scale production on a small part of the total acreage planted in *cacao*; less than 9 percent of

Bahian cocoa farms produced 60 percent of the 1947 harvest (Wythe et al., 1949).

The pull of these lands was partly responsible for a severe labor shortage on the larger, more productive *fazendas*, which ranged from only 35 ha planted in cocoa up to true *latifundia*. *Fazendas* were worked almost entirely by a true rural proletariat. The land owner rarely administered the farm, leaving an overseer to manage the wage labor. Workers were paid the minimum wage, or less (the fate of 47 percent of rural laborers in one survey), from which a 30 percent deduction was often made for housing, plus further deductions for purchases at inflated prices from the company store, plus deductions for infractions, such as coming to work after the siren went off. Not only were these workers oppressed, but they were also exploited according to computations that show labor's marginal value at 88 percent above its cost in one case studied (Knight, 1976, p. 256). Though nominally wage workers, the oppression and exploitation suffered by Bahian *fazenda* laborers may have reduced their motivation to the level of forced labor. If so, they would have resembled Trinidad's slaves and *mita* laborers whose poor motivation to care for the finicky *Cacao creole* we have speculated may have contributed to the 1727 debacle. Moreover, not uncommonly, Bahian cocoa laborers were paid according to their output, which led them further to neglect quality for quantity. Thus after World War II, the quality of Bahian cocoa declined at the same time that the quality of competing cocoa improved.

Given the working conditions on Bahian *fazendas* and with unsettled lands not far off, it is easy to imagine low motivation, high absenteeism and turnover, and the resulting labor shortage.¹⁸ And short of labor, the owner and overseer would be hard pressed to use the available labor on planting new trees, at three times the labor input of an established farm, even if they could count on a productivity gain after 10 years (Knight, 1976; Leeds, 1957).

¹⁸Labor shortage has a long history in Brazil. Although the abolition of slavery might have been expected to alleviate the shortage of wage workers, apparently it did not. According to Furtado (1963), former slaves preferred to work just enough to achieve subsistence and responded to wage premia offered by desperate employers by reducing rather than increasing the hours they worked. With strong racist overtones, Furtado reasons as follows: "The man raised under slavery is altogether unfit to respond to economic incentives. Because he has almost no habits of family life, the idea of accumulating wealth is almost entirely alien to him. Moreover, his rudimentary mental development sets narrow limits upon his necessities. Work being a curse for the slave and leisure an unattainable blessing, raising his pay above the cost of his necessities—which are defined by the slave's subsistence level—promptly induces a strong preference for leisure" (1963, pp. 153–54). We can easily imagine the landowner frustrated by the shortage of wage labor adopting a similar ideology. Today economists call this a "backward-sloping supply curve of labor" (Ellis, 1981).

¹⁷Mahony's (1996) well-documented emphasis on the importance of large land owners in the birth and flowering of the Bahian *cacao* boom runs counter to prevailing scholarly and popular belief (see her final chapter on the seemingly inexhaustible legs of this belief).

Bahian cocoa never had a good reputation for quality. The better part of the crop was typically graded “regular” rather than “superior.” The chief cause of this poor quality was bad fermentation practices.¹⁹ Inadequate knowledge of good practices prevailed. The result was that workers did not regulate crucial variables, chiefly temperature of the fermentation mass. The organization of harvesting made the problem of poor knowledge worse. In the absence of cooperative fermentation, small growers often did not have enough ripe pods at one time to generate the needed heat in fermentation (on this problem, see Wood, 1985, p. 477). Under-fermentation and poor quality resulted. Sometimes workers who were paid by the quantity of pods processed added immature or rotted pods to fill out the fermentation mass. The former lacked the sugar to fuel the fermentation. The latter could ruin the whole batch.²⁰ Small growers also had difficulty maintaining the largely air-tight troughs in which the Bahian fermentation process was carried out. While the subsequent steps of drying, cleaning, sorting, and transport did not suffer from as great a knowledge deficit as the chemically complex fermentation, analogous problems in executing best practices with unmechanized, small-scale operations, contributed further to the poor quality of Bahian cocoa (Leeds, 1957).

Given the rich natural conditions, low productivity and worker exploitation resulted from fazenda owners’ choices. They could have invested in modern techniques that would have increased yields and quality, but this would have made small holding profitable, empowered plantation workers by virtue of the greater training and education required, and incurred planter dependence on an expanded middle class of experts. Instead, fazenda owners used their control over material resources and political institutions to stabilize and preserve a largely two-class social system. The values of neither class favored improved production, the large land owners being oriented to conspicuous consumption and speculation, the rural proletariat to survival, and neither to investment (Leeds, 1957). Overall, cheap land and labor and low capital needs called forth a social system that in turn kept land and labor cheap and locked in production methods with minimal capital requirements. This was a simple commodity system shaped more by relations of production than by those of distribution. The state was less a principle player than in Trinidad, but what the state did and failed to do helped constitute the baldly exploitative class relations of Brazilian cocoa production. These social factors established the founda-

tion for the short-term business orientation and the resulting poor agricultural practices that were the proximate causes of decline in Brazilian cocoa production.

5. Ghana

As Brazil lost out in competition for leadership in the sale of bulk quality cocoa to West Africa, we turn now to Ghana, the leading producer in that region during the first half of the 20th century. Ghana is especially useful in this analysis because small-holding rather than plantation production predominated in cocoa. Labor was, therefore, organized very differently. Still many problems analogous to Trinidad and Brazil arose.

In Ghana, like Trinidad and Brazil, cocoa production did not follow or maintain an expected upward trajectory. At independence from British colonial rule in 1957, Ghana was the world’s leading exporter of cocoa although production could have been even greater. In the following decades, cocoa production and Ghana’s share of world production consistently declined. From 566,000 tons in 1964/65, production fell to 159,000 tons in 1983/84 (Jaeger, 1999; Raffaelli, 1995). Why did production fail to reach its potential and then decline after independence? While competition in an administered world market and disease in the fields are conventionally implicated in this decline, factors reminiscent of Trinidad and Brazil also come into play. Understanding these factors requires some understanding of Ghana’s historical development, in particular certain British colonial and, later, Ghanaian state policies and their implications, and particular issues concerning the organization of production.

In 1788, the Spanish brought forastero cuttings to Fernando Po, an island in the Gulf of Guinea, close to what was to become first the Gold Coast and later Ghana (Coe and Coe, 1996; Gordon, 1976b). Although the Dutch, Swiss, and English may have played a role, Ghanaians attribute the introduction of cocoa from Fernando Po to Ghana around 1879 to a local farmer, Tetteh Quarshie. By 1890, Tetteh Quarshie’s plantings comprised almost 300 healthy and productive trees. In later years, when Ghana’s cocoa production led the world, Tetteh Quarshie took on mythic proportions (Harwich, 1992).

People in the Gold Coast’s South eagerly took up cocoa farming (Gordon, 1976b). For a long time southerners had used the products of the forest as sources of cash; rubber, palm oil, and palm kernels were all traded. Cocoa compared well against these commodities, as it was easy to plant and grow and relatively quick to yield. Moreover, cocoa demanded less labor than the traditional alternatives, and it was an ideal crop

¹⁹ After the pods are harvested, they are split open and massed for several days of fermentation to stop seed germination and to get the fruit to slough away from the seeds or nibs. These nibs are then dried before bagging for transport to warehouses at the port.

²⁰ Some experts disagree that under- or overripe pods pose much of a threat to proper fermentation (Wood, 1985).

for the forest country, which had hardly been exploited until cocoa's arrival.

The colonial government had to work harder to encourage the production of cocoa in Ashanti, the northern extremity of southern Ghana. While southerners had long been in contact with European traders and had adventured up and down the Guinea coast as traders and artisans, the Ashanti lived a peasant lifestyle. Women farmed for subsistence, and men did not engage in agricultural activities. So there, the colonial government established model rubber and cocoa farms and, as an inducement, allowed anyone who put in 1000 cocoa plants to buy one Dane gun, a keg of gunpowder, and two lead bars (Ake, 1981, p. 54).

On the surface, British efforts aimed at encouraging cocoa production seem to have worked. By 1910–1911, Ghana was exporting about 40,000 tons of cocoa per annum, making Ghana the largest single producer in the world. By 1939, cocoa accounted for about 80 percent of the value of Ghana's exports. In the mid-1960s, Ghana was the world's leading exporter of this crop with output estimated at almost 570,000 tons per annum, 37.5 percent of the world's total (Gordon, 1976b; Raffaelli, 1995). This success occurred despite British failure to provide extension services and other infrastructure in support of production. As Stephen Hymer put it, "The industry was developed by Ghanaian capital, Ghanaian enterprise, and Ghanaian technology, with little help from the colonial government" (1971, p. 141).

Why were the British so eager to advance cocoa production as a cash crop in this colony, yet unwilling to provide all the conditions for its success? Colonial administrators in Africa lived "on a shoe-string" (Berry, 1992). The number of European personnel posted to colonial administrations was limited. Officials were expected to raise enough revenue from their colonies to cover the costs of administering them, as the British exchequer was reluctant to subsidize either recurrent or capital costs. Yet, even as the West African colonies prospered from the rapid expansion of cocoa and other cash crops that were meant to cover the colony's administrative costs, officials worried that farmers would neglect food crops. Moreover, officials did not understand that the traditional methods of production they found in use were well adapted to the plentiful supply of land coupled with a shortage of labor. Instead, officials characterized these practices to be unskilled, uninventive, neglectful, and disorganized and believed them to result in poor quality produce, which brought low prices in Europe (Hopkins, 1973; Hymer, 1971). So, official policy wavered between encouraging and limiting export crop production (Berry, 1992).

Cocoa production was further confused, and effectively limited, by a raft of colonial policies. The British orientation to administering justice in their colonies relied on establishing what they took to be the

indigenous system of law, custom and practice, but they constructed a rigid judicial system in Ghana on a volatile and shifting base. Power relations, in fact, were negotiated and renegotiated among various African groups, yet the British attempted to set these relations in stone as if they represented an established, pre-colonial order.²¹ Among the more misguided British efforts was designating tribal or social origin as one of the main determinants of which law, custom, and practice was to be brought to bear in addressing a dispute. Most groups, however, encouraged the attachment of strangers to their groups because numbers were critical to the power base of various tribes, in particular their ability to field labor resources. So African communities were far more dynamic than the British assumed and, in particular, the social, economic, and political impact of social origins was completely misconstrued. For example, in the Gold Coast, by endorsing the view that a chief's right to collect cocoa rents depended on the social origin of the farmer, the colonial authorities helped to intensify disputes over boundaries between "stools" (i.e., chiefdoms) (Berry, 1992; Hill, 1963).

Land tenure was often misconstrued, as well. As cocoa farming spread in southern Ghana during and after the 1890s, would-be farmers sought access to suitable uncultivated forest land by negotiating with heads of local families or chieftaincies. Often they acquired planting rights or even the land itself in exchange for money, labor services, and/or annual "gifts" of produce or cash that served to acknowledge the continued authority of local leaders (Berry, 1992). Such transfers, however, were not fixed as colonial officials assumed them to be. For example, the sale of land or other assets did not necessarily extinguish the rights of the seller. The outcome of any particular transaction depended on the history of relations between the persons involved and the way they were interpreted at the time of the land acquisition.²² As the rush for land speeded up, and the confusion caused by British attempts to administer the land grew, there was a great deal of litigation between stools. This development accelerated the sale of land, as money was needed to pay lawyers, and the additional land disputes these sales created added further to the British administrative burden and the confusion its subsequent decisions

²¹ Anthropologists were employed to establish such pre-colonial custom and practice. They operated on the assumption that colonial intervention had diverted African society from its "natural" evolutionary path and assumed that a stable, orderly society existed prior to this colonial intervention. So their goal became to discover the "normal" social order and encourage the colonial authorities to return African society to this state (Berry, 1992).

²² Berry (1992, p. 338) quotes Chief Kinyanjui who told the Kenya Land Commission when questioned about his role in a past land dispute: "I do not remember what I said before the Commissioner eight years ago. Tell me who summoned me to give evidence. What I said depends on whose witness I was."

created, resulting in still more litigation and on and on (Berry, 1992; Hill, 1963).

So, even though on the surface it seems that British policies aimed at establishing cocoa as a cash crop in Ghana were successful, the success the colony experienced was less than it potentially might have been. Litigation, land tenure decisions based upon inappropriate assumptions, and the absence of infrastructure all worked to restrict cocoa production in the region. Furthermore, early expansion of this crop was soon reined in once the more arable southern land with closer routes to market came under production.

Matters did not improve much after independence. While economic policy in West Africa was oriented toward encouraging production and maintaining a stable cocoa price, government involvement in its production served to limit the potential of this crop.

Cocoa production frequently involved government both directly and indirectly (Miranowski and Simmons, 1976). Cocoa served as a source of tax revenue and foreign exchange. Government agencies often became involved simultaneously in price stabilization efforts that disconnected the producer price from the market price, planting subsidies, fertilizer and pest control assistance, and husbandry improvement programs to encourage increased production. For example, during the late 1960s, the price Ghanaian producers received from the government's marketing board averaged less than half of the world price. Such a low return provided neither the current nor the expected future income for farmers to care for their trees or gather the pods. Moreover, such prices were inconsistent with government expenditures to subsidize replanting or spraying campaigns. So, as in the colonial regime, tensions existed between state support for this crop, on the one hand, and the unwillingness or inability of the state to provide the conditions for the continued growth of this important commodity.

The state suppressed cocoa production in Ghana in other ways, too. Heavy state involvement continued to exert a strong influence on economic activity. State economic enterprises, for example, played a substantial role in almost all sectors of the economy with the government involved in over 230 such enterprises. These enterprises were subject to political interference in their day-to-day operations, performance was poor and productivity low. As the economic problems of the country intensified in the 1970s, state enterprises also became a convenient reservoir for surplus labor. The extreme level of their over-staffing was one of the major factors underlying Ghana's poor economic performance. Official statistics on formal employment suggest that the public sector as a whole employed well over three people for every one employed in the private sector (Roe and Schneider, 1992). The Ghana Cocoa Marketing Board, reformed as the Cocobod and responsible for

cocoa marketing and other support services to cocoa farmers, provided a key example of such over-staffing. Roe and Schneider (1992) reported that the Cocobod employed approximately 100,000 people, or about 10 times the number employed when cocoa production was at its peak. Around 25,000 of these were estimated to be non-existent or "ghost" workers (Roe and Schneider, 1992, p. 26).

The decline in Ghana's cocoa economy provided both the impetus and the empirical data for much creative work on how government policies in Africa's agricultural sector ought not be tailored. Detrimental policies have included overvalued exchange rates, price policies designed only to extract surplus from the sector for the benefit of the urban bureaucracy and non-agricultural sectors, and state intervention in marketing and handling the crop. Bates (1981) explained these policies and practices as the result of a state that had not achieved the institutional support and autonomy to pursue long-term national development. Instead, it depended on elite support to stay in power, support for which it paid by siphoning off the surplus.

As a result of these adverse conditions, tens of thousands of tons of Ghana's cocoa were smuggled annually to neighboring Ivory Coast by the end of the 1970s (Jacobait, 1991). This recalls Trinidad growers' efforts to circumvent the Spanish trade monopoly through illegal use of other shipping.

Non-policy factors also influenced the trajectory of cocoa production in Ghana. In contrast with plantation systems elsewhere, including Brazil, cocoa production in West Africa became dominated by small-holders (Hill, 1956, 1963), sharecroppers who often became small-holders (Gordon, 1976b), and migrants (Hill, 1963).²³ Smallholder-based production worked in favor of buyers, who had the upper hand in an atomistic market. After carting their produce to market, in the early days by foot along poor roads, small holders would sell at the going price before making the trek home. These growers were unlikely to have had the necessary information or leverage to negotiate a favorable price. In the post-Independence period when all cocoa was sold to the marketing board that would then market the country's cocoa to the few buyers, small holders were in an even more disadvantageous position. They were presented with a take-it-or-leave-it price that, in the early days, reflected market buoyancy, but that later bore little resemblance to market prices, severely limiting the profitability of cocoa production for producers

²³ Generally, cocoa plantations have been considered a failure in West Africa relative to other regions, such as Malaysia and Brazil. According to Gordon (1976a), few economies of scale exist in production, fermentation, and the drying processes; expensive equipment is not required. The forest rent approach would go further to argue that the Ghanaian small holder economy is generally more efficient than plantations for producing cocoa.

(Konings, 1986). These arrangements were unlikely to motivate farmers/laborers to produce large amounts of superior quality cocoa. Indeed, at times during the post-World War I period, dissatisfaction with the return offered to growers resulted in “hold-ups” where producers withheld their produce from the market (Konings, 1986). At other times, the low prices caused them to flood the market in hopes of recouping revenues in the short run while planting fewer trees out of pessimism for their futures (Hopkins, 1973).

Quality issues also help to explain the decline of cocoa production in Ghana. The production of high quality cocoa was not necessarily in trading firms’ best interests. The trading firms on the coast were concerned primarily to ensure that ample quantities of cocoa were produced. Manufacturers, on the other hand, wanted both ample supply to ensure a favorable price and good quality. Given their narrow focus, it is hardly surprising that the trading firms resisted the introduction of inspecting and grading or the payment of a price differential for high-grade cocoa (Gordon, 1976b). The extreme concentration of trading firms—in the 1980s, two firms controlled three quarters of the world cocoa trade (Clairmonte and Cavanagh, 1988)—may explain these firms’ success in turning aside manufacturers’ demands for quality beans.

In addition to this conflict of interest, there were technical difficulties associated with establishing price differentials for quality during the colonial period. The meaning of quality as a criterion was far from clear. Manufacturers insisted that flavor was their main criterion in assessing the quality of cocoa. But flavor could not be assessed at the point of grading in the country of origin as flavor is developed after roasting. Difficulties in establishing quality prior to processing made it hard to reward growers for superior beans, and because growers did not receive a premium for high quality beans, there was no incentive to take the extra care to produce them. Yet, judging quality prior to processing is now possible. Manufacturers have now defined what they are looking for in bulk cocoa and some basis for the establishment of sub- and superior standard beans appears feasible (Wood, 1964). According to Simmons (1976), first grade cocoa can be produced if care is taken to pluck only ripe and healthy pods and to turn the fermentation heap properly. Good quality is also produced as a result of the existence of efficient produce inspection and grading organizations. Quality premia were paid in Nigeria during the 1940s and 1950s, resulting in a vast improvement in the quality of cocoa. This improvement occurred largely through better preparation of cocoa, including more careful fermentation (The Main Products, 1956, p. 151). Nigerian cocoa farmers were especially motivated to produce higher quality beans when low overall price levels made the quality premium more valuable (Berry, 1975, p. 82). Ironically, state sponsored research in

Ghana, ongoing since 1937, has made real progress in hybridizing higher yielding and disease and pest resistant *cacao* varieties, but these new hybrids could not yield the desired return without improvements in agricultural practices (Asomaning, 1976), which in turn depend on the motivation a better return provides for growers.

The 1990s in Ghana saw a striking reversal on many of these counts as economic policies were reformed. Growers received higher prices, both from a drastically shrunk Cocobod and directly from buyers. Output rebounded and Ghanaian cocoa gained a reputation for high quality based on careful fermentation and drying. Quality premia were paid by a quality conscious Cocobod, the only state marketing board remaining in West Africa after a decade of “liberalization”. These quality premia were especially valuable in the 1990s when world-wide oversupply depressed prices for bulk cocoa. Ghana’s growing reputation for quality cocoa contrasts with a more general decline in national distinctions. Ivory Coast growers now smuggled their cocoa into Ghana (Cox, 1993; Daviron and Gibbon, 2002; Fold, 2002; Jaeger, 1999; Tiffen et al., 2002; Wrong, 1995, 1996).

The quality of Ghanaian cocoa is not only a matter of taste but also of low pesticide use in comparison with plantation-grown crops in such countries as Brazil and Malaysia. Small holders in Ghana cannot afford much pesticide use, so they have reverted to traditional methods of insect control, primarily careful weeding, pruning, and waste disposal. The Cocobod, moreover, monitors the introduction of new pesticides and, thereby, has avoided some problems of crop contamination and worker poisoning seen elsewhere. Without large chemical inputs of pesticide and fertilizer, Ghanaian cocoa yields are relatively low, but in a period of depressed prices, low yields are less costly (Cox, 1993).

So quality cocoa is not produced simply by the variety of tree coupled with environmental conditions. Rather, as we have speculated in the Trinidad case, social conditions and government policies strongly influence the care with which *cacao* is grown and processed and, hence, the quality of the cocoa produced. If quality cocoa is socially as well as biologically produced, as suggested by the Nigerian experience, and if premium prices for quality cocoa can be realized at market, as shown in Nigeria and Trinidad and by the most recent period in Ghana, then the low quality of Brazilian and of earlier Ghanaian cocoa and the accompanying low prices to growers should not be taken for granted as they have been in the past.

In summary, the British colonial regime attempted to administer Ghana on a shoe string and encouraged cocoa production as a potentially exploitable cash crop yielding surplus in support of their administration. As a result of their contradictory policies, however, this

regime did not exploit the cocoa cash crop to its fullest potential and a substantial amount of surplus remained with the growers. This gave a short-run incentive for expansion to the small holders who dominated production in Ghana. Later, these small holders were at a distinct disadvantage in selling their crops. In addition, the British created a future problem by virtue of rigid legal provisions, which had the unintended consequence of reducing flexibility in land tenure and labor resources. This inflexibility adversely affected cocoa production in the long-term. After independence, the new state adopted a similar administrative system but brought greater exploitative pressure to bear on producers. As less surplus accrued to them, this policy acted as a further disincentive to maintain or expand production. Instead, inefficient administration of cocoa in newly independent Ghana absorbed much of the cocoa surplus. Finally, scant emphasis placed on the production of high quality cocoa further limited the expansion of this crop and the wealth it has the potential to produce. The main actors in Ghana's cocoa commodity system have been small holders and the state with a powerful metropole and later trading companies acting in the wings to shape the policies of the local state. With echoes of Trinidad, the product market to which the state partially exposed small holders was critical to the trajectory of production.

6. Commonalities and conclusions

In all three cases, there is more at work than conventional agronomic and economic explanations would imply. The importance of disease, the explanation of cocoa's decline promulgated by biological scientists, an administered world market, the explanation promulgated by economists, and recently the forest rent approach, combining agronomy and economics, are the usual references in attempts to explain the decline in cocoa production at various historical moments. And it does seem that disease in the fields, the vagaries of commodity markets, and falling returns to intensive cultivation offer some insight into the factors behind the declines we have explored in this paper. But we suggest these explanations are simply not enough, and a more sociological investigation of this same phenomenon provides access to some crucial insights.

The mixed insights the forest rent approach yields for our three cases demonstrate both the value and the limitations of conventional approaches. This approach derives its focus on migrating small holders from the time-limited economic advantage of growing cacao in newly cleared forest land. The Trinidad case is quite consistent with the forest rent argument: in the absence of motivated family farmers, growers faced real problems of labor recruitment and organization with the

forest ultimately losing its fertility. The Brazilian case, too, can be argued to mimic forest rent dynamics, but only to a point: the characteristic transience of Brazil's "boom and move on" natural resource exploiters resembles the cocoa small holder's continuous push into the forest as soil fertility declines and disease increases. Still, large estate owners dominated small holders, in large part through the manipulation of the legal system and through violence, not because of their greater efficiency. The Ghanaian case is also partly consistent with and partly contrary to the forest rent argument: the early 20th century cacao expansion faded as the forest rent declined, the same pattern predicted everywhere by this approach. With small holder-based production, though, motivation should not have been a problem in contrast to Trinidad and Brazil with their large estates. The failures of both the British shoe-string colonial administration and later the corrupt post-independence state, however, undercut the potential and the motivation of the small holders. Substantial improvements in quantity and quality of production in the most recent decade have followed redirected state policies and efforts. Declining forest rent, along with other conventional arguments, then, should be seen as only parts of an historically contingent story.

Our approach has been to combine attention to historical development, labor organization, and the reverberations of political regimes' actions and inaction against a backdrop of colonial expansion and decline. Stepping back from particular historical conjunctures in this way allows unexpected commonalities and continuities to emerge. First, we lay out general propositions about the state and labor organization that unify our explanations and relate these propositions to our three cases. Then, we point out more specific patterns across the cases.

The state has had an impact on cocoa production in each case. To contribute to economic development, the state must develop substantial capacity for rational action, but its actions must be informed by the interests of economic elites in production and accumulation, usually through social ties (Evans, 1995). The state, moreover, must maintain some autonomy from these elites in order to solve long-term problems that elites neglect or cause and to work out compromises among discordant elite factions (Wright, 1996). Failures on the part of the state in each of the three cases can be understood as a deviation from this prescription for state capacity with partial autonomy.

Growing and harvesting *cacao*, moreover, requires substantial labor. To be profitable, a labor-intensive enterprise must have sufficient workers who produce a surplus either because they are well motivated or successfully coerced. In various configurations, both the labor supply and its organization, either by control of coerced labor or by motivation of wage workers or

small holders, has also proven difficult in each of our cases. Successful coercion requires cutting off alternatives. Coerced workers may leave when possible, or they may resist, often in subtle ways that do not risk retribution but that nonetheless hurt production. A key form of subtle resistance is failure to exercise ingenuity, judgment, and initiative, which may be of special importance with a disease-prone and finicky crop like *cacao*. The advantage of motivated labor over forced labor lies in just these desirable work characteristics (Wallerstein, 1974; Williams, 1961), but nominally motivated labor may not display the expected behaviors when the wages or prices paid as incentives for motivated action are too low or when the workers have not had the chance to acquire the needed techniques and knowledge. *Cacao* production may involve enough uncertainty to call for significant skill, that is judgment coupled with knowledge and technique.

In simplest terms, Ghana's production has foundered on poor incentives for its small holders, Trinidad's and Brazil's on alternatives for laborers that limited the effectiveness of coercion over them. The state could have done much to solve these problems but did not, and in each case actually was part of the labor organization problem.

Labor supply, motivation, skill, and control were consistent problems across all three cases. In Trinidad, any labor was hard to come by. There were never enough indigenous people and African slaves to tend the crop and, even worse, forced labor of this type was always unlikely to use best practices. Indeed, lack of attention in the fields most likely promoted disease through poor pruning, weeding, and irrigation. In Brazil, labor resources historically migrated into new areas following a particular boom, depopulating the areas of the spent boom. Migration of this sort, and a generational weather-eye on the next prospective boom served to discourage long-term investment by growers in *cacao* production. Moreover, after World War II, the availability of cheap land drew labor away from viable *cacao* plantations, resulting in a general shortage of labor. On the larger, more productive fazendas, a severely exploited, rural proletariat labored under truly oppressive conditions that were hardly likely to produce the type of attention and care required for high yields. In Ghana, contradictory policies of first the British colonial regime and later the independent Ghanaian state served to suppress *cacao* production. The price paid to growers was so low as to discourage careful practices and further planting.

High quality *cacao* production, in particular, requires motivated and skilled labor and a long-term orientation from growers. The high quality strategy was fundamentally incompatible with the coerced labor systems in Trinidad and Brazil; the state, to put production on a successful high quality trajectory, would have had to

demonstrate very great autonomy from agricultural elites and equally great capacity for rational planning and action. In Trinidad, Spain's inefficiently administered policy of trade monopolization created a particularly uncertain climate for would-be *cacao* producers. This uncertainty provided a disincentive to growers who turned away from production of premium *cacao*, until at last this high quality product was no longer produced on the island at all. In Brazil, agricultural elites construed commodity extraction as a short-term opportunity, and the export-oriented state did not reorient them toward the longer-term outlook necessary for quality *cacao* production. In Ghana, the small holder labor system would have been compatible with the requirement for motivated labor in quality-oriented production; the state's subversion of incentives for the small holders was the fundamental problem. There, the state lacked autonomy from economic elites and, therefore, sacrificed the high quality path in order to assure its own survival. Trading company resistance to the payment of a premium for quality provided a further disincentive to the production of quality *cacao*.

Decline in production crosses over our three cases, of course, by design. Still, the natural conditions of soil and climate and the growing demand were so favorable in all three that we should not accept the decline as natural. As with the closely related quality issue, disease and low prices, worsened by overproduction and competition, contributed to the decline. Beyond these conventional explanations, however, the cases point to struggles over profits along the commodity chain as responsible for decline, as well. In Brazil, the struggle was largely at the point of production where large land owners intensified work to extract profit quickly before Brazil's advantage in the world market collapsed. How different would have been the commodity's future there if planters, perhaps pushed by the state, had made a long-term investment in high quality production. They and their workers might have shared the return. In Ghana, profit was shifted from small-scale growers to powerful trading companies and to the bloated state board. The incentive to produce was lost. Given small holder-based production, growth of production requires a state adequately autonomous as to nurture the small holders rather than suck them dry in support of elites on whom the state depends. In Trinidad, planters of high quality *cacao* were caught between production and marketing problems. They lacked the power of Brazil's plantation owners to exploit their labor. Ironically, it appears that agricultural wage workers in Brazil were more coerced than slaves in Trinidad. Moreover, in a manner related to the problems of Ghanaian small holders, Trinidad planters could not circumvent their dependence on Spanish shipping. In the end, their production and their profit collapsed.

Our examination of cocoa as a commodity system has yielded additional gains that may have remained obscure had we selected another unit of analysis. Adding to the insights of the forest rent approach and questioning its determinism, commodity system analysis has allowed us to combine analyses of historical development, labor organization, the reverberations of political policies, and world trade. An all-inclusive commodity system analysis would pull in still other actors and processes, but we have demonstrated the centrality of the labor process and the state to our cases of cocoa production decline. Indeed, the sweep of commodity system analysis is underlined by the close causal connections of these two seemingly distant system components. Commodity system analysis provides scope to take our investigation further: to “follow-the-bean” from field to consumption and to show how this particular commodity negotiates its way through the world system, while still paying attention to the kinds of issues, like the labor process and the organization of production, that have long exercised the minds of industrial, rural, and organizational sociologists.

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