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Parallel Paths to Enforcement: Private Compliance, Public Regulation, and Labor Standards in the Brazilian Sugar Sector*

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Abstract
In recent years, global corporations and national governments have been enacting a growing number of codes of conduct and public regulations to combat dangerous and degrading work conditions in global supply chains. At the receiving end of this activity, local producers must contend with multiple regulatory regimes, but it is unclear how these regimes interact and what results, if any, they produce. This article examines this dynamic in the sugar sector in Brazil. It finds that although private and public agents rarely communicate, let alone coordinate with one another, they nevertheless reinforce each other's actions. Public regulators use their legal powers to outlaw extreme forms of outsourcing. Private auditors use the trust they command as company insiders to instigate a process of workplace transformation that facilitates compliance. Together, their parallel actions block the low road and guide targeted firms to a higher road in which improved labor standards are not only possible but even desirable.

Keywords
labor standards, private auditors, labor inspectors, global supply chains, Brazil

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Introduction

In recent years, global corporations and their lead suppliers have enacted a growing number of codes of conduct and have been promoting ever more rigorous monitoring (auditing) regimes aimed at redressing labor abuses in their supply chains. At the same time, governments in developing countries have sought to increase compliance with their own labor laws and regulations by strengthening the capacities of their labor inspectorates. On the receiving end of this activity, local producers must contend with multiple regulations and verification regimes, but it is not clear how these systems interact and what results, if any, they produce. Recent research has suggested that neither state regulation nor private voluntary regulation function effectively in isolation, and thus a combination of private and public interventions is necessary to promote labor standards in globally dispersed supply chains.[1] Yet simply stressing the importance of (potentially) complementary interventions and public-private partnerships fails to account for how these alternative forms of regulation actually interact on the ground. As Tim Bartley and David Trubek and Louise Trubek have argued, under certain conditions, these alternative approaches to regulation can either complement one another, or contradict, and thus undermine the effectiveness of each other, resulting in significantly different results for workers and their communities.[2]

Through a case study of The Coca-Cola Company's (TCCC) sugar supply chain in Brazil, this article examines how private and public enforcement authorities pursue independent but parallel tracks that when combined can lead to improved labor standards. Historically, the global sugarcane industry has been associated with egregious violations of labor standards. Abuses used to be so extreme that they triggered popular revolts and slave uprisings.[3] Since then, slavery has been abolished but labor standards in the sugarcane industry remain gruesome in most countries that cultivate this crop. In Costa Rica, sugarcane workers live in overcrowded dorms, are paid below legally mandated minimum wages, cannot form or join unions, do not receive social security benefits, and face excessively long workdays with almost no breaks.[4] In Nicaragua, sugarcane workers are not represented by a union and even though most workers toil from eight to twelve hours a day, they still make less than the mandatory minimum wage.[5] In El Salvador, up to a third of sugarcane workers are children under the age of 18, even when national labor laws prohibit minors from performing activities that are harmful to their health.[6] In its 2012 report, the international division of the U.S. Department of Labor detected child labor in sugarcane production in fourteen countries: Belize, Bolivia, Burma, Colombia, El Salvador, Dominican Republic, Guatemala, Kenya, Mexico, Panama, Paraguay, Philippines, Thailand, and Uganda.[7] It also detected forced labor in five sugar-producing countries, including Brazil and Pakistan.[8] In India, half a million migrant sugarcane workers live in "large refugee camp-like colonies" adjacent to sugar mills where they lack access to running water, electricity, medical attention, and welfare entitlements.[9] In the Philippines, at least four leaders of the National Federation of Sugar Workers have been killed in recent years.[10] Even in the United States, seasonal migrant workers who harvested sugarcane have alleged that employers engage in massive wage cheating.[11] As stated by Alec Wilkinson, "the most perilous work in America is the harvest by hand of sugar cane in south Florida."[12]

Brazil is the most important producer of sugarcane, sugar, and ethanol in the world. In 2011, Brazilian sugarcane farms and mills harvested and processed as much sugarcane as the remaining top-ten producing countries combined.[13] At present, this Brazilian industry is composed of 413 mills and 80,000 farms that employ 1.3 million workers and generate US$20 billion in annual revenues. Of all the sugar traded internationally, 46 percent comes from Brazil and this industry responds for 2.35 percent of Brazil's GDP.[14]

On the demand side, The Coca-Cola Company and its affiliated bottlers are among the largest purchasers of sugar in the world. In 2011, TCCC bottlers purchased approximately 8 percent of all the sugar produced for industrial use in the world.[15] In Brazil alone, TCCC bottlers have purchased between 690,000 to 745,000 tons of sugar per year from more than thirty different mills, which represent approximately 7 percent of the sugar sold in the country.[16] TCCC's sugar supply chain is characterized by blurred boundaries of ownership and accountability and fissured employment practices.[17] TCCC sells its secret syrup to bottlers throughout the world. In some cases TCCC owns the bottlers; in other cases these bottlers are themselves large multinational companies (e.g., FEMSA, SA Miller), and in still other situations the bottlers are independent local entrepreneurs. TCCC-affiliated bottlers purchase their sugar from various local mills. Some of these mills are independent companies, but others may be owned, in part or in full, by the same business groups that own bottling companies. The mills purchase sugarcane from local plantations. Once again, some of these plantations are independently owned while others are owned and operated by the mills. Finally, the workers harvesting the sugar on the plantations are, at times, full-time workers employed by the farms or mills; other times seasonal contract workers employed by the farms or mills; and still other times, teams of workers employed not directly by the producers but by an independent labor intermediary. As a result of these blurred ownership boundaries and fissured employment relations, the possibility for labor code violations is high. This may explain why TCCC became the target of several major labor-rights campaigns in recent years.[18]

Until recently the Brazilian sugar industry was characterized by environmental degradation and inadequate labor standards. In sugarcane farms, these abuses were represented by the *bóia-fria*, a common but derogatory name for those migrant rural workers who were paid low wages based on the piece-rate system, enjoyed few if any employment benefits, lived in improvised and crowded dorms or migrant worker campsites, wrapped themselves in rags to protect against the scorching sun and various insects or snakes in the fields, and were transported back and forth to the various worksites in the backs of pickup trucks. Children often accompanied their parents into the fields, but the work can be so demanding that even grown men sometimes die of fatigue. In the state of São Paulo, more than twenty sugarcane cutters died from exhaustion between 2004 and 2009.[19] Since 2003 the Brazilian Ministry of Labor and Employment has maintained a database of employers found to subject their workers to slave-like conditions. In 2013, the list contained 394 employers; ten were sugarcane farms (2.5 percent of the total) that employed 1,701 modern-day slaves (19.3 percent of all modern-day slaves found in the country).[20] Historically, mills were no better. Industrial workers toiled between twelve to eighteen hours a day without pause for the duration of the six- to nine-month season. Maintenance was deemed disruptive, so equipment was repaired only after it had broken down. Few employees received safety training or wore personal protection equipment so accidents and fatalities were common.

Although many problems remain, in recent years labor and environmental practices in the sugarcane, sugar, and ethanol sector in Brazil have improved. At present, approximately 50 percent of Brazil's sugarcane crop is harvested by machines, a technology that replaces manual cutting and precludes the burning of the fields. Moreover, larger farms hire a significant number of their rural workers directly, pay them above the minimum wage, and provide acceptable housing, transportation, working tools, and personal protection equipment. Child labor is rare or nonexistent. Mills have improved their labor practices as well. For the most part, mills respect the relevant labor laws covering wages, work hours, and health and safety provisions. In fact, since 2010, 249 mills have joined a program sponsored by the Presidency of Brazil that verifies labor standards in sugar production; and 169 mills, which represent 70 percent of the national output, have already been certified.[21]

What explains this turnaround? Building on Matthew Amengual's work on uncoordinated but complementary enforcement strategies,[22] we argue that both private and public regulation evolved in ways that stitched together fissured employment and blurred corporate accountability relations and drove improvements in working conditions and labor standards in TCCC's Brazilian sugar supply. More specifically, government labor inspectors and prosecutors used powerful legal tools to outlaw the subcontracting of certain labor-intensive activities and reassign legal responsibilities over labor standards to those firms that control the supply chains. At the same time, private auditors commissioned by multinational buyers encouraged various process changes that led to greater integration across different business functions and the resolution of internal company conflicts that had prevented improvements in working conditions. Although these public and private agents did not communicate with one another, their parallel enforcement actions blocked the low road and steered targeted firms to a higher road that made compliance with labor standards not only viable but, at times, even desirable.

Data and Methods

This article relies on a combination of descriptive quantitative data and field research conducted in Brazil in 2008. The descriptive data comes from a panel of 116 audits commissioned by The Coca-Cola Company (TCCC) and conducted in Brazil between 2002 and 2008. A total of thirty-six mills and twenty-seven farms were audited, some more than once. These audits are part of TCCC's Supplier Guiding Principles (SGP), a code of conduct that has been in force since the early 2000s. The qualitative data for this study come from field visits to a stratified sample of nine mills and farms in São

Paulo and Pernambuco and interviews with eighty representatives of private, public, and nonprofit entities relevant to the sugar sector in Brazil. Eight of the farms and mills were active TCCC suppliers and one was a former supplier. Together, they provided 37 percent of the sugar sold to TCCC bottlers in Brazil on that year. In each of these sites, we toured the facilities and interviewed lead informants selected among managers and staff responsible for a range of departments, including agricultural production, industrial operations, labor relations, quality assurance, corporate social responsibility, and sugarcane procurement. In some instances we interviewed the general manager/president of the enterprise as well. In total, we interviewed forty-five informants at farms and mills. All interviews were conducted in Portuguese, without the aid of translators (the authors are fluent/native speakers).

To complement the data, we also interviewed TCCC officials responsible for its food safety and labor compliance programs, representatives from TCCC bottlers, private auditors commissioned by TCCC, representatives from both mills' and farms' business associations, and researchers from a privately funded sugarcane research institute. Finally, we interviewed twenty-nine representatives from labor unions, community groups, and government agencies, including state and federal prosecutors and labor inspectors, state officials employed by the environmental protection agency, a loan officer at the Brazilian Development Bank (BNDES), and elected officials who represent sugarcane growing regions.

Public and Private Regulation: Complements or Substitutes?

Codes of conduct and efforts aimed at monitoring compliance with these codes have a long history. Whereas initially these efforts focused primarily on corporate compliance with national regulations overseeing various business practices (i.e., preventing corruption), over time, monitoring efforts have become increasingly directed at compliance with private, voluntary codes of conduct, especially as they apply to labor, health and safety, and environmental standards.[23] Responding to pressures in the 1990s from consumer groups and labor-rights nongovernmental organizations (NGOs), numerous global corporations developed their own private codes of conduct and monitoring mechanisms aimed at enforcing compliance to these codes.

Critics of private compliance programs argue that they displace government and union interventions and are designed not to protect labor rights or improve working conditions but rather to limit the legal liability of global brands and prevent damage to their reputations.[24] Others, however, argue that private voluntary self-regulation is not an attempt to undermine the state but rather an appropriately flexible response to the reality of global production networks and the low capacity of developing country states to fully enforce labor laws and regulations.[25] According to this second group, *under certain conditions*, the compliance efforts of brands, multi-stakeholder initiatives, and NGOs can work to strengthen government enforcement of national laws, particularly when states lack the capacity or the resources to carry out systematic factory inspections.[26]

In response to these limitations of and controversies surrounding private compliance programs, a number of scholars have begun to focus on regulatory reforms and innovative government programs aimed at enhancing enforcement of labor laws and employment standards. This novel approach builds on a renewed appreciation for state capacity in developing nations and the use of discretion by street-level agents to enhance rather than undermine the rule of law. According to Michael Piore and Andrew Schrank, “a regulatory renaissance” is underway in a host of developing and already developed nation-states.[27] Significant expansions of labor inspectorates and labor ministries are reported in countries as diverse as Argentina, Brazil, Costa Rica, El Salvador, France, Honduras, Spain, Morocco, and Uruguay.[28] More than simply increasing the size and budgets of these respective government bureaucracies, various scholars describe an array of innovative strategies pursued by labor inspectors (sometimes public prosecutors) in Brazil, the Dominican Republic, Argentina, Cambodia, China, and even the United States.[29] These innovations range from the enhanced professionalization of and increased discretion given to labor inspectors in the Dominican Republic so that they can more thoroughly enforce labor laws,[30] to the development of sector-based enforcement strategies by the Wage and Hour Division of the U.S. Department of Labor that enable labor inspectors to more effectively regulate labor practices in industries characterized by “fissured” work organization,[31] to experiments by activist labor inspectors in Brazil that combine both old and new forms of enforcement—deterrence (fines and sanctions) with pedagogy (providing technical, financial, and legal advice)—so that noncompliant firms can gradually move toward compliance with national labor and environmental laws while maintaining their ability to compete.[32]

Ever since Peter Evans examined the evolution of the information technology sector in developing nations, studies of state-led industrial transformation have relied on the idea that governing authorities must be both embedded and autonomous to be developmental.[33] Embeddedness is defined as a “set of social ties that binds the state to society” and produces textured knowledge about private-sector goals, capabilities, and constraints.[34] Armed with this knowledge, public-sector agents can follow Hirschman’s advice and induce private firms to take advantage of “resources and abilities that are hidden, scattered or badly utilized.”[35] Conversely, autonomy emerges from “highly selective meritocratic recruitment and long-term career rewards [that] create commitment and a sense of corporate coherence.”[36] Together, these two countervailing forces enhance each other and increase the likelihood that regulatory interventions will stimulate private-sector entrepreneurship and promote development. Despite the robustness of this argument, studies concerning the enforcement of labor regulations have not fully examined how public, private, and international regulatory enforcement regimes interact to produce this kind of influence. In some instances, enforcement agents establish formal relationships that include recurrent meetings and explicit coordination. Some of these relationships are collegial and cooperative.[37] Others are conflictive, and agents join forces only in the face of a crisis.[38] In still other instances, public and private agents complement each other tacitly, without interaction effects or mutual reinforcement. For instance, Matthew Amengual describes how, in the Dominican Republic, private auditors devote their attention to monitoring compliance in firms in Export Processing Zones (EPZs), while labor inspectors devote their attention to visiting firms outside of EPZs, which produce for the domestic market.[39] This division of labor among public and private agents allows them to specialize, but for the most part the performance of one set of agents does not affect the other. In brief, existing studies have identified modes of public-private coordination that are either purposeful and therefore rare, or passive and therefore unlikely to reach their full transformative potential.

This article explores in greater detail how private and public forms of regulation combine on the ground through an examination of efforts to improve labor standards in the Brazilian sugar industry. Although private and public actors pursued their own strategies—for their own organizational and political reasons, and with little if any coordination between them—these two parallel tracks of enforcement led nonetheless to significant improvements in working conditions and labor rights for a group of workers (seasonal, sometimes migrant workers in both the fields and in the mills) who have historically lacked adequate protections from either the state or the private entities employing them. How this parallel but mutually reinforcing path toward labor enforcement occurred and what it means for future efforts to promote labor standards in other settings is the focus of the following sections of this article.

The Brazilian Sugar Industry

The Brazilian sugarcane, sugar, and ethanol industry presents almost insurmountable challenges to regulatory authorities interested in improving labor standards. These difficulties can be divided into four types. First, various features of the sugarcane plant lend themselves to abusive labor conditions. This phenomenon, sometimes referred to as "crop determinism," is partly due to the fact that sucrose is located near the root of the cane, so workers must bend very low and exert significant force to cut each stalk.[40] In addition, sugarcane grows in tropical areas where the heat makes the work even more arduous. Compounding the problem, sugar producers try to harvest the cane exactly when it peaks and process it immediately to maximize yield. For this reason, workers must work long hours, often forsaking breaks and rest days, throughout the peak harvest season. Second, sugar and ethanol are globally traded commodities with readily available substitutes (beet sugar and high-fructose corn syrup for sugar; gasoline for ethanol). As a result, producers face narrow profit margins and a highly elastic (horizontal) demand curve that prevents them from transferring cost increases to buyers. Third, to compensate for their inability to raise prices, farms and mills often outsource or subcontract labor-intensive activities, which puts additional downward pressure on labor standards. During the harvest season, sugarcane producers must recruit, train, supervise, and in many cases, dismiss large quantities of workers in a relatively short period of time. To solve this problem, Brazilian sugarcane farmers have historically relied on labor contractors (locally known as *gatos* or *empreiteiros*) who charge for production and provide a labor force on demand.[41] For farm managers, this system is close to ideal: no hassle and no risk at a relatively low cost. However, this arrangement is often associated with some of the worst violation of labor standards, including forced-labor conditions that in Brazil are legally known as “slave-like” and trigger serious legal consequences. Finally, the Brazilian sugar sector is composed of large and politically connected family firms that expanded their operations under sheltered conditions, retain enormous political clout, and resist change.

In sum, sugarcane is a difficult crop that has often been associated with egregious labor conditions and damaging environmental practices. Because of the political clout of most traditional sugar producers, efforts to reform labor and environmental practices have often failed. And yet in recent years, because of parallel developments in both the private and public sectors, positive change has occurred even in this traditional bastion of power and worker exploitation.

The Coca-Cola Company’s Supplier Guiding Principles: The Private Path to Labor Standards Enforcement

Every year since 2001 the consulting firm Intebrand has identified Coca-Cola as the most valuable brand in the world.[42] Naturally, this kind of achievement does not come cheaply. In 1999, TCCC invested 1.7 billion dollars in advertisement.[43] By 2010, TCCC had upped its annual advertising budget to 3 billion dollars.[44] Not surprisingly, TCCC was dismayed when a series of food safety, labor, and environmental scandals threatened its carefully guarded reputation. In 1999, more than 200 people fell ill in Belgium and France after drinking Coca-Cola. As a result, government authorities in four European countries ordered all TCCC products removed from supermarket shelves in what became the most expensive recall in the company’s history.[45] In 2001, a Colombian labor union sued TCCC and some of its bottlers in U.S. courts for the assassination of union leaders and other violations of international human rights laws. Meanwhile in India, community leaders accused TCCC bottlers of depleting underground water supplies and inadequately disposing of its industrial sludge. Compounding the problem, Indian activists claimed that soft drinks bottled in the country were laced with DDT and other pesticides. In 2003, an experienced U.S. organizer connected these separate threads and launched the “Killer Coke” campaign. Among other effects, this campaign resulted in numerous U.S. and UK colleges and universities banning Coca-Cola products from their campus contracts.[46] The lawsuits brought on behalf of the Colombian activists were eventually dismissed by U.S. courts and practically all bans enacted by colleges and universities were short-lived, but the outcry caused plenty of unfavorable publicity. Major business outlets such as the *Wall Street Journal, The Economist*, and *Businessweek* chronicled the TCCC’s tribulations, and *The Nation* labeled Coca-Cola “the new Nike.”[47]

Coca-Cola responded to these events with two main initiatives. In 2000, and immediately after it faced the food-safety crisis in Europe, TCCC stopped relying on bottlers to verify whether suppliers followed adequate food safety procedures and started commissioning its own audits. The cornerstone of this program is the T1 Compliance Audit, in which auditors classify suppliers on a five-point scale depending on the reliability of their manufacturing process and the quality of their products. Only suppliers that have been audited and authorized by TCCC can sell their goods to bottlers in the network. And in 2002 TCCC instituted a code of conduct named “Supplier’s Guiding Principles” (SGP), which requires that its first and second-tier suppliers adopt responsible workplace practices, comply with local labor and environmental laws, and respect international human rights standards. Since then, TCCC has joined the UN Global Compact, issued annual sustainability reports, partnered with the World Wildlife Fund to promote sustainable agricultural practices, and joined Bonsucro’s multi-stakeholder initiative to encourage its sugar suppliers to move toward certification.

The SGP program is built around periodic audits, in which auditors commissioned by TCCC visit suppliers to examine their performance. According to TCCC’s guidelines, all suppliers must have passed a SGP audit before they can sell sugar to the TCCC network; facilities found to be in compliance must be reassessed within one to three years, and those with more serious violations must be reassessed within six months; and suppliers that commit too many violations may be deauthorized from selling to TCCC affiliates. Visits are scheduled in advance and follow a predetermined protocol set forth in a 100-page document called *SGP Service Provider Handbook* that includes questionnaires, form letters, templates, and other resources. As stipulated in this document, every audit includes a kickoff meeting with the directors of the audited enterprise, a complete tour of the premises, confidential interviews with a minimum sample of randomly selected employees and contractors on site, a thorough review of internal documents, and a closing meeting. When visiting farms, auditors carry a checklist with 250 items. When visiting mills, the checklist contains 164 items. In both instances the items address a range of topics, including health and safety, wages and hours, forced labor, child labor, freedom of association, and other labor-related issues. Each item is checked to indicate whether the enterprise is in compliance or not (i.e., assessments are binary). Some violations (such as child labor) are considered extremely grave. In these cases, a finding of noncompliance carries 100 points and triggers a warning that TCCC will cease working with the particular supplier unless the situation is corrected immediately. Other items are considered of medium gravity and carry ten points. The least serious violations carry one point each. Once the auditor has finished the visit, he or she completes and shares with the audited firm a Summary Assessment Report detailing the findings, listing any corrective actions deemed necessary, and determining a timetable for implementation. Within ten days, the auditor submits to both the supplier and TCCC a full assessment report with all the findings and assigns the firm a color code. Those suppliers with twenty-eight points or more are “Red,” which indicates “serious noncompliance”; those with eight to twenty-seven points are “Orange,” which indicates “moderate noncompliance”; those with one to seven points are “Yellow,” which indicates “minor noncompliance.” Those with zero points are “Green,” or “fully compliant.”

The dataset of audits provided by TCCC is not large enough to allow for even the most basic statistical analysis, but simple averages indicate that labor standards have improved significantly among TCCC’s Brazilian sugar suppliers over time. As Tables 1

Table 1. Points per Audit – Mills.

	1st Audit	2nd Audit	3rd Audit	4th Audit
Max	140.0	100.0	42.0	13.0
Average	29.7	22.1	16.5	13.0
Min	3.0	1.0	1.0	13.0
Standard Dev	23.8	23.7	13.5	n/a
Sample size	36	29	15	1

Source: TCCC data for 2002-2008 on file with the authors.

Table 2. Points per Audit – Farms.

	1st Audit	2nd Audit
Max	101.0	15.0
Average	27.2	7.6
Min	0.0	1.0
Standard Dev	29.0	4.7
Sample size	27	8

Source: TCCC data for 2002-2008 on file with the authors.

and 2 indicate, mills accrued an average of 29.7 points on their first audit, but only 16.5 points on the third audit. Likewise, farms accrued 27.2 points on their first audit but only 7.6 points on the subsequent audit.

Naturally, these figures must be interpreted with care. Audits are scheduled in advance and follow a predetermined script, so firms might be learning how to "game the system," for instance, by discontinuing certain practices on the day of the visit, learning to hide other practices in a second (or third) set of books and time cards, and coaching workers how to answer the questions posed by the auditors. To check whether the improvements are real, we collected a range of supplemental data from independent sources and they confirm that labor standards have improved over time. As will be discussed in further detail below, the formalization rate in sugarcane production is more than double the national average for agriculture; labor inspectors have not detected a single case of child labor in this industry since 2007; and occupational accidents have declined, particularly in sugarcane farms, even as production volume has increased. In addition, a plurality of farms now recruits workers directly instead of relying solely on labor intermediaries or subcontractors. As part of this shift, farms house their employees in appropriate dormitories, transport them in buses equipped with toilets instead of pickup trucks, and accommodate their machetes in the luggage compartment and not on workers' laps. Furthermore, farms provide workers with uniforms, personal safety equipment, warm meals, potable water, proper toilets in the field, sunscreen, and other amenities mandated by law. Along similar lines, sugar mills have reorganized their work into three eight-hour shifts, keep many of their workers employed year-round, and provide them with a weekly rest and a monthlong vacation as determined by law. One mill agreed to share its data on work-related accidents, and

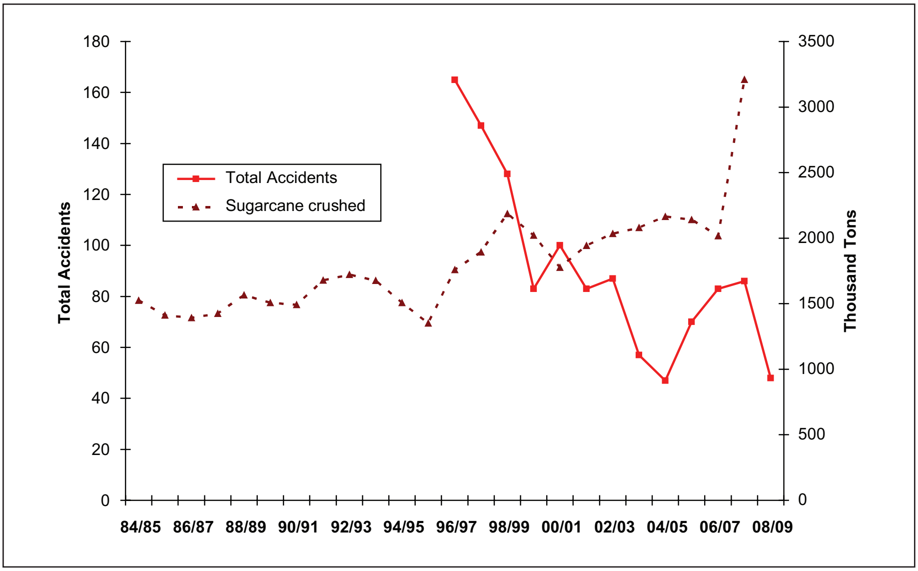

Figure 1. Workers' Accidents - Mill X.Source: TCCC supplier data on file with authors.

the tendency is one of marked improvement over time. As indicated in Figures 1 and 2 below, there a was spike in less-serious accidents from 2004 to 2007, and this period coincides with the opening of a new additional plant by this particular mill and thus over-working its existing workforce during this phase of ramp up. Yet, as soon as the new mill began operating with its own staff (see sharp increase in total cane crushed in 2007), the number of accidents once again decreased.

How did these improvements come about? To understand the drivers behind this phenomenon, we need to examine the role private auditors played at these sugar mills and plantations.

Private Auditors in Action

In Brazil, SGP audits are conducted by the local offices of global auditing firms with dedicated corps of full-time auditors. These professionals are not formally or deeply embedded within TCCC, its bottlers, or even the broader sugarcane, sugar, and ethanol sector. Typically, auditing firms offer a variety of services and hire auditors that specialize in particular issue areas (labor, environment, food safety, quality control) but not economic sectors. In practice, this means that the same auditor who verifies labor standards in a sugarcane farm will also verify labor standards in a petrochemical facility or even a garment manufacturer. Auditors who work for TCCC in Brazil are fluent in Portuguese and come from varied backgrounds. Some are lawyers by training, while others are engineers or have degrees in business administration. To enhance the

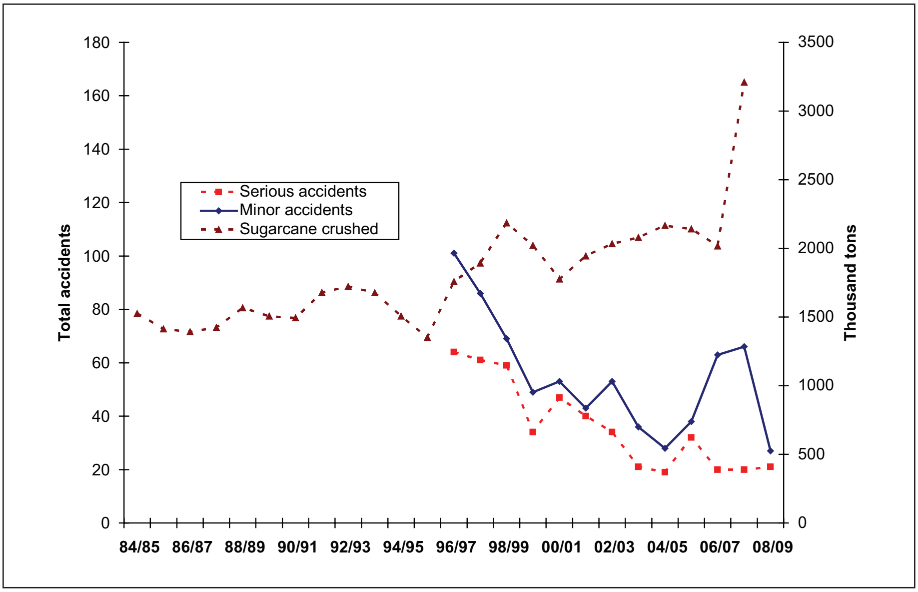

Figure 2. More Serious versus Less Serious Accidents - Mill X.
Source: TCCC supplier data on file with authors.

quality of their services, well-established auditing firms hold regular staff meetings so that auditors can exchange experiences and ask their more experienced colleagues for clarification on technical points. Auditing firms also offer regular training so auditors can update their knowledge of local laws and learn about best practices.

Despite all these resources, auditors have limited power to influence TCCC's commercial decisions.[48] According to the dataset provided by TCCC in Brazil, TCCC rolled out its audit program gradually so most commercial relationships preceded the audits and thus were not easily influenced by their outcomes. For instance, only 17 percent of the mills that sold sugar to the TCCC network in 2005 had been audited at the beginning of that year. These data also show that follow-up audits do not always occur within the prescribed timeframe. Farms found to be in moderate or serious noncompliance were reaudited within six months or so, as dictated by SGP guidelines. However, mills tended to be reaudited after a year and a half regardless of their performance on the preceding audit. Once the full dataset of follow-up audits is taken into account ($n = 53$), a supplier's performance in a prior SGP audit correlates only slightly with the wait time for the follow-up visit ($r = -0.15$). Finally, and as described by numerous interviewees, the threat of termination for serious noncompliance is not always credible. As stated by a knowledgeable interviewee, by 2008 no supplier had been deauthorized for failing to comply with SGP standards.

Notwithstanding their limited ability to coerce, experienced auditors still find ways to remain relevant. Our interviews revealed that auditors use their inside status and detailed knowledge of firms to promote change from within. More specifically, among several sugar producers in Southeast Brazil, external auditors established important political coalitions with functional (middle) managers at these production sites in ways that led to investments in new processes and improvements in working conditions. To understand how auditors came to play this role, one must recognize that the sugarcane, sugar, and ethanol firms organize production in different ways. Even if sugarcane, sugar, and ethanol are undifferentiated commodities with thin margins and high volatility, farms and mills are not always well-oiled machines, eager to innovate, upgrade their equipment, and adopt all practices that increase productivity and reduce excessive economic, legal, or social risk. In practice, heterogeneity is the norm.[49] On one end of the spectrum resides what could be termed the "low-road" to sugar and ethanol production, in which production is characterized by limited upfront investment, informal relations, arms-length transactions within the firm and across the supply chain, minimal supervision, no job security, and no workforce development. As illustrated by the quote below, farms that pursue this "low road" strategy transfer many risks to employees, but they still face some uncertainties:

> In the past, sugarcane workers left their hometowns on their own and knocked on our doors by themselves. Work relations were quite loose; there weren't formal contracts or commitments from either side. Workers were paid on a piece rate and provided their own lodging, uniforms, tools, and meals. [However], farms had to provide workers with enough cane to last a full day [otherwise they would leave and not come back]. And if the cane was too entangled or hard to cut, the workers would turn around and leave.

Similarly, mills that engage in a low-road mode of production simplify their routines at the expense of workers' health, but incur some losses in productivity and increased production costs due to excessive overtime:

> We used to work on two shifts of 12 hours each, seven days a week. People alternated between day and night every 15 days, and worked 18 hours on Sunday to allow for this rotation. We would do it for six months straight, the whole season. It was hell.

> We had this culture that allowed, even prized, excess overtime. It was a sign of devotion, and it paid more as well.

On the other end of the spectrum, some firms engage in a "high-road" strategy, which is characterized by larger upfront investments, long-term relationships, multi-skilling, and a thicker layer of middle-managers who must train and oversee workers, induce higher commitment, maintain business records, estimate demand, devise metrics, and evaluate performance. These firms face higher risks and require more intensive and involved management, but they may also reap bigger rewards. As described by the Human Resources manager of a large integrated mill:

> We recruit our rural workers directly in the Northeast of Brazil [...] Five of us travel: the head of HR and four others. Two go first to select the candidates. [...] We learned to establish a good relationship with local rural workers' unions and the municipal governments. The

> unions lend us their office and advertise the vacancies. And by coordinating with the unions, we avoid trouble with other social activists. The local government is also important, because in these tiny towns the city hall is the only place with Internet access, so we need their support as well. We sign formal contracts with workers and notarize them, as mandated by law, at the local office of the Labor Inspectorate, in Vitoria da Conquista. Before boarding the bus, we send memos to the highway patrol to tell them we will be transporting the workers, and we also notify the prosecutors, the Ministry of Labor, and the health department of the location of the dorms.

A similar dynamic of higher worker involvement, more complex managerial procedures, and potentially higher rewards can be observed in the industrial side of the business:

> We operate on 5x1 [i.e. five days of work followed by a day of rest]. This arrangement requires that every team retain a jack-of-all-trades who replaces the worker who takes the day off.

> To meet these standards, we hold on to experienced personnel, train people so they can perform multiple jobs, and promote from within.

> The rule is that there is no overtime, but managers must remain vigilant. If the manager is lax, workers try to revert to a 12h work day. Someone sneezes, someone spends 20 minutes in the bathroom, that's it. The team leader comes over and asks that we revert to a 12h shift structure. No way. One must be tough and manage the situation.

It is not clear whether one model results in higher profits than the other, but willingness to move from a low-road to a high-road system of production tends to break along hierarchical lines. Historically, Brazilian sugarcane farms and sugar and ethanol mills adopted a low-road system and did well financially. With this memory in their minds, many senior managers still fear the high upfront investments, recurring costs, and managerial burdens associated with better labor standards. As explained by the CEO of a large mill, "High [labor] standards do not result in higher revenues. Sugar is a commodity; nobody asks how it was produced." The head of agricultural operations at this mill elaborated on this point: "The price of a commodity does not depend on whether you feed your workers or not, whether the mattress in which they sleep is hard or soft."

Conversely, middle managers with technical training (and some forward-thinking directors) favor more sophisticated managerial systems and tighter administrative controls. They claim that many improvements in labor standards either pay for themselves or act as building blocks for necessary improvements in other areas such as environmental performance and compliance with food quality and safety standards. For instance, they point out that a proper set of rotating work shifts reduces costs through a decrease in overtime; smaller (and therefore more comfortable) and dispersed dorms preempt social conflicts and decrease work disruptions; and personal safety equipment reduces accidents and absenteeism. Moreover, better-trained (and satisfied) employees are more productive and can acquire necessary skills, such as monitoring quality levels, keeping production logs, and implementing statistical process controls.[50] In addition, better labor practices improve relationships with government inspectors and decrease the risk of arbitrary regulatory action. As stated by the manager of a high-road mill we visited, "When there is some accusation against us, before taking legal action, the labor inspector calls and asks what's up."

This divergence between proponents of the low road and the high road within a given firm can become a critical bottleneck that prevents change.[51] As described by an auditor:

> During the audit, as one interviews various employees, one can predict that in the final meeting, while presenting auditing results, a fight will break out and the directors will air their dirty laundry in public. You point to a problem and a manager says "I told you so," pounds the table, and storms out of the room. Some of these meetings become a free for all, arrows flying in all directions, each director accusing the others. It happens all the time.

In this context, experienced auditors take advantage of their status as insiders to act as catalysts of managerial change. They open internal channels of communication, subvert rigid hierarchies, and amplify the voices of reformist directors and employees closest to operations vis-à-vis those who oppose change. In the auditor's own words,

> The health and safety professionals know exactly what should be done [to reduce accidents]. Or take excess overtime. The HR professionals know that the firm must hire more people and schedule an additional shift, but the directors won't approve it. In these cases, the auditor works by connecting the mid-level managers to the top echelons of the firm. One must understand that the audit is not a weapon, but a tool, a tool to help the firm learn how to perform better.

Middle managers employed by the targeted firm are willing collaborators in this game. The following quotes, from middle managers from different firms, illustrate their perspective on this tacit alliance:[52]

> Whenever I want to improve the production process and the boss disagrees, I ask the auditor to include it in his report, and then the boss approves and we go ahead and do it.

> The auditor definitely helps. You know, "homegrown saint does not work miracles" (*santo de casa nao faz milagre*). You ask for something and the directors are not willing to approve it. Instead, they ask who requested it. If an auditor comes over and requests it, in two days it is approved.

> Auditors ally with middle managers all the time, and this helps get certain investments approved.

> The auditor's report allows you to go to the board of directors with a stronger argument for whatever it is you want to do.

> An [auditor's report] raises the director's awareness. The auditors prepare a report and we add our things to it.

At the end of the audit, firms must prepare an action plan and submit it to TCCC. The writing of these plans constitutes a valuable resource for positive change:

> The writing of the action plan is a crucial moment. For instance, the auditors identify a problem with excess overtime and ask for an action plan [...] The staff at Human Resources had known all along that they have to hire more people and add an extra shift to the workday, but the bosses had never approved it. When they have to write an action plan, that's when they negotiate these decisions within the firm.

Thanks to these efforts, the targeted firms have gradually abandoned the low road and migrated toward a high road where regulatory demands and competitive advantage reinforce each other. In consonance with the managerial models described by both James March and John Sterman and Nelson Reppening,[53] an auditor compared this process to a "snowball effect."

> Slowly, [the directors] overcome this initial panic. And progress is palpable. It takes some time, but things improve, and employees come to thank us for that. It is a snowball effect: at first, the firm is disorganized and the plant is dirty. You force them to change, and down the line this gives them room to improve some more. At first, the firm sees our requests as nothing but costs, and it implements them under the logic that "better this than risk upsetting the client." Eventually they start to see the benefits, the fact that employees are happier, and that the relationship with employees improves.[54]

In sum, private auditors may have limited autonomy to coerce, but they leverage their status as trusted insiders to help audited firms engage in a process of workplace transformation that pushes suppliers toward the higher road.[55] Naturally, this upward trajectory cannot be taken for granted. After all, decision makers within farms and mills could have fought back or achieved (nominal) compliance by outsourcing troublesome activities to labor contractors or other small firms willing to take the regulatory risk. The fact that these troublesome outcomes did not come to pass can be credited to the public regulators—labor inspectors and prosecutors—who effectively denied access to this low road.

The Public Path Toward Enforcement

Since the mid- 1990s, Brazilian labor inspectors and labor prosecutors have been investing enormous effort to enforce of labor laws. The Labor Inspectorate is a division of the Ministry of Labor and Employment, a federal agency that employs approximately 3,000 inspectors allotted to field offices spread throughout the country. Inspectors are hired through an entrance exam and have the prerogatives of fairly high status civil servants, including job security. They also have jurisdiction over the whole labor code and are empowered to conduct unannounced visits, impose fairly hefty fines for violations, and suspend operations at any worksite that presents immediate and excessive danger to workers. Also important, labor inspectors retain enough discretion to balance critical requirements against less stringent demands and they often combine deterrence with other modes of enforcement action.[56] In sum, they exemplify the "Latin Model" of labor inspections originally described by Michael Piore and Andrew Schrank.[57]

The Labor Prosecutors' Office is a federal agency that employs approximately 700 labor prosecutors. These officials yield enormous legal power: they can initiate both class-action lawsuits (*ação civil pública*) and criminal proceedings against alleged violators, and they can also settle civil cases through a legal instrument (*termo de ajustamento de conduta—TAC*) that imposes onerous demands on defendants. Labor inspectors and prosecutors tend to have a good working relationship and they often conduct inspections together. Although some prosecutors engage in "relational regulation" and try to steer firms toward compliance in a somewhat gentle manner, others use their legal powers bluntly and forcefully, particularly when targeting large businesses such as sugar mills.[58]

Inspectors and Prosecutors in Action

For many years, labor inspectors and prosecutors did not have the manpower or expertise to enforce labor laws in rural areas. And even if they had tried, they would have run into a seemingly insurmountable problem: farms and mills tended to outsource the harvest to labor contractors who charge for production and manage their own labor gangs. As a labor prosecutor stated, "In rural areas, the major problem is outsourcing." These arrangements pose a thorny problem to regulatory enforcement officials because labor contractors do not possess valuable assets that can be seized and they do not depend on their reputation as law-abiding actors to recruit, let alone retain, clients. As a result, conventional enforcement actions such as deterrence or tutelage are unlikely to yield results.

In theory, labor inspectors and prosecutors could join forces with brand-conscious private corporations such as TCCC to impose commercial sanctions on sugar and ethanol producers that hire labor contractors. In practice, public enforcement officials go to great lengths to keep TCCC, sugarcane farms, and sugar and ethanol mills at arm's length. As a prosecutor explained, "I have no relationship with large private firms. I have never seen them, and as far as I can tell, they only take action after we have prodded them." Another prosecutor was even more categorical: "[Under my stewardship] the Prosecutors' Office will never establish alliances with big international companies. Our allies are the social movements, the labor unions, and the human rights NGOs." In brief, public regulatory officials prized their autonomy and were not willing to risk it through even the appearance of collaboration or compromise with private interests.

In the state of São Paulo, the public sector's ability to enforce labor laws in rural areas started to change in the early 2000s, when a group of agronomists who used to occupy a marginal role in the Labor Inspectorate acquired the status of inspectors and helped create the "Rural Inspection Unit" (*Grupo Rural*). At first, these inspectors had limited resources and no way to locate and punish labor contractors who flouted labor laws. Eventually, they realized they could take advantage of a relatively obscure court order that reassigns responsibility over labor standards within a given supply chain. Known as TST-331, this legal directive was issued by the Brazilian Superior Labor Court in 1993.[59] It contains less than 200 words and states that businesses can outsource support activities (*atividades-meio*) but not core activities (*atividades-fim*), which must be performed in-house. Naturally, such a succinct document does not elaborate on what constitutes *support* versus *core* activities. Exploiting this ambiguity, labor inspectors and prosecutors argued that the harvesting of the sugarcane is a core activity that cannot be outsourced or subcontracted. Labor courts concurred and abrogated existing outsourcing contracts. Thanks to this decision, farms and mills became liable for the labor rights of all workers who harvested their cane, regardless of whether they were direct employees or employed through labor intermediaries.

Farms and mills did not accept this decision lightly and sought ways to keep both labor costs and administrative burdens to a minimum. Some farms encouraged their laborers to create their own "workers' cooperatives" that the farm would then hire to harvest its cane. This arrangement relied on Law 8.949 of 1994, which states that members of cooperatives are not direct employees and therefore are not covered by labor laws. Other farms sought refuge in an earlier piece of legislation, namely Law 4.214 of 1964, which allows landowners to forge sharecropping arrangements with rural workers. In these arrangements (called *parcerias*, or "partnerships" in Portuguese), the farm provides the land and administrative support, the sharecroppers provide the labor, and the two parties share the proceeds. Once again, legislation regulating sharecropping does not view sharecroppers as employees and therefore does not protect their labor conditions.

Even though partnerships have a positive ring to them, and cooperatives evoke empowered workers and democratic governance, labor inspectors and prosecutors considered these arrangements a ploy to circumvent labor regulations. As stated by a prosecutor, "It was like a fever, everybody was creating these workers' cooperatives and naming the *gato* [labor contractor] president. We did not fall for it. We came down hard and put an end to this story." Once again, labor courts sided with the inspectors and prosecutors and declared these arrangements illegal.[60] As a result, farms became responsible for the labor standards of all workers who harvested their cane.[61]

These legal demands had an impact on mills as well. Through another legal principle (*responsabilidade solidária e subsidiária*), regulatory enforcement agents argued that buyers could be deemed responsible for labor infractions committed by their suppliers. In other words, mills could not claim ignorance over the conditions under which their raw material was produced. As explained by the manager of a mill: "Either we harvest the cane at our suppliers' land, or we monitor their labor conditions. We are responsible, so we need to monitor everything they do. Even those that bring the cane all the way to the mill, we monitor them."

In sum, public regulatory enforcement agents used their autonomy and extensive legal powers to block the main access ramp to the low road and in the process they compelled farms and mills to adapt. Predictably, firms resisted, attempted to circumvent this push through various strategies, and lobbied for relief. Countervailing these evasive maneuvers, private auditors used their privileged access to help the targeted firms solve internal managerial conflicts and operational bottlenecks that in the past had prevented improvements in labor practices. Together, the combined action of public and private regulatory enforcement agents triggered a range of (mostly positive) outcomes. The next section describes some of these outcomes, while the Conclusion draws out the causal mechanisms behind this effect.

The Combined Effect of Private and Public Regulations

The combined action of public and private authorities produced three palpable changes in the Brazilian sugarcane, sugar, and ethanol sector. First, and even if many problems remain, a plurality of sugarcane farms and mills have improved their labor practices. Nationwide, 74 percent of sugarcane workers are formally registered by their employers and thus entitled to a range of mandatory employment benefits such as overtime pay and unemployment insurance. In São Paulo state, the rate of formalization in sugarcane production approximates 90 percent. These figures contrast sharply with formalization rates in Brazilian agriculture in general, which hover around 32 percent (see Figure 3).[62] In another sign of progress, the Brazilian Labor Inspectorate has not detected a single case of child labor in the sugarcane sector since 2007.[63] Occupational accidents have decreased as well, especially in farms (see Figure 4).[64]

Substantiating these observations further, vocal defenders of labor rights and detractors of the industry admit to some advances. For instance, a social activist (and elected politician from a sugarcane growing town in the state of São Paulo) conceded that “Mills tend to have everything in place: doctors, nutritionists, psychologists, even a soccer field for workers to play.” Moreover, “On their own farms, they do a good job as well.” A combative prosecutor who proudly declared his opposition to the industry also recognized (and claimed partial credit for) other advances, such as the elimination of child labor and the fact that rural workers are now transported on proper buses and no longer in flatbed pickup trucks. Along similar lines, another social activist we interviewed pointed out that the dorms provided by mills have improved noticeably, and wished more workers had access to this resource: “[These dorms] are great; very high quality, clean laundry, clean rooms, balanced diet. Too bad only a few people benefit.” Finally, the nature of remaining disputes between union leaders and sugar mill/plantation managers also suggest that progress has been achieved. For instance, instead of fighting over the provision of mandatory personal safety equipment as they did in the past, now they fight over the precise specification and expected performance of each item, whether safety goggles have a wire mesh or plastic lenses, and whether the gloves are made of nylon or canvas. As summarized by a representative of the industry, “labor inspectors look for violations in the minutiae of the law; to me, this is a sign that things have improved.”

Second, sugarcane farms and mills that for more than a decade had avoided mechanizing their harvests reversed their position and started investing in new equipment,

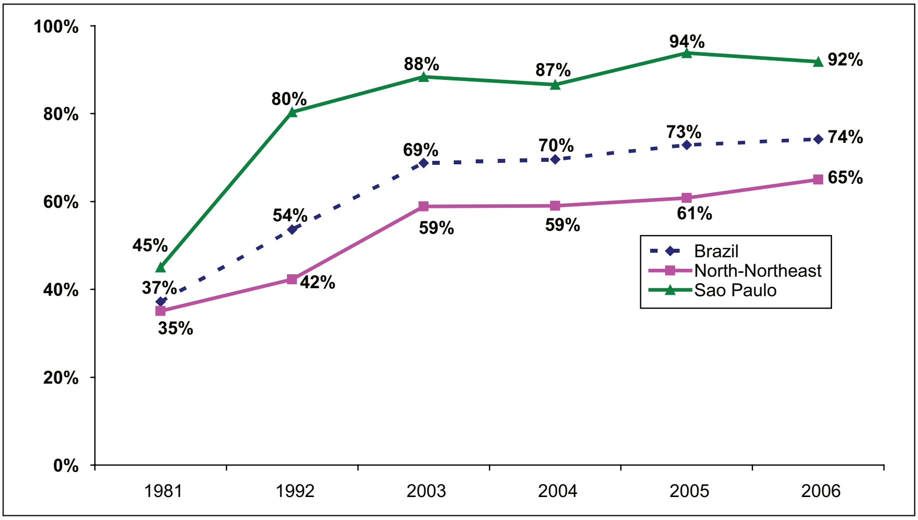

Figure 3. Evolution of Formalization Rates in the Sugarcane Sector.
Source: Moraes 2007a; 2007b; 2008.

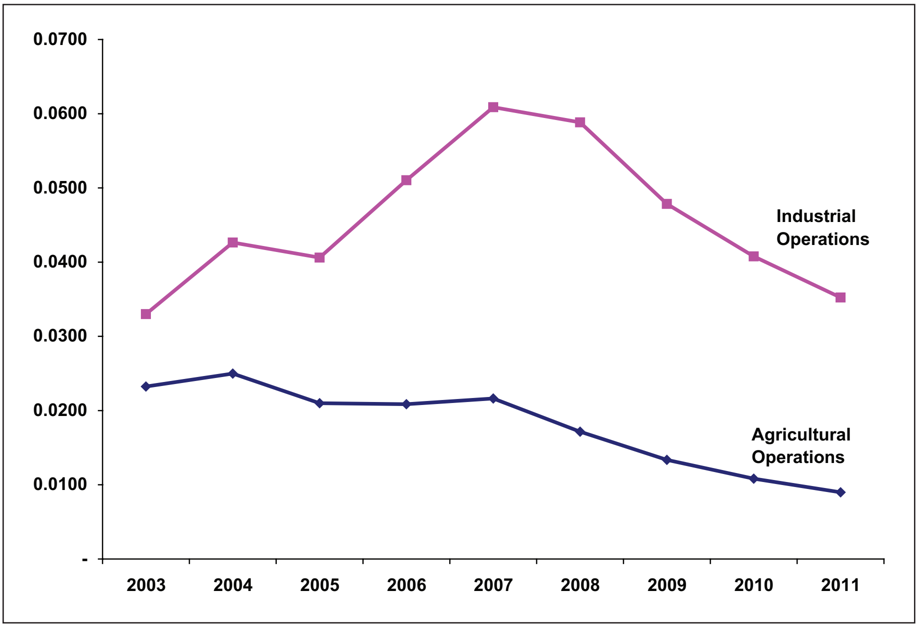

Figure 4. Occupational Accidents per Thousand Tons of Sugarcane Produced.
Source: Anuário Estatístico da Previdência Social 2005; 2008; 2009; 2011.

ahead of the schedule mandated by environmental authorities. Typically, sugarcane farms burn their fields immediately before workers move in to cut the cane. This practice eliminates extraneous foliage and nearly doubles labor productivity. However, it also causes enormous air pollution, increases the incidence of respiratory diseases in neighboring towns, and kills wildlife. The alternative to this traditional practice is mechanized harvesting, but a set of mechanical harvesters can cost up to a million dollars (US) and requires a thorough revamping of work and production practices in both the farms and the mills.[65]

Since the early 1980s environmental authorities in São Paulo have been trying to curb the burning of sugarcane fields, but progress was slow. In 1997, the governor of São Paulo enacted a decree requiring that sugarcane farms mechanize their harvest by 2004.[66] When the deadline approached, less than 34 percent of the sugarcane in the state was being harvested mechanically.[67] The government responded with a new deadline that gave farms until 2021 (or 2031, depending on the topography of the terrain) to meet the target. Environmental activists decried this extended deadline as a travesty and a boon to farms and mills. But then, in a surprising about-face, farms and mills proceeded to mechanize ahead of schedule (see Figure 5). By 2008, 56 percent of the sugarcane fields were harvested mechanically; by 2012-13, this figure had risen to 72.6 percent.[68]

Many variables contributed to this reversal, including advances in harvesting technology and enhanced managerial and technical know-how, but observers of the industry also credit higher labor costs. As stated by the industrial manager of a large mill: "We have been mechanizing ahead of the official deadline because labor costs went up, particularly once the government enacted and started enforcing NR-31 [health & safety regulations for rural workers]. Large mills require immense labor contingents. It becomes unworkable." A technical advisor to the industry corroborated this point: "Wherever labor is scarce, mechanization is advancing rapidly."

Third, to minimize their regulatory risk, mills have increased their land holdings, decreased their reliance on labor contractors, and tightened their relationships with remaining sugarcane suppliers. At present, an increasing number of mills send their own crews (or machines) to harvest the cane at their suppliers' land, offer training and payroll management support to their suppliers, and they audit suppliers to ensure compliance with applicable labor regulations. These changes have had a polarizing effect on the industry. On the one hand, mills have been able to absorb the additional costs associated with compliance. Even more, they often convert the additional burdens into a source of competitive advantage, since more modern equipment, well-trained employees, more accurate records, and increased attention to detail dovetail with (or pave the way for) improvements in environmental performance and compliance with food quality and safety standards. On the other hand, mills charge their independent suppliers for the harvesting, management, training, and auditing services, so suppliers are increasingly squeezed and finding it difficult to compete. Smaller farms have seen their profit margins decline, and many of them try to remain in business by avoiding those regulations that they deem too costly or burdensome. As the head of an association of small farmers explained, "The large mills are finding ways to deal with the

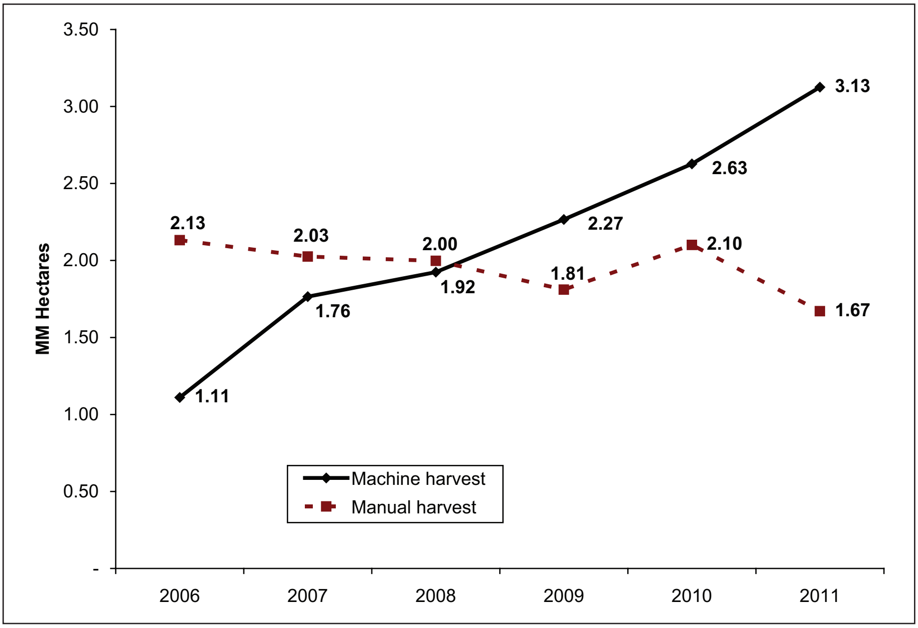

Figure 5. Mechanization of Sugarcane Harvest in São Paulo.
Source: Canasat 2013.

labor issue, but independent suppliers are on their own [. . .] In fact, the smaller your farm, the more complicated it gets." A local social activist echoed this point: "Independent farms are really squeezed [. . .] they don't have scale to mechanize, and they continue to harvest their own cane, otherwise their margins shrink even more. But they try to do it at the lowest possible cost, and often use *gatos* to recruit workers."

In brief, numerous indicators suggest that labor standards have indeed improved in the sugarcane, sugar, and ethanol sectors in Brazil and caused ripple effects on business performance, environmental and food safety practices, and the vertical integration of the industry. Even if these changes have distributional effects and larger firms prevail over their smaller counterparts, the industry as a whole seems to be getting stronger. Above all, these changes suggest that labor standards are becoming intrinsic to normal business operations in a way that reduces the chances that labor practices will slide back to their previous poor levels.

Concluding Considerations

In recent years, researchers have begun to coalesce around the idea that both public and private regulatory enforcement regimes are necessary to improve labor standards in global supply chains.[69] Yet, it is not clear how these regimes interact and the kinds of results they can (jointly) produce. This article examined how public and private agents enforce labor standards in the sugarcane, sugar, and ethanol sector in Brazil. Private auditors played a role by helping individual firms solve their internal production problems. These private agents do not possess the autonomous power, let alone the authority, to coerce firms to comply with labor standards. Instead, they find ways to educate top managers and persuade them that introducing modern production, work, and personnel practices will contribute to the bottom line. Because of their role as "trusted" insiders, these auditors are able to form alliances with functional (middle) managers who had long been advocating (for their own reasons) investments in these new work and production processes. In contrast to the private auditors, public enforcement agents such as labor inspectors and prosecutors have broad reach and sufficient legal powers to punish those firms that fail to comply with labor regulations. However, these agents are not embedded within the sector, so they possess limited understanding of business practices or the reforms that might help targeted firms comply with labor standards without damaging their ability to compete. Given these constraints, public agents can enforce the laws with rigor and affect the sector as a whole but they cannot facilitate firm-level adjustment. Interestingly, public and private regulators refuse to communicate with each other for fear of compromising their access or integrity or even their respective authority. Still, their actions tacitly complement and reinforce one another in ways that promote compliance without compromising firms' ability to compete.

This study does not allow us to disentangle the separate effects of public vs. private interventions and apportion separate credit to each. At the very least, the parallel actions described here might not be strictly necessary to improve labor standards. Some firms might improve labor practices on their own.[70] Others might adopt better labor practices thanks exclusively to the efforts of either public or private agents, and not necessarily both combined.[71] And some firms might be reacting also to forces not chronicled in this study, such as a creatively designed tournament among managers analyzed in a separate paper.[72] Still, the data provided here suggest that the joint action of private auditors and public inspectors provides one of the many pathways for improved labor standards that had been obscured by the prevailing emphasis on either public or private enforcement regimes. Even more, it gives additional credence to the hypothesis that public and private forms of regulation are not substitutes but rather complements. Given the complexity and importance of the challenge, the stubbornness of the problem, and the failure of so many prior attempts to produce even marginal improvements in labor standards in this supply chain, the discovery of such a lever should not be underestimated.

At a more general level, this study provides an example for the model of countervailing but complementary forces proposed by Peter Evans, in which industrial transformation emerges from governing authorities' apt combination of embeddedness with autonomy.[73] It also shows how improvements in labor standards require the state to do more than just provide a stable legal environment or be the "regulatory gorilla in the closet" that passively ensures the success of private regulation.[74] On the one side, public enforcement agents enacted forward thrusts that call for further action and thus create the kind of disequilibria identified by Albert O. Hirschman as an engine of economic development.[75] On the other side, private enforcement agents illustrated Hirschman's insight that development requires private sector managers to be induced to "take the decisions needed for development in the required number and at the required speed."[76] Together, the mutually reinforcing action of public and private enforcement agents not only illustrate the power of Evans' formulation concerning embedded autonomy but also create the kind of "inducement mechanism" suggested by Hirschman as a particularly ingenious way to both compel firms to search for latent opportunities and help them achieve this goal.[77]

Finally, this paper raises a number of questions concerning complementary regulation: Under what conditions can one expect that public and private efforts will complement each other? What are the comparative advantages of different types of enforcement agents operating under different regulatory regimes? How can existing public and private regulatory systems be modified to increase the chances that they will interact positively? In the coming years, the forces unleashed by domestic economic reform and globalization will continue to erode isolated attempts to regulate production, and supply chains will continue to fissure in multiple and unexpected ways. Devising ways to enforce protective regulations in such an adverse environment, while still preserving economic dynamism, will continue to be a pressing challenge for scholars, activists, and policymakers alike.

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