

The Travels of a T-shirt in the Global Economy

An economist examines the markets, power, and politics of world trade

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Chapter 1

Reinsch Cotton Farm, Smyer, Texas

Unlike French wine or Florida oranges, Texas cotton doesn't brag about where it was born and raised. Desolate, hardscrabble, and alternately baked to death, shredded by windstorms, or pummeled by rocky hail, West Texas will never have much of a tourist trade. Flying into the cotton country near Lubbock on a clear fall day, I had a view of almost lunar nothingness: no hills, no trees. No grass, no cars. No people, no houses. The huge and flat emptiness is jarring and intimidating at first, since one can't help but feel small and exposed in this landscape. Though I have traveled to dozens of countries and to almost every continent, Lubbock, Texas, was one of the most foreign places I had ever been. There is a very good chance that my T-shirt - and yours - was born near Lubbock, the self-Proclaimed "cottonest city" in the world.

The people of this forbidding yet harshly beautiful place are well suited to the landscape. Indeed, they are the product of it. The land has humbled them with its unpredictable temperament and its sheer scale, yet made them proud of each small success in taming and coaxing from it the fluffy white gold of the cotton plant. According to local legend, when God created West Texas, He made a mistake and forgot to fashion hills, valleys, rivers, and trees. Looking at His desolate and barren mistake, He considered starting over, but then had another idea. "I know what I'll do," He said. "I'll just create some people who like it this way."

And so He did.

Nelson Reinsch, cotton farmer, stands tall and handsome at the age of 81. He laughs easily but speaks carefully. He calls his wife, Ruth, "Sugar" and every other woman "ma'am." Nelson is a gentleman in the older sense of the word, well mannered and considerate from the inside. In his 81 years, Nelson has missed four cotton harvests, all of them during his Navy service in World War II. Nelson and Ruth are happy enough (or perhaps just polite enough) to talk about the past if that is what their guests want to hear about. But they wallow not one bit in "the good old days," and their minds are opening rather than closing as they approach the ends of their lives. The world is still very interesting to Nelson and Ruth Reinsch.

Producing cotton is no longer the backbreaking physical process it once was, but every year Nelson and Ruth still battle both the whims of nature and the vagaries of markets. Each summer they take on the wind, sand, heat, and insects, and each fall, at harvest, they take on the world markets, in which they compete with cotton farmers from over 70 countries. The Reinsches' 1,000 acres can produce about 500,000 pounds of cotton lint if fully planted, enough for about 1.3 million T-shirts. That Nelson is ending his life in the same occupation in which he began tells us much about him. It also tells us much about the U.S. cotton industry.

History shows that almost all dominance in world markets is temporary and that even the most impressive stories of national industrial victories typically end with sobering postscripts of shifting comparative advantage. Within the baby boomers' lifetime, preeminence in consumer electronics has shifted from the United States to Japan to Hong Kong to Taiwan to China. Apparel production has moved from the American South to Southeast Asia to the Caribbean and

back to Asia. Advantages in steel have moved from the U.S. Rust Belt to Japan to South Korea. But for over 200 years, the United States has been the undisputed leader in the global cotton industry in almost any way that can be measured, and other countries, particularly poor ones, have little chance of catching up. The United States has historically occupied first place in cotton production (though recently second to China), cotton exports (though occasionally second to Uzbekistan), farm size, and yields per acre.'

On the surface, cotton is an unlikely candidate for economic success in the United States. Typically, American industries compete with those in "like" countries. American firms compete with Japanese automakers, German chemical companies, and Swiss pharmaceuticals. But for climatic reasons, few advanced industrial economies produce cotton. Instead, American cotton growers compete with producers in some of the world's poorest and least developed regions. If our labor costs - among the world's highest - have toppled or relocated industries as diverse as apparel, steel, and shipbuilding, how has U.S. cotton maintained its world dominance?

More broadly, how can an industry so basic and "downstream" as cotton production continue to thrive in an advanced, service-oriented economy? There would appear to be little sustainable advantage in an industry such as cotton. Models of business strategy would predict that dominance in such an industry can only be fleeting and stressful: The lack of product differentiation, the intense price competition, and the low barriers to entry make it scarcely worth the trouble. Business professor and strategist Michael Porter notes that

advantages [are] often exceedingly fleeting [in these industries]. . . . Those industries in which labor costs or natural resources are important to competitive advantage also often have. . . only low average returns on investment.

Since such industries are accessible to many nations . . . because of relatively low barriers to entry, they are prone to too many competitors. . . . Rapidly shifting factor advantage continually attracts new entrants who bid down profits and hold down wages. . . .

Developing nations are frequently trapped in such industries. . . . Nations in this situation will face a continual threat of losing competitive position. . . .'

While this description of life on the economic precipice rings true for poor cotton farmers in South Asia and Africa, it does not describe the cotton industry around Lubbock. Year in and year out, American cotton farmers as a group, are on top. What explains American cotton's success as an **export** commodity in a country that has experienced a merchandise trade **deficit** in each year since 1975? And what explains U.S. cotton producers' ability to export such a basic commodity to much poorer countries? Why here? Why was my Chinese T-shirt born in Texas?

Oxfam, the British charity, believes it has the answer. According to *Cultivating Poverty*, a scathing report released in 2002, the comparative advantage enjoyed by U.S. cotton farmers lies in their skill at collecting government subsidies. In the fall of 2003, bolstered by Oxfam's research and resources, the poorest countries in the world cried foul against the richest at the opening of the World Trade Organization (WTO) trade talks in Cancun, Mexico. Tiny, desperately poor countries such as Benin and Burkina Faso stood firm and stared down U.S. negotiators: They charged that U.S. cotton subsidies were blocking their route out of poverty, and that it was impossible to compete with Uncle Sam's largesse to U.S. cotton farmers. In a

sound bite that carried considerable punch, the poor countries pointed out that U.S. cotton subsidies exceeded the entire GDP of a number of poor cotton-producing countries in Africa. If the United States was going to champion the case for free trade, Americans needed to walk the walk as well as talk the talk. The stare-down continued for several tortured days until the talks collapsed and both rich and poor gave up and went home. The point, however, had been made, and several months later, the WTO ruled that U.S. cotton subsidies violated global trade rules and unfairly tilted the playing field toward American producers. In the summer of 2004, with the huge subsidies in the public spotlight, U.S. trade negotiators agreed not only to put cotton subsidies on the table, but to tackle the cotton issue "ambitiously, expeditiously and specifically" during the Doha Round of trade negotiations.

There is no doubt that the subsidies are big, and little doubt that they are unfair to poor countries. But anyone who believes that America's competitive power in the global cotton industry reduces to government subsidies should spend some time near Lubbock, Texas. While the subsidies are, of course, a boon to U.S. producers, the success of cotton growers such as Nelson Reinsch is a much more complex phenomenon.

First, the dominance of the U.S. industry predates by well over a century the implementation of national farm subsidies. As Chapter 2 describes, the U.S. cotton industry passed its competitors over 200 years ago. Therefore, while subsidies may account for some cost advantages today, they cannot be the longer-run explanation for the industry's dominance.

Second, the subsidy explanation for America's dominance gives short shrift to the astounding entrepreneurial creativity of the American growers. In many ways, the American cotton farmers are MBA case studies in adaptability and entrepreneurship. American cotton growers have adapted their production methods, their marketing, their technology, and their organizational forms to respond to shifts in supply and demand in the global marketplace. The shifts in demand and supply that reveal cotton's story as a business were sometimes gentle and predictable trends of ascendancy and decline, and the farmers could see what was ahead, but times also came when changes were sudden and cataclysmic, reshaping the world in front of them. In each case, the cotton farmers responded with a creative maneuver - a new idea, a new technology, a new policy. Whether it occurs by design or necessity, the open-mindedness and forward orientation that struck me within minutes of meeting Nelson and Ruth Reinsch is a regional trait as well as a comparative advantage, because farmers in poor countries who are tradition bound - for whatever reason - rather than innovation bound, lose. The American growers' remarkable adaptability and entrepreneurial resourcefulness have their roots in character but also in the institutions and governance mechanisms taken for granted in the United States, which are lacking in many poor countries. In the United States, the farms work, the market works, the government works, the science works, and the universities work; and all of these elements work together in a type of virtuous circle that is decades away for the poorest countries in the world. In much of West Africa, with or without U.S. cotton subsidies, these institutional foundations for global competitiveness are weak. In addition, the institutions that are in place in many poor countries serve to funnel resources and power away from farmers rather than toward them.

While subsidies alone cannot explain U.S. dominance in this industry, the subsidies are but one example of a much broader phenomenon that has contributed to the U.S. farmers' seemingly immutable spot at the top. For 200 years, U.S. farmers have had in place an evolving set of public policies that allow them to mitigate the important competitive risks inherent in the business of growing and selling cotton. They have figured out how to compete in markets but also - and at least as important how to avoid competing when the risks are too high. Put another way, U.S. cotton growers have since the beginning been embedded in a set of institutions that insulate them from the full strength of a variety of market forces.

When we consider the risks that a cotton boll faces on its way to becoming a T-shirt, it is a wonder we have clothes at all. The cotton can't be too hot, and it can't be too cold; it is susceptible to both too much water and too little; and it is too delicate to survive hail or even heavy wind and rain. Cotton plants are easily overtaken by weeds, there are dozens of varieties of pests that can take out a cotton crop and crop prices are highly volatile. There is labor market risk as well, as workers must be available at a reasonable price when the cotton is ready to be picked. Every cotton farmer in the world faces these risks. And of course there are the normal business risks associated with falling prices and rising costs, foreign competition, and access to financing. As explained in Chapters 2 and 3, however, American cotton's story, and its success, have been about excellence in avoiding - or at least cushioning the impact of - these risks.

Today's proponents of markets and globalization can find much to like in the story of American cotton's victory, but the backlash can find support as well. For every noble victory in this industry, and for every case in which the Americans were smarter, faster, and better than the competition, there is a shameful victory as well. The most shameful of all was the cotton slave plantation, where the U.S. cotton industry was born, and where the Americans first trounced their foreign competition. Less shameful but still embarrassing are today's high subsidies. But to understand American cotton's long-run dominance, we should begin by agreeing to neither demonize nor romanticize American cotton farmers. During the 200 years in which the United States has dominated this industry, sometimes it was possible to win on the high road and sometimes it wasn't. My T-shirt's parentage in the fields of the American South has many things to be proud of, but some things to hide.

Chapter 2

WINNING BY DUCKING THE LABOR MARKETS

Demand Pull: The Humble Class's Taste for "Gaiety of Dress"

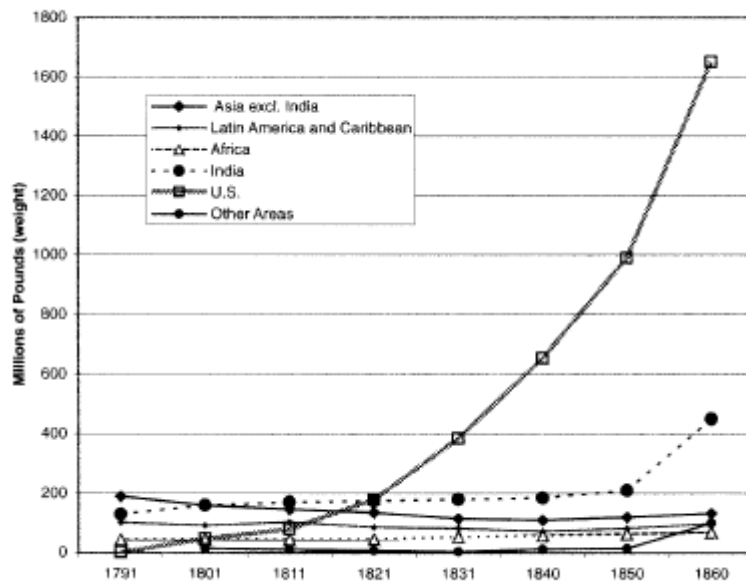
The world's first factories were cotton textile factories, and it was entrepreneurial developments in production of cotton cloth and yarns that launched the Industrial Revolution in eighteenth-century Britain. A rapidfire series of technical improvements in both the spinning and weaving of yarns made large-scale production possible and opened the way for the manufacture of textiles to move from the home and workshop into the factory. The exploding productivity of the English cotton industry dramatically lowered prices, so that for the first time, the poor could dress

attractively. A consumer class was born. Edward Baines, a nineteenth century historian, described the consumer pull of cheap cotton clothing:

It is impossible to estimate the advantage to the bulk of the people, from the wonderful cheapness of cotton goods . . . the humble classes now have the means of as great neatness, and even gaiety of dress, as the middle and upper classes of the last age. A country-wake in the nineteenth century may display as much finery as a drawing room of the eighteenth.'

As technological innovation increased productivity, productivity, in turn lowered prices. The lower prices spurred demand for textiles, which then left England starving for raw cotton. Once the British masses had a taste of “gaiety of dress,” there was no turning back. The cheap cotton clothing available to the masses was the historical equivalent of today’s \$5.99 cotton T-shirt. Then, as now, consumer demand was behind the push and pull of world trade flows.

Of course, British demand for cotton does not fully explain American success in meeting that demand. Indeed, at the take-off of the Industrial Revolution, the United States did not seem like a promising source of cotton at all. As figure 2.1 shows, in 1791, the U.S. share of world cotton production was almost too small to be counted. The American South produced barely 2 million pounds of cotton in 1791, a miniscule amount compared to the output of producers elsewhere. It is doubtful that producers in Asia (primarily India), with production of nearly 400 million pounds, perceived much of a competitive threat from the American South.



Source: Bruchey, p. 7.

The boom in American cotton production that happened next was astounding. In 10 years U.S. production increased 25 times. And by the outbreak of the Civil War, the South was producing more than a billion pounds per year approximately two-thirds of the total world production. Cotton production was overwhelmingly export oriented. From 1815 to 1860, cotton constituted approximately half of the value of *all* U.S. exports, and more than 70 percent of all cotton

produced was exported, primarily to England. In a relatively short period of time, American cotton farmers had trounced their foreign competition.

The victory did not come cheaply. First, the single-minded concentration of capital, labor, and entrepreneurial energies into cotton production, left the American South far behind the North in broader industrial development, a gap that has narrowed decisively only in the past 25 years. Second, early American cotton production took mostly, though not entirely, on slave plantations, and there is little doubt this system of human captivity contributed significantly to the “productivity” of the American cotton grower. And while plantation slavery was undoubtedly the most horrible of the many labor systems in American economic history, as we will see, slavery is not the only instance in which a horrific – or at least objectionable – labor system played a role in the production and trade of cotton clothing such as T-shirts. On this issue, today’s trade skeptics have a point.

Slavery was the first significant American “public policy” that served to protect cotton growers from the perils of operating in a competitive labor market. For a number of reasons, relying on a competitive labor market – rather than on captive slaves – was a risk that growers were loath to assume, and it was also a risk that would have likely precluded the explosive growth in American cotton production.

Growing cotton in the slave South was mind-numbing, backbreaking physical labor. Beginning in mid-spring, the ground would be prepared for planting with hoes, and later, mule-drawn plows. Following planting, the battle of the weeds began. The tender cotton plant was not able to hold its own against rapacious weeds, and so required the constant help of workers who guarded the young plants against their encroachment. Indeed, numerous journals and diaries reveal that keeping cotton “out of the grass” was perhaps the planters’ biggest worry and the most physically demanding work. Weeding and thinning continued, although at a slower pace, almost until the four-month harvest season began in late summer. On a large plantation, one worker could prepare, plant, weed, and harvest about 18 acres of cotton.

Critically, the timing and intensity of each of these tasks was dictated by the weather, so the growers were unable to predict their labor requirements beyond the weather forecast. During a very rainy spring, each field had to be weeded up to six times, which doubled the typical labor requirement during that season. The harvesting of cotton was perhaps the most unpredictable task. (Even today, Nelson and Ruth Reinsch cannot plan for Thanksgiving travel.) Cotton cannot be picked either in the rain or while still wet, and it typically takes 3 to 4 days to dry. A few days of rain, then, might leave pickers idle for a week. But once the cotton was open and dry, it needed to be picked as soon as possible, so that the tender fluffs did not blow away or fall to the ground. Cotton that had been rained on became spotted and weaker, so often planters tried to hurriedly get the cotton picked as rain clouds approached.

These exacting and unpredictable labor requirements were impossible to meet while relying on the market. As Gavin Wright has argued, farm labor markets in the American South barely

functioned, if in fact they existed at all." Farms were geographically dispersed, which made communication and transportation difficult. The very low population density, combined with uneven labor requirements throughout the year, as well as poor information flows, meant that a farmer who relied on the "market" to meet his labor needs might not be able to harvest his crop at any price.

The problem of farm labor, then, was not limited to a shortage of workers or high wages. Rather, the problem was the absence of a well-functioning market where farm workers and growers could transact with any degree of effectiveness. Relying on the market to supply the right number of workers at the right time was a business gamble that cotton farmers preferred to avoid.

Even with a functioning labor market, however, it is doubtful that workers would have been attracted to opportunities as wage hands in cotton production. As a very early student of the cotton economy noted, "the difficulty or impossibility of inducing the whites to become wage earners while they were in contact with cheap land is undoubtedly the chief reason why the cotton industry in the country was developed by slave instead of by free labor." Of course, the same could be said of blacks. In the absence of slavery, blacks as well as whites would prefer a farm of their own to work as wage hands. And, in the early years of the American South, land was available to all comers.

In summary, free labor - black or white - was unlikely to be attracted to wage work on Southern cotton farms, because of both the poor functioning of labor markets and the superior alternative available to these workers - the family farm. Slavery, then, allowed cotton farmers both a way to avoid the risks associated with transacting in the labor market and a way around the family labor constraint. Slavery also enabled the growers to cultivate greater acreage. The greater acreage, in turn, allowed cotton production to increase. The average farm size in the cotton South was nearly twice that of the free states of the North, and there was a strong positive relationship between farm size and relative cotton production, at least for farms below 600 acres. Put simply, large farms were slave plantations, not family farms, and it was the slave plantations that produced most of the world's cotton by 1860.

Keep the Fiddler Well-Supplied with Catgut

Slave ownership alone did not guarantee successful large-scale cotton production. Effective systems of control, monitoring, and incentives were also required. These systems accounted for both the economic success of the slave plantation for the planters, and for the inhumanity of slavery. The profitability of the plantation depended not on slave ownership per se, but on the planter's ability to induce his slaves to perform repetitive and exhaustive physical labor at unpredictable times. Large volumes of cotton production required that the planter devise a "factory" system wherein a large number of workers performed repetitive tasks, and the factory "shift" could be activated at the whim of the weather. The planters were able to induce this repetitive labor on demand with a complex blend of positive incentives (e.g., prizes), negative incentives (e.g., whipping), and paternalism.' A common theme in slaveholder journals is that the planters had a moral duty to protect those "in dependent status," and that slaves who were well-

cared-for and happy would be more productive. A large plantation owner in Georgia offered his own practices as exemplary:

My first care has been to select a proper place for my "Quarter" well protected by the shade . . . and to erect comfortable houses for my negroes. . . . A large house is provided as a nursery for the children where all are taken at daylight, and placed under the care of a careful and experienced woman, whose sole occupation IS to . . . see that they are properly fed and attended to. . . . I have a large and comfortable hospital provided for my negroes when they are sick . . . [and] I must not omit to mention that I have a good fiddler, and keep him well-supplied with catgut, and I make it his duty to play for the negroes every Saturday night until twelve o'clock ."

Lest we be tempted to sign up, the writer later notes that his solicitous human resource policies reduced, but did not eliminate, the need for whipping. Whatever its motivation, paternalism clearly strengthened the control of the planter over his slaves and served as a governance mechanism. And when combined with constant monitoring, and the positive and negative incentives that ruled the workday, the planter's domination was complete.

To summarize, slavery was the first in a set of evolving public policies that served to insulate farmers from the perils of the market. American success in producing large volumes of cotton for world markets required a reliable supply of farm labor, but this labor was likely both unwilling and unavailable through a market mechanism in the pre-Civil War South. But slave ownership alone did not assure productivity. To induce slaves to perform the repetitive and exhausting tasks associated with cotton production, planters used a complex blend of governance mechanisms, including positive and negative incentives, paternalism, and monitoring. Many elements of the command and control factory system, of course, survive today in many industries. And complicated linds of incentive and monitoring mechanisms survive as well.

The lessons of the early American cotton industry are relevant for modern debates. America's early dominance of the cotton industry illustrates that commercial success can be achieved through moral failure, an observation especially relevant for T-shirts, which critics allege are produced under sweatshop conditions not far removed from slavery. But the early story of American cotton also reveals a critical lesson for the marketphobic: It was not the perils of the labor market but the suppression of the market that doomed the lives of the slaves. More generally, the tactic of suppressing and avoiding markets rather than competing in them continues today to be a viable business strategy, particularly in agriculture but ' also in other industries This ability to suppress and avoid competition, as we will see, is often the result of a power imbalance between rich and poor, an imbalance that persists in world cotton agriculture today.

With the labor problem "solved" by slavery, unlimited land to the West, and unlimited demand from the East, the pieces were still not quite in place for American cotton's victory. In their westward expansion, cotton growers encountered perhaps the greatest production bottleneck in American economic history. Once they had pushed farther than 30 miles from the Atlantic coast,

the cotton growers found that the lustrous and strong Sea Island cotton demanded by British mills would not bloom. Only Upland cotton, with a shorter fiber and stickier seed, would grow further west. However, while Sea Island cotton could be separated from the seeds with a simple roller gin modeled on an ancient device from India (the *Churkka* gin), this device was unable to separate the sticky seeds in Upland cotton from the lint.

The severity of this supply bottleneck is difficult to overestimate. A young and healthy slave could pick up to 300 pounds of cotton each day. Even children could typically pick 100 pounds per day. With the seeds, however, the cotton had no market. Since the roller gins would not remove the seed from Upland cotton, slaves were required to pick the seeds out by hand. So sticky and stubborn were the seeds, however, that a slave could clean no more than **1** pound per day. England's mills would die of cotton starvation at this pace.

So if it hadn't been Eli Whitney, it likely would have been someone else, and soon. In the fall of 1792, the necessary ingredients for entrepreneurial success converged: a production bottleneck, an idea, a source of capital, and a way to make a profit. For developing countries today, the important part of the story is not Eli - poor countries have plenty of smart and inventive people - it is the convergence of all the ingredients necessary for forward leaps.

Eli Meets a Venture Capitalist

From his childhood in Massachusetts until his graduation from Yale, Eli Whitney was known to friends and family as a talented and inventive tinkerer. Following his graduation he traveled South to assume a position as a private tutor. What happened next is perhaps best related by Whitney himself, in a letter to his father dated September 11, 1793. Whitney's letter conveys his technical brilliance and entrepreneurial energy, but more touchingly, also the guilt and excitement of a young man who in pursuing his entrepreneurial dream has somewhat neglected his familial duties. He starts by admitting he should have written sooner to let his parents know what he was up to:

Dear Parent:

I received your letter of the 16th of August with peculiar satisfaction and delight. It gave me no small pleasure to hear of your health and was very happy to be informed that your health and that of the family has been so good since I saw you. . . . I expected to have been able to come [home to] Westboro' sooner than 1 year will be in my power. I presume, sir, you are desirous to hear how I have spent my time since I have left College. This, I conceive you have a right to know and that it is my duty to inform you and should have done it before this time. . . .

On the way to Savannah, Whitney had met the widow and family of Major General Greene of Revolutionary War fame. Mrs. Greene took a liking to the polite young man and invited him to spend a few days on the family's plantation before continuing his journey. When a group of Revolutionary War officers who had served under General Greene came to the plantation to pay their respects to his widow, the conversation soon turned to the pressing need for a mechanism to separate Upland cotton from its seeds so as to meet the British demand. The seeds, the planters

were sure, were the only obstacle to their fortunes. "Gentlemen," Mrs. Greene remarked, "apply to my young friend, Mr. Whitney, - he can make anything."

Whitney quickly protested that he had never seen either cotton or cottonseed. Yet he was immediately intrigued, as is evident from the next paragraph of his letter:

I went from N. York with the family of the late Major General Greene to Georgia. I went immediately with the family to their plantation . . . with an expectation of spending four or five days... During this time I heard much said of the difficulty of ginning Cotton, that is, separating it from its seeds. There were a number of very respectable gentlemen at Mrs. Greene's who all agreed that if a machine could be invented which would clean the cotton with all expedition, it would be a great thing for both the Country and the inventor.

Critically, there was a venture capitalist at the Greene plantation, as Whitney explains later in his letter:

I involuntarily happened to be thinking on the subject and struck out a plan of a machine in my mind, which I communicated to Miller (who . . . resides in the family, a man of respectability and property). He was pleased with the Plan and said that if I would pursue it and try an experiment to see if it would answer, he would be at the whole expense, I should lose nothing but my time, and if I succeeded we would share the profits. . . .

The machine worked, of course. Whitney's simple and elegant model was quickly duplicated throughout the South. The good news was that in the next eight years, cotton production rose 25-fold, and by 1820, more than 90-fold. The bad news was that more than any other single factor, Eli Whitney's cotton gin solidified the slave plantation in the cotton South. For the growers, it was good while it lasted. For the men and women who had been bought and sold and bred and whipped and captured and fiddled to, it was good when it ended.

Where Was the Competition?

Where, we have to ask, was the competition? What of India and China, especially? Why were these countries, world leaders in cotton production in the late 1700s, left in the dust by the Americans?

At the beginning, as Figure 2.1 shows, other countries continued to produce cotton in relatively stable quantities while American production soared. It was not a matter, then, of American producers squashing the competition with low-cost and efficient production. Instead, for the older cotton producers, it was business as usual. But business as usual was not good enough.

British demand for cotton had exploded with the new textile machinery and the burgeoning consumer class. It was not a matter of steady growth in demand, not a curve that the old cotton producers could ride profitably on into retirement. The British Industrial Revolution was a lightening bolt in cotton's story, like the cotton gin or the boll weevil or emancipation, which

changed everything ahead. By 1860, Britain was consuming over a billion pounds of cotton per year, which was considerably more than the entire production of the world, excluding the United States."

An explosion in demand required an explosion in supply. The question, then, becomes why the supply exploded in the United States rather than in the countries that had been the world's major producers since the beginning of the cotton trade. The question of American success becomes more intriguing when we note the remarkable lengths to which the British went - quite unsuccessfully - to reduce their risky dependence on American cotton.

Put simply, modern markets did not yet work in India or China, in cotton or in anything else. As economic historian David Landes advises, a useful way to understand why something in economic history did or did not happen at a certain place and time is to ask, who would have benefited?" If cotton growers in India or China could have benefited by increasing their productivity, improving quality, and selling cotton to British mills, they would have done so it appears, though, that they would not have benefited; the risks were too great, the rewards likely minimal. Capitalism of the type that rewards an idea, an improvement, an initiative, had not yet taken hold in Asia. The foundations were lacking.

First, there were no property rights, or as Francois Bernier, a Frenchman who lived in India during the seventeenth century, wrote, *no mien et tien* (no mine and yours)." There were no incentives to improve age-old methods, to learn, to grow more, to do better. The agricultural workers were at the mercy of rulers who were often absent, and who changed and moved frequently. And even if wealth had been created, Bernier wrote, it had to be hidden lest it be extorted or seized.

In China, too, cotton growers would not have benefited. Under the tyranny of the emperor, there was little reason to take a business risk in the modern sense of the term. As a Christian missionary remarked in the late 1700s, "Any man of genius is paralyzed immediately by the thought that his efforts will win him punishment rather than rewards." Landes notes, too directly for most tastes, China's "cultural triumphalism and petty downward tyranny made [the country] a reluctant improver and a bad learner." Culturally, the Qing dynasty, which ruled China from the 1600s until the early 1900s, displayed an aversion to all things Western, and to change in general. A Jesuit passing through commented that the Chinese were "more fond of the most defective piece of antiquity than of the most perfect of the modern. . . ." In other words, all of the *Elis* in China had no reason to try.

On the surface, of course, the American cotton victory over India and China appeared to be due to slavery. An 1853 observer confidently noted that American cotton growers' "superiority" was due to the "cheap, and reliable labor they derive from that patriarchal system of domestic servitude." While certainly it was slavery that allowed the cotton factories on the plantations to produce such enormous volumes of cotton, India and China, too, had millions of people who were made to work for nothing by tyrannical rulers, millions of people who could not say no. Why these people were never organized to produce large volumes of cotton for export is another matter entirely.

Thus, while slavery allowed farmers to evade the risks of the labor market, it does not explain why other countries failed to seize the opportunities presented by the Industrial Revolution. The institutions necessary to support factory-style cotton production - property rights, incentive structures, what is today called "governance" - also had an important role to play. Governance still has an important role to play, which will remain the challenge for many poor cotton-producing countries. As we will see, all of the Eli Whitneys in Mali, Burkina Faso, and Benin still have little reason to try.

All God's Dangers Ain't a White Man

Shortly before the beginning of the Civil War, James Henry Hammond of South Carolina - senator, former governor, plantation owner, cotton farmer - stood to address the U.S. Senate. In one of the most famous pieces of Southern political oratory of the era, Hammond thundered on about the destruction of the world that would surely accompany the demise of the cotton slave plantation. It was not just the Southern gentleman's way of life that Hammond sought to preserve, it was civilization itself:

Would any sane nation make war on cotton? Without firing a gun, without drawing a sword, should they make war on us, we could bring the world to our feet. . . . What would happen if no cotton was furnished for three years? . . . this is certain: England would topple headlong and carry the whole civilized world with her, save the South.

This dire prediction about the demise of civilization rested on the importance of cotton to the industrial centers of the Northern states and Europe. The giant textile mills that lined the rivers of the new industrial centers depended upon the South to supply cotton. This bit of fluff, the boll as big as a fist yet lighter than a breath, reigned supremely, if not benevolently, over the world's new economic order. Southern cotton had a God-given monopoly. Because it could not be grown either in the Northern states or in England, Hammond reasoned, the industrial world would bow to cotton, and the South had nothing to fear:

No, you dare not make war on cotton. No power on earth dares make war on cotton. Cotton is king."

It is clear from his words that Hammond did not believe that the cotton kingdom could thrive under the rules of the North. To destroy the slave plantation' was to destroy the cotton economy, or so he thought.

But while the Civil War eliminated slavery, the cotton economy of the South survived because public policy evolved to continue to protect the growers from the perils of the labor markets. Labor requirements in cotton production remained highly seasonal, and the challenge was still to have sufficient labor available at critical but unpredictable times in the cotton cycle. However, transacting in a labor market was fraught with risk as the market still offered no guarantees about either the price or availability of labor at these critical times. Without the tight control of slavery,

landowners needed an alternative system to bind labor to their land upon demand. The labor system that emerged - tenant farming, or "sharecropping" – fit the bill.

In exchange for their labor, the landowner provided the sharecropper with housing and food (known as the "furnish") as well as the right to hunt and to fish. By providing housing and food, rather than cash, the landowner bound the worker to the property and assured himself of labor at critical times. The worker was contractually bound as well, since he was indebted to the landlord through the harvesting of: the crop.

A wide variety of public policies were instituted to bind the sharecroppers to the land and insulate the cotton growers from the risks of transacting in the labor market. Gradually, the legal definition of "sharecropper" shifted in favor of the landowners, especially through the passage of crop lien laws. These laws changed the status of the sharecropper in the courts to a laborer who was paid wages in crops rather than a tenant with ownership of a share of the crop. The difference was critical. As a laborer, the sharecropper could not offer his crop for lien because it technically belonged to the landowner. The crop lien laws, then, shut the sharecropper out of the capital markets while widening access to capital for the landowners. Other laws, such as vagrancy laws and "alienation of labor" laws (which protected the landowner from having his labor hired away) also served to bind the sharecropper to the land. At the same time, planters opposed public schooling for blacks and poor whites, so illiteracy and lack of education kept the balance of power in the sharecropping arrangement heavily in favor of the planter, and limited the alternatives of the workers.

Moreover, the contractual arrangement between sharecropper and landowner left the sharecropper little hope of climbing out of subsistence. The sharecropper's dream - to own land - was thwarted by a cycle of perpetual debt whereby the sharecropper's share of each harvest was barely enough to settle the year's debts, and by exclusion from external capital markets. A remark reportedly made by Louis XIV of France is apt: "Credit supports agriculture as a cord supports the hanged."

Ned Cobb, an Alabama cotton farmer, recalled the standstill that trapped him as a sharecropper. While he made six bales of cotton in 1908, a respectable crop:

It took all them six bales to pay Mr. Curtis. In the place of prosperin', I was on a standstill. . . . I had not a dollar left out of the cotton. . . . Mr. Curtis had Mr. Buck Thompson furnish me groceries . . . kept a book on me. . . . [Mr. Curtis] paid Mr. Thompson and I paid him – the deal worked that way - out of my crop. So he made somethin off my grocery bill besides gettin half my crop when the time came.

Cobb's biography repeats this theme year after year. Some years, there was a little cotton left after paying the landlord; in other years, there was not enough to settle the debts and Cobb had to start the next year in the hole. Thanks to creative accounting, it was typical to come out even. In Macon County, Alabama, researchers uncovered a remarkable coincidence: 62 percent of black sharecroppers had come out even for the year in 1932.

Ironically, the success that the planters had in devising public policies to keep the workforce docile and uneducated soon began to backfire. When the boll weevil began to ravage the Southern cotton crop in the early 1900s, government extension programs were mobilized to spread advice to farmers on how to combat the weevil and save their crops. The news and advice reached the large farms and the educated farmers, but often passed by the poor and illiterate sharecroppers, black and white, who had to fend for themselves. In 1921, approximately 30 percent of the cotton crop - predominantly that produced by small sharecroppers was lost to the weevil.²⁶ Many were pushed off the land. Ned Cobb remembered the time well:

That was boll weevil time. . . . these white folks told the colored people if you don't pick them cotton squares off the ground and destroy them boll weevils we'll quit furnishin' you. Told em that - puttin the blame on the colored man for the boll weevil. Couldn't nobody pay his debts when the weevil et up his crop."

"Yes," he added later, in reference to the weevil, "all God's dangers ain't a white man."

For Deep South sharecroppers, not much changed from the end of the Civil War until the late 1920s: a few acres of tired soil, a few mules, a few bales at the end of the year, and a perpetual crushing debt.

But while this rhythm played on in the Deep South, a new type of cotton factory was rising in the West. By the early 1900s, Texas would be the country's largest cotton producer. By the 1920s, Texas would be selling cotton to China.

Cotton Factories Arrive in Texas

Texas and Oklahoma were the new cotton frontier, wide-open, blue-sky places with no crumbling plantation houses, no old ways of doing things, and plenty of room to build cotton factories. Between 1900 and 1920, the area around Corpus Christi was divided up into huge landholdings on a scale never seen before, and rarely since, for the purpose of growing cotton. Henrietta King of Corpus Christi owned 1.4 million acres, Charles Taft owned over 150,000 acres, and C.W. Post - the man behind the cereal - owned 200,000 acres.

The requirements for successful large-scale cotton farming had changed little from the pre-Civil War South. The landowners still required large numbers of workers to be available on demand to plant, weed, and harvest the crop at the whim of the weather. Relying on a labor market in the modern sense of the term was still fraught with risk and expense. How would the planter be assured that the market would provide for labor requirements when the weeds bloomed or the cotton opened? And what if the market wage went up or help was hired away by competitors?

Creative solutions abounded." Planters imported monkeys from Brazil and tried to teach them to pick cotton, but the animals in the end were uncooperative. And geese, it turned out, will weed a cotton field when fenced in, and the farmers discovered that only two geese could weed an acre of cotton. They also discovered, however, that geese could not be trained not to trample cotton

plants, and that insecticide is also geosicide. For a time, farmers also used flamethrowers to weed cotton fields, but taking fire down the rows of their livelihood proved too difficult for most. In the end, neither monkeys nor geese nor fire could accomplish the tasks as well as a captive labor force.

This time, to tie the labor to the land and to avoid the market, the cotton growers borrowed an idea from the North: the company town.

The Taft cotton ranch, near Corpus Christi, occupied 39 percent of the land of San Patricio County." The ranch was organized as a corporation their work - were hierarchically managed for the purpose of cotton production. The ranch had company housing, schools, and churches segregated along ethnic lines for whites, Mexicans, and blacks. Like the "furnish" provided to old South sharecroppers, workers were paid partly in scrip, which could be redeemed only at company stores. Finally, like the plantation owner who kept his "fiddler well-supplied with catgut," the Taft Ranch provided holidays, music, and festivities as well, again designed for the three different ethnic groups. This entire system, of course, served to ensure that workers were around when the cotton needed to be planted, weeded, and harvested. The new cotton factories not so much influenced public policy, they were public policy over vast stretches of Texas.

These large and tightly controlled production systems were hailed as models of the farms of the future, models of productivity, efficiency, and profitability. Once again, successful large-scale cotton production depended on a factory system in which large numbers of workers were available on demand to complete the repetitive chores associated with weeding, planting, and picking. Once again, success depended upon avoiding - not competing in - the labor market. Of course, observers of the day also acknowledged that the economic success of these large Texas cotton "factories" also meant the demise of the smaller family cotton farms. It was sad but inevitable, the way of the future.

Well, maybe.

Perhaps someone forgot to tell Nelson and Ruth Reinsch.