Global Purchasing as Labor Regulation: The Missing Middle[1]

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Do purchasing practices support or undermine the regulation of labor standards in global supply chains? This study offers the first analysis of the full range of supply chain regulatory efforts, integrating records of factory labor audits with purchase order microdata. Studying an apparel and equipment retailer with a strong reputation for addressing labor conditions in its suppliers, we show that it persuaded factories to improve and terminated factories with poor labor compliance. However, we also find that purchase orders did not increase when labor standards improved. If anything, factories whose standards worsened tended to see their orders increase. Contrary to the conventional wisdom, this "missing middle" in incentives for compliance appears unrelated to any cost advantage of noncompliant factories. Instead, lack of flexibility in supplier relationships created obstacles to reallocating orders in response to compliance findings.

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Many firms managing global supply chains have second identities as transnational labor regulators. They ask the factories and farms they purchase from not only to meet technical and quality standards, but also to comply with private codes of conduct governing wages, occupational health and safety, and other labor standards. Over the past 25 years, this private regulation of labor standards in supply chains has spread, often through activist pressure, to the majority of large, branded apparel, electronics, retail, and foodstuffs firms. These firms sit atop supply chains that employ an estimated one in three workers worldwide.[2]

Yet firms are not government agencies. Lacking statutory authority to inspect or penalize other firms, their regulatory power comes instead from their behavior as customers. As standard-setters, they can shape the goals of private regulation and encourage suppliers to comply. As gatekeepers to large consumer markets, they can reward compliant suppliers with more business and punish violators by cutting them out of their supply chains. This combination of persuasion and purchasing decisions—often referred to as sourcing practices or purchasing practices—is central to the efficacy of private labor regulation.

Does the economic behavior of these firms support or undermine private labor regulation? What barriers might prevent the full alignment of purchasing behavior with labor standards enforcement? Despite a growing body of research on private labor regulation, remarkably little evidence speaks to these important questions. This study analyzes a first-of-its-kind dataset linking detailed factory labor compliance records—including audit results and problem-solving activities—to complete microdata on purchases from these same factories by a North American brand and retailer. Drawing on both quantitative and qualitative evidence, we offer the first integrated analysis of importer behavior as regulatory activity.

[2] ILO "World Employment Social Outlook," 2015.

We argue that purchasing practices can create what we call a "missing middle" in incentives for labor compliance. Importers may support improved labor compliance with frequent, low-coercion enforcement measures (persuasion and problem-solving) and rare, high-coercion measures (terminating orders from poor performers). However, buyers that seek stable commercial relationships with suppliers can simultaneously fail to reward factories that improve working conditions. This argument stands in contrast to a major concern among scholars that importers' ability to nimbly move business from one supplier to another threatens supply chain labor standards. Instead, we suggest that stable commercial relationships can also constrain the use of purchasing practices to regulate labor standards in the supply chain, revealing a tradeoff that has been obscured in policy and scholarly debates.

Compliance-promoting Incentives in Trading Relationships

Scholars across industrial relations, sociology, economics, and political science agree that importers shape working conditions in exporting factories throughout the world through both their regulatory actions and their sourcing practices (Barrientos and Smith 2007; Nadvi 2008; Greenhill, Mosley, and Prakash 2009; Mosley 2010; Mayer and Gereffi 2010; Ruwanpura and Wrigley 2011; Oka 2012; Locke 2013; Anner, Bair, and Blasi 2013; Weil 2014; Lund-Thomsen and Lindgreen 2013; Bartley et. al 2015; Bartley and Egels-Zanden 2015; Distelhorst et al 2015). Most studies agree that buyers encourage improvement of labor practices by establishing codes of conduct and instructing suppliers on how to comply (Locke, Amengual, & Mangla 2009; Locke 2013). By contrast, scholars disagree about whether buyers use their market power to create incentives for compliance or to drive down labor standards. Some hold that buyers' volatile demand and insistence on lower prices increase the likelihood of labor violations (Vogel 2005; Anner Bair and Blasi 2013, Locke and Samel 2017). Others argue that the norms

generated by activist campaigns are sufficiently strong that importers use their market power to reward factories that perform well in compliance, even if doing so is costly (Greenhill, Mosley, and Prakash 2009).

Despite differences in these views, most studies analyze the "net" incentives around labor compliance. Our analysis begins by unbundling the diverse activities in importers' regulatory toolkits. First, supply chain regulation involves monitoring suppliers for violations, persuading them to improve, and helping them overcome obstacles to compliance. This persuasion and problem-solving may take place through both on-site audits and more informal communications with suppliers.

In addition to persuasion and problem-solving, importers could in theory generate incentives for compliance by offering more attractive purchasing contracts to compliant exporters. They could delay orders from noncompliant exporters while waiting for those factories to improve or shift production to a more compliant supplier. Importers can also reward factories that improve by awarding them larger purchasing contracts. Multi-stakeholder initiatives have encouraged their members to create such incentives within their ongoing business relationships. For example, the Fair Labor Association (FLA) asks buyers to create "positive incentives for suppliers and/or facilities producing in a socially responsible and sustainable manner,"[3] and to "demonstrate a correlation between purchase orders and supplier [labor] evaluation results."[4]

Importers can also create incentives for compliance by terminating business relationships with noncompliant suppliers. Factories that persistently fail to meet legal or customer-defined labor standards may be candidates to be replaced with other factories that are either better performing or that have the potential to improve. The significance of being "dropped" to the

[3] Fair Labor Association, Principles of Fair Labor & Responsible Sourcing, 2015.
[4] Fair Labor Association, A Guide to FLA Principal Eight, No Date.

supplier factory varies with the scale of the business relationship and the difficulty of replacing that lost business with other customers. Terminating noncompliant factories may create powerful incentives, but the practice is controversial. After the commercial relationship ends, importers no longer have leverage to demand improvements in working conditions, leaving vulnerable employees behind.

The regulatory activity of lead firms can be organized within the Ayres and Braithwaite (1992) ideal-typical framework of a regulatory pyramid. It places enforcement actions along a spectrum ranging from frequent, low-coercion behaviors to rare, coercive measures. Persuasion and problem-solving are low-coercion regulatory activities, whereas reducing purchasing from factories that fail to comply is a more coercive, stronger incentive (assuming that factories prefer that their customers purchase more, not less). At the most extreme, a buyer can terminate a business relationship with a factory, formally taking it out of its supply chain. Termination is the most coercive measure an importer can take, since, unlike government regulators, it cannot levy fines or prosecute noncompliant factories.

Although most previous research focuses on "net" incentives, some recent studies focus more narrowly on some of the behaviors discussed above. Malesky and Mosley (2018) offer survey evidence showing that Vietnamese exporters report higher willingness to invest in labor compliance in order to do business with importers that provide higher price mark-ups. Distelhorst and Locke (2018) found that exporters across 36 countries were, on average, rewarded by increased purchasing when they improved compliance with social standards. Oka (2012) shows that compliance with certain labor standards, such as health and safety, enabled factories in Cambodia to secure long-term sourcing relationships with reputation-conscious buyers. On the other hand, Bartley & Egels-Zandén (2015) offer a pessimistic view on terminations, providing examples of Indonesian factories that permitted the establishment of

trade unions, but were then unable to retain their foreign customers and ultimately closed down. Their finding aligns with interview evidence from Sri Lankan apparel managers, who reported that importers demanded compliance but offered little in return (Ruwanpura and Wrigley 2011, ILO 2017). These studies and others find strong decoupling of compliance activities from sourcing practices (Egels-Zadén 2007). The contradictory results of previous research suggest that much remains unknown about the relationship between sourcing practices and labor compliance

Rather than focusing on one aspect of the importer-exporter relationship, our study contributes an integrated picture of private regulatory efforts, examining persuasion, order allocation, and factory termination decisions together. These behaviors, and their alignment or misalignment, are important because each could either contribute to or undermine the overall efficacy of private regulation of labor standards.

Research Design: Labor Compliance and Purchasing at Active Inc.

We studied purchasing and compliance at a North American brand of athletic apparel and equipment that we call Active Incorporated (a pseudonym) over 2012-2015. Active has a reputation as a leader in environmental and social standards. Like many retailers and brands, Active developed an internal private regulatory system for labor standards in its supply chain. It adopted a supplier code of conduct in the 1990s and is among the small minority of firms that participates in multi-stakeholder initiatives to improve working conditions in global supply chains.

At the time of this study, Active had a supply chain of approximately 70 factories and about $350 million in revenue each year from all sales.[5] Due to its size, Active differs from the

[5] Active sourced from factories in the following countries: Canada, China, El Salvador, Hong Kong, India, Korea, Philippines, Taiwan, Thailand, Turkey, the United States, and Vietnam.

extremely large companies such as Nike that have been the subject of most research on private regulation. Lessons from large firms are important because these firms capture a large amount of market share, but the largest firms are, by definition, atypical. Participation in private regulation includes many mid-size and smaller firms with valuable brands that seek to cultivate reputations for social and environmental responsibility and head-off activist pressures. For example, the median firm in the Fair Labor Association has just 51 suppliers, and many members manage supply chains smaller than that of Active (see Appendix).

Factories that manufacture Active's products are subject to third-party audits before joining the supply chain and at least once every 18 months thereafter. When audits detect violations, Active creates correction action plans (CAPs) that detail the violations and make remediation plans. These CAP records also contain observations of Active staff during non-audit visits and records of communication by email and phone between Active's compliance staff and factory management.[6] These records capture many of the persuasive and problem-solving activities of Active's compliance staff.

Active's approach to labor compliance emphasizes improvement.[7] The CAP documents therefore contain detailed records of violations, root causes, proposed corrective actions, and progress to completion. To measure compliance in supplier factories over time, the research team hand-coded individual violations from several hundred CAP documents. The resulting data set covers compliance activity over the period of 2012 to 2015.[8] In total, it tracks 1,940 violations detected in Active supplier factories through 7,166 events—mostly audits and post-

[6] For example, when factories have violations that relate to their policies or lack of documentation, managers will send this information to Active's compliance team electronically. In these circumstances, Active will designate a violation provisionally closed until the following audit.
[7] Since 2014 Active have also given strategic partner factories scores in twice-yearly evaluations. We do not use these scores for the quantitative analyses because they cover a subset of factories and are not available for the earlier periods of purchasing data.
[8] For some factories, earlier data were also available. We used these data in factory vignettes but trimmed the data from our quantitative analyses to include only seasons in which we had full records across all active factories.

audit communications between Active and the factories—from either the initial detection date of the violation or the start of our data.

Table 1: Labor Violations by Season

	2012		2013		2014		2015
	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Total audits	20	13	27	27	19	18	22
Avg violations	6.99	8.07	7.62	6.82	5.48	5.42	5.58
By type…							
Wages	1.03	1.08	1.14	1.04	0.74	0.72	0.62
Benefits	0.3	0.31	0.3	0.29	0.27	0.35	0.4
Work hours	0.9	0.91	0.84	0.73	0.76	0.76	0.89
Health	4.1	4.97	4.61	4.1	3.31	3.07	3.21
Other	0.66	0.8	0.73	0.62	0.43	0.43	0.44

Notes. Table reports average unremediated violations each season in factories producing for Active. In addition to audits, Active uses factory visits by production staff and communication with factory management to assess compliance between audits. We use all three sources of information to determine what Active believed about compliance in its suppliers throughout the study.

Compliance trends at Active's supplier factories appear in Table 1. Average open violations at each factory during each season vary between 5.4 and 8.1, declining slightly over the period. Two-thirds of the labor violations in our data were considered corrected by Active staff during our study period. One-third were never resolved, either because commercial relations with the factory were terminated or the violation continued to be unresolved as of the last observation analyzed in our study. These levels of non-compliance are similar to those found in other research studying labor standards in global value chains, suggesting that Active's suppliers are not unusual in either non-compliance or compliance (Toffel Short & Oullett 2015).

Audit data offers only an imperfect measure of factory compliance, and is especially problematic in assessing process rights such as freedom of association (Anner 2012). Our analysis focuses on how Active's regulatory practices respond to information about factory compliance. Active's internal compliance records are a major source of information available to managers and are therefore an appropriate measure, even if there is error in measuring the true

working conditions. Active's managers were also aware that 1-2 day audits cannot offer a holistic picture of an ever-changing working environment.

What distinguishes our study from past research on the regulatory activities of lead firms is access to Active's purchase order database, summarized in Table 2. Active purchases an average of 28 million dollars of products from these suppliers per season. Unlike previous studies of purchasing behavior (e.g. Distelhorst and Locke 2018), we observe the date, price, and volume of each order.

Table 2: Purchase Orders by Season

	2012		2013		2014		2015	Full
	Spring	Fall	Spring	Fall	Spring	Fall	Spring	period
Units (million)	1.83	1.48	2.00	1.60	1.55	1.69	1.57	11.72
Cost (million USD)	26.6	27.7	28.4	33.1	21.3	35.0	23.6	195.8
Factories	70	74	69	74	63	74	73	106
Purchase orders	968	767	873	923	860	1046	991	6403
SKUs	6569	4876	6108	5391	4398	6160	6181	27765
Share of purchase value								
Apparel	61%	49%	50%	45%	43%	55%	56%	51%
Backpacks	16%	10%	22%	13%	19%	9%	12%	14%
China factories	33%	47%	28%	54%	35%	53%	41%	43%
India	17%	7%	14%	4%	11%	3%	10%	9%
Thailand	7%	6%	9%	5%	3%	6%	7%	6%
Vietnam	16%	22%	29%	17%	25%	17%	20%	21%

We combined these data with records of Active's low-coercion regulatory activities to persuade and instruct suppliers on compliance. Finally, we supplemented these data with interviews of Active managers involved in both compliance and sourcing, providing insight on organizational processes during the period we study. We cite each interview with a code and provide details in the Appendix. These sources of data allow us to reconstruct the full sequence of regulatory events, from audits to post-audit communications to sourcing decisions and the termination of factories from the supply chain. Of course, organizational practices evolve over

time, and this study focuses only on the period of 2012-2015, for which we had complete records of sourcing and compliance audits.

Regulatory Activity Across the Pyramid: Two Factory Examples

What happens when labor violations are discovered at supplier factories? Before presenting quantitative analyses, we examine two supplier factories to Active.[9] These vignettes, developed from interviews with Active staff and documentary evidence from purchase orders and corrective action plans,[10] illustrate occasionally puzzling and contradictory combinations of regulatory actions, setting the stage for quantitative analyses in the following sections.

Factory 2

Factory 2 is an apparel factory in Asia that manufactured jackets, pants, and sweatshirts for Active since 2009. It was also one of Active's largest suppliers of apparel; in spring 2012, it received orders worth $2.1 million. Yet Factory 2 also had significant labor standards violations; five related to health and safety, four related to working hours, two in employee benefits, and two in wages. At thirteen total violations, the factory had nearly double the average of all factories in that season. Moreover, the factory had taken no meaningful steps to remediate several of these violations for over one year.

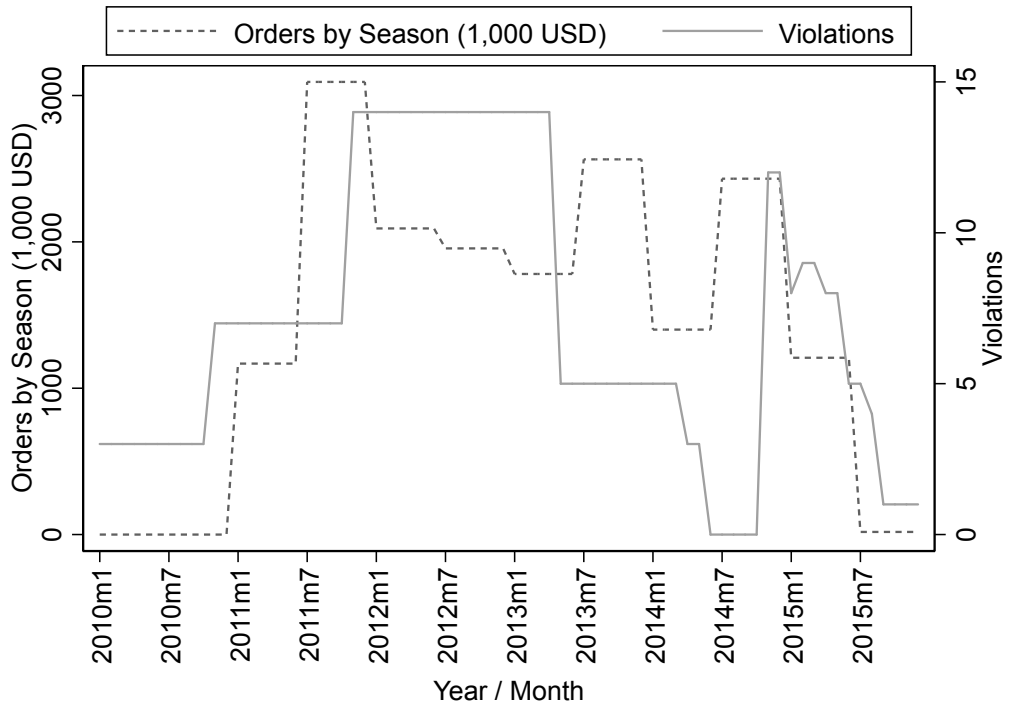
Over the next two years, Active worked with Factory 2 to make progress in reducing violations. Internal records show compliance staff in regular communication with factory management, recommending specific remedies to violations. Factory management responded to these suggestions, taking concrete actions such as training supervisors. A new audit in April 2013 revealed that the total number of violations dropped to five. In the following months,

[9] We selected these cases based on the following criteria. First, to improve external validity we focus on apparel factories that are typical of those studied in the literature on private regulation. Second, we choose factories that had a long relationship with Active, thereby allowing us to observe multiple rounds of interaction between Active and the factory. Third, we choose one factory that Active terminated for compliance reasons, and another that was not dropped for compliance reasons. This selection provided variation on one dependent variable of interest.

[10] Unless otherwise noted, all quotes are directly from the corrective action plan documents, either from auditor reports or communication between Active and the factory management.

Active's records show compliance personnel recognizing the factory for further reducing violations. Active staff visited the factory to encourage additional actions and, in mid-2014, Factory 2 had successfully remediated all violations detected in the previous audit.

Figure 1: Factory 2 Compliance and Sourcing Volume



Did purchasing decisions align with the efforts of Active's compliance staff? The purchase order data shows no response to changes in compliance. Orders over 2012-2014 remained comparable year-to-year (Figure 1). When Factory 2 achieved full compliance in 2014 it also received its lowest seasonal order total ($1.5 million). Nor was there any change in unit prices that could have benefitted the factory without increasing volume.

In a new audit in October 2014, Active's auditors found twelve violations at Factory 2, revealing excessive overtime and insufficient days of rest. The factory used illegal fines to punish workers and paid below standards for annual leave, a form of wage theft. Most troublingly, auditors found that the factory had falsified work hours records to deceive auditors. Quality inspection records showed workers inspecting production on Sundays, but the documents

provided to auditors showed no one working on those days. The auditor noted, "weekly working hours, daily and monthly overtime hours, weekly rest, minimum wage and overtime premium could not be verified effectively." The factory claimed an innocent error, but Active designated this violation "unacceptable" and triggered an immediate escalation.

Purchasing from Factory 2 continued as usual despite these revelations. Shortly after the audit five purchase orders were placed between October 22 and November 20. Orders over the next three months totaled $2.3 million, comparable to the value of the previous Fall season (Figure 1). These do not appear to be rush orders that needed to be placed immediately. Only 3% of the units were scheduled for delivery by March 2015, and 88% were scheduled to arrive after July 2015.[11]

Yet Active by no means ignored the new violations. The compliance team took extensive actions to persuade factory management to change their practices, holding an onsite meeting with factory management about records falsification shortly after the audit. In the following month, Active communicated regularly with factory management as it worked through the remediation process. The factory progressed on a number of issues: beginning air quality checks, changing the way it calculated payments, and adopting new management systems to address overtime and health and safety issues. A follow-up audit occurred in January 2015, and Active expressed satisfaction with the factory's management of work hours and wrote: "Please continue your effort." The auditor also investigated the false records issue, in part by reviewing security video and crosschecking production and hours records. The violations appeared to be resolved and, soon after, Active wrote the factory stating, "We appreciate your effort and confirm the transparency item is closed."

[11] Delaying orders is possible in some cases. In the previous fall season, most orders were sent in November, but an additional order was added in January with a short turnaround time (53 days on average). A delay contingent on demonstrating improvement is a reasonable counterfactual.

Active's records indicate the factory resolved all but one of its violations over the following six months. In May 2015, Active placed $1.2 million in seasonal orders. Compliance staff continued to work closely with factory management, and the factory shared internal data on work hours and social insurance payments in July 2015. Active projected $2.4 million in order volume for fall 2015, and shared this projection with the factory in its scorecard.

Despite the factory's progress, the projected orders were never placed. Factory 2 received only $18,000 in orders in late 2015. Shortly thereafter, Active removed it from its list of approved factories, cutting it off from future orders. Active's documents show that compliance staff commended factory management, writing in the factory's scorecard: "Factory 2 has shown good progress on the [corrective action plan] to date, and is encouraged to continue ongoing efforts to decrease overtime hours." Yet, Active's internal records also noted the factory's low performance on quality and, especially, on-time delivery.

In our interviews, staff recounted Active's main motivation for pulling out of the factory was a change in factory management, which resulted in declining product quality and the factory's inability to meet delivery schedules (B02). Documentary evidence is consistent with this account, suggesting that neither price nor the desire for improved compliance drove the decision. Many of the products that Factory 2 produced were discontinued,[12] but one product that moved to a new factory became 4.3% more expensive than it was at Factory 2, suggesting that price was not the driver.[13] The factory that took over Factory 2's styles had more open compliance violations (seven). In fact, compared to other apparel suppliers, Factory 2 did not have a high number of violations, especially during the end of the period (Figure 1).

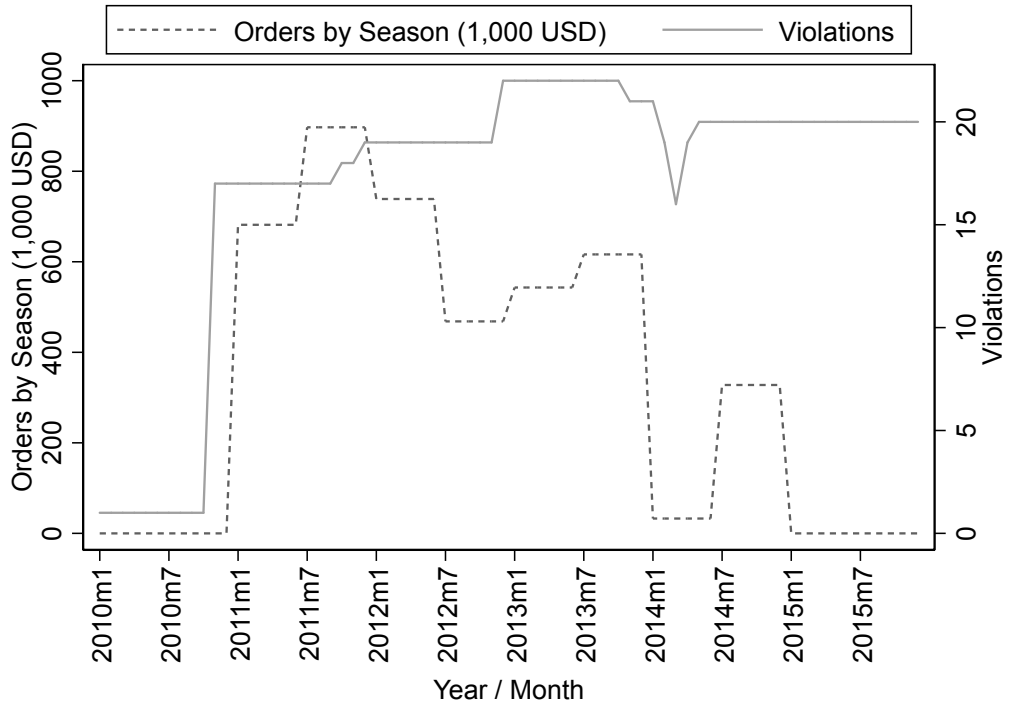
[12] We searched Active's purchase order database for any orders including a SKU that had, at any time, been produced by Factory 2 and another factory. Only one product met this criterion.
[13] The previous year, Factory 2 increased the price of this garment by 1.4%. Thus, while there was a positive trend in prices across seasons, it was greater when Active moved production to a new factory.

In Factory 2, we observe extensive persuasive and problem-solving actions by Active's compliance team, but no use of purchase orders to reward compliance or punish violations. During the sourcing relationship, Active's orders continued no matter whether the factory improved or declined in labor compliance. If anything, by placing large orders just after auditors discovered serious issues, purchasing behavior may have sent mixed messages to the factory and undermined the goals of compliance staff to improve labor conditions. The factory was later terminated for commercial reasons (unrelated to price) just when labor compliance appeared to be improving.

Factory 101

Not every sourcing relationship followed this pattern. Factory 101 is also an apparel factory in the same Asian country as Factory 2, manufacturing jackets, sweats, jerseys, and pants for Active since 2011. It was among the most non-compliant factories in Active's supply chain. An audit in November 2012 revealed 17 unresolved violations, including seven deemed "high risk." Violations included excessive overtime, failure to pay overtime premiums, failure to pay correctly for worker leaves, and basic health and safety issues. Multiple violations had been detected in previous audits but remained unaddressed for over a year. As occurred in Factory 2, auditors also found evidence of attempts to mislead auditors: wage and hours records indicated that employees were not working on Saturdays and Sundays, but the production records showed that they were working. Compliance staff implored the factory to be more transparent in regular communications with management. For other violations, communication records reveal that the factory management claimed it "did not know the legal requirements" and Active's compliance staff took extensive steps to instruct the factory on how to comply, including multiple in-person meetings and engaging with sourcing to develop workplans for remediation.

Figure 2: Factory 101 Compliance and Sourcing Volume



The following year, Active audited Factory 101 and confirmed that many of the violations previously discovered had not been remediated. Auditors also discovered new "unacceptable" violations; the factory forced its employees to "apply for leave via written application form if they did not want to work (overtime) on Saturdays." This practice violated forced overtime rules, and Active staff communicated to the factory that such practices contravened both applicable labor laws and Active's code of conduct. The total number of unmediated violations increased to 21 after this audit, making Factory 101 the second-most noncompliant apparel factory in the supply chain.

Throughout this period, Active's social compliance staff repeatedly attempted to persuade the factory to change its behavior. Records from the corrective action plans reveal frequent actions by Active's staff that required substantial staff time to promote compliance. For

instance, Active informed factory management that paying social insurance was "increasingly important due to the worker strikes and protests due to not receiving full social insurance benefits" and, to stress the negative consequences of violations, sent management articles in the press about recent strikes in similar factories that were triggered by social insurance violations.

While Active took ample low coercion measures to push the factory to comply, we saw no evidence that purchasing was reduced as a penalty for these violations. Purchase orders increased from $468,000 in fall 2012 to $543,000 in spring 2013, and $616,000 in fall 2013.[14] Orders in fall 2013 were placed *after* the audit detecting the forced overtime violations. Again, incentives expressed through purchase orders were, if anything, implicitly rewarding rather than punishing a factory whose compliance was deteriorating.

However, the fall of 2013 was a turning point. As the factory continually failed to remediate violations, purchasing patterns began to change. In spring 2014, Active dramatically reduced orders, placing just $32,000. A new audit in March 2014 showed very little progress, with violations holding steady. Compliance records from Active show factory management resisting Active's demands to change their labor practices. For example, disciplinary practices at Factory 101 included fining workers for errors and failing to record disciplinary actions (which prevented auditors from reviewing these practices and assessing compliance). These practices were first identified as problematic in 2011; they were only partially resolved by the 2014 audit. Factory management refused to maintain and disclose records of disciplinary actions; the manager's email to Active simply stated, "I will not do this." In addition, Factory 101 continued to refuse auditor access to certain records around hours and rest days. Social compliance staff at Active recalled, "We had so many conversations with him…they just weren't picking it up…We've tried as much as we can, there [was] no movement" (B03).

[14] Orders fell between spring and fall 2012, but our study had access to only limited data on audits prior to fall 2012 and therefore cannot assess whether this change was in response to shifts in compliance.

This deadlock ultimately led to a change in purchasing. In fall 2014, Active ordered just $328,000, less than fall orders the previous two years (Figure 2). This was the final season in which Active placed orders at Factory 101. In May 2014, social compliance staff emailed Factory 101 management explaining that they were ending the relationship due to noncompliance (B02). Staff had already started developing alternative suppliers to take Factory 101's products and eventually moved many of its products to a more compliant factory in Latin America.[15]

Active's internal documents indicate that Factory 101 was terminated and formally removed from its supply chain due to "social compliance" rather than business performance considerations. Further evidence suggests that Active did not change factories because it found a cheaper alternative source. Factory 101 had given Active price reductions of 3% in 2013 and 6% in 2014 on products that were later produced by the new factory in Latin America. By contrast, prices on the same products at the new factory either remained constant or increased slightly. The move to a more compliant but costlier factory is congruent with Active's internal records, stating that the termination of Factory 101 was motivated by its persistently poor labor compliance and unwillingness to improve, rather than by price.

In sum, Active took many steps to cajole and instruct the factory on how to comply and, eventually, penalized persistent noncompliance by terminating the factory. However, during the sourcing relationship, orders continued to be placed even as conditions remained poor. Again, the signals sent by purchase orders appeared to undercut the efforts of the compliance team. Factory 101 also illustrates the willingness of supplier factories to challenge and refuse the requests of labor compliance teams; factory management appeared willing to risk losing Active as a customer rather than comply with its requests.

[15] Until this point, the replacement supplier had been reasonably compliant with 4 to 8 open violations. An audit in May 2015 discovered 18 violations, but the factory worked quickly to remediate them. Three months after the audit, only one open violation remained.

How do purchase orders respond to new violations?

In the factories discussed above, the timing and value of purchases appeared insensitive to factory compliance. If anything, purchasing appeared to undermine compliance demands, as large orders were placed just after audits that revealed serious violations. Are the factories above unusual, or is this a pattern across the broader population of business relationships?

If Active used purchase orders to encourage compliance, we expect that factories that reduce labor violations should be rewarded with more orders. Conversely, when labor violations increase, orders should decline. This relationship can be modeled using a standard panel model with factory and time-period fixed effects:

$$Orders_{it} = \alpha Violations_{it} + \beta X_{it} + \gamma_i + \eta_t + \varepsilon_{it}$$

Order value and violations vary across factories (i) and over time (t). Time-varying controls appear in X_{it}, the final two terms are factory (γ_i) and time-period (η_t) fixed effects. Our dependent variable is total value of orders placed in the factory during each season (USD).[16] The factory fixed effects control for time-invariant features of factories, which are especially important due to the heterogeneity in product types across Active's supply chain. The supply chain includes both manufacturers of winter coats (complex and costly) and summer t-shirts (simple and inexpensive). Time-period fixed effects account for trends and shocks that affect all factories similarly, such as changes in input costs that affect prices at all factories or fluctuations in consumer demand over time that affect quantity demanded by Active.

To fit this model, we merge our hand-coded factory compliance dataset with information from all 6,403 purchase orders placed at Active's suppliers over three and a half years: January 2012 to June 2015. For most products, Active places orders by season and selects factories in

[16] This section examines only incentives during the active business relationship. We therefore treat all seasons after the final order placed at each factory as missing, rather than zero. The following section contains an analysis of factory terminations.

the previous season (six- to nine-months before issuing the purchase order). Therefore, we construct a seasonal panel (two observations per calendar year) and lag measures of compliance by one season to allow sufficient time for orders to respond to information from compliance audits. We operationalize labor violations in two ways. First, we measure the average violations observed within each factory during the previous season (factories could be audited at any time within a season). Second, we use a binary indicator of labor violations that takes the value 1 if the factory exhibited greater than the median level of violations across the whole panel and 0 if fewer than that median.

The results of the simple panel model show no evidence of compliance-promoting incentives (Table 3, columns 1 and 2). Instead, we find suggestive evidence of *perverse* incentives. The sign on both average violations and the binary indicator is positive, and both estimates are statistically different from zero. The coefficient on the binary indicator in column (2) shows that increasing violations from the lower half of the distribution to the upper half is associated with $243 thousand *more* orders in the following season (95% C.I. $21 thousand - $465 thousand).

Table 3: Violations and Order Volumes During the Business Relationship

	(1)	(2)	(3)	(4)	(5)	(6)
Lagged average violations	24,252* (12,610)		24,159* (12,738)		21,919** (9,832)	
Lagged top 50% viols. (binary)		242,946** (111,597)		243,526** (112,050)		217,286** (87,623)
Average unit price			37.35 (179.6)	202.3 (140.3)	73.53 (151.2)	196.8 (145.0)
Late delivery ratio			61,361 (50,458)	81,186 (48,930)	62,396 (54,829)	97,485 (65,050)
Audited? (binary)					106,108** (47,033)	112,066** (48,167)
Purchasing manager FE					✓	✓
Factory FE	✓	✓	✓	✓	✓	✓
Season FE	✓	✓	✓	✓	✓	✓
R-squared	0.082	0.069	0.083	0.071	0.286	0.278
Factories	89	89	89	89	89	89
Observations	435	435	435	435	435	435

Notes. Panel fixed-effects models of total order volume (USD) in Active Inc sourcing database. Violations are a time-varying measure within each factory, averaged within each season. Top 50% violations is a binary indicator of whether factory violations were greater than (1) or less than (0) the entire panel median during each season. Both explanatory variables lagged by one season, as orders are assigned to factories roughly six months before purchase orders are issued. Robust standard errors clustered by factory in parentheses. *** p<0.01, ** p<0.05, * p<0.1

One natural question is whether perverse incentives arise because factories that decline in compliance are able to improve their prices or product delivery performance. We explore this possibility by adding controls for unit prices and late deliveries. Average unit prices are obtained by dividing seasonal order volume by total units. On-time delivery performance is measured by the generation of backorders—backorders occur when factories inform Active they will be unable to fulfill the original purchase order on time. The ratio of backorders to purchase orders therefore offers a measure of late deliveries, and interviews with logistics staff confirmed that Active uses this variable when it evaluates factories. Because these variables are only observed when some orders are placed, we fill missing values with the most recently observed unit price

or delivery performance (i.e. startpoint imputation). Results reported in columns (3) and (4) suggest that the compliance-orders relationship is not explained by correlated changes in unit prices. Introducing these controls has effectively no impact on the estimated effects of labor violations on product orders.

Columns (5) and (6) introduce additional time-varying controls, including an indicator of whether the factory was audited during the season and fixed effects for the manager in Active who was responsible for the largest spend at each factory in each season. If orders tended to be issued shortly after factory audits, that may explain why violations correlate with order volumes. We also expect different managers may have different order placement styles that could explain the relationship of orders to violations. Audits are indeed a significant predictor of purchase orders, and the effects of violations attenuate slightly, but the negative association between compliance and purchasing remains.

The Appendix reports additional robustness checks, replicating these results with units ordered, using month-level panels, and conducting analysis on a subset of the sample that includes only apparel factories. Although not all models show statistically significant perverse incentives, they are generally consistent with the results in Table 3. They never suggest that reducing labor violations was associated with increased orders.

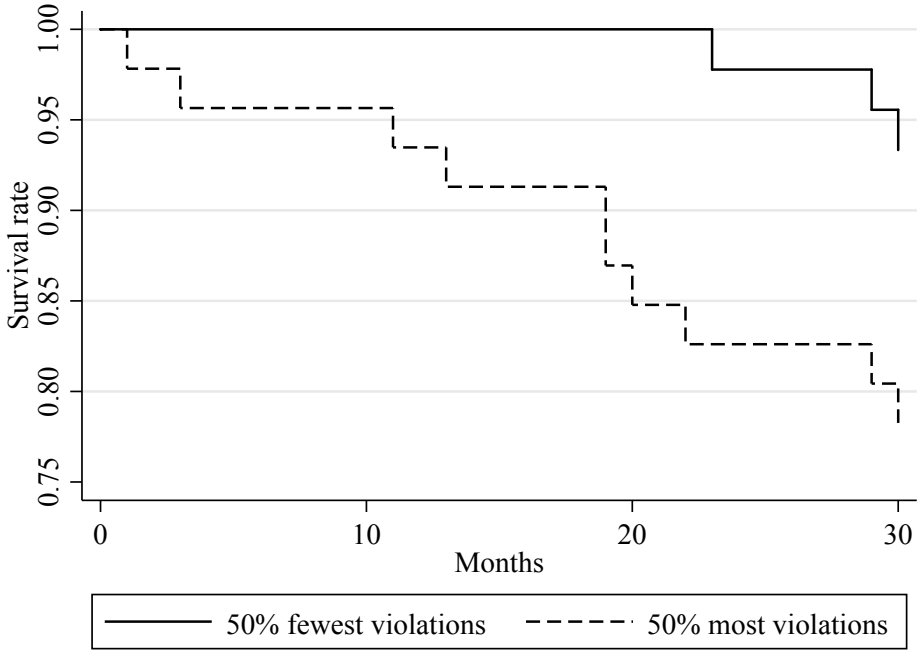
Which factories are terminated?

The analyses above focus on the "middle" of the enforcement pyramid: the possibility of rewarding improvement with increased orders. What about terminations—the strongest regulatory response Active can create? According to Active's internal records, one in five terminated factories were dropped over social compliance concerns, similar to Factory 101

above. Yet this does not tell us whether labor violations were more generally associated with termination of the business relationship.

To measure terminations using the purchase order database, we treat cases in which factories received no orders placed over two consecutive seasons (12 months) as a termination. Two seasons was chosen because some factories specialize in a certain season, and we confirmed this method with Active staff. Using these criteria, 13 factories (out of a total of 91) were terminated in the 30-month purchase order panel, providing a small number of events that we can explain with our data. We first examine differences across the binary measure of low- vs. high-violation factories discussed in the previous section, cutting the sample into two groups around the median level of average violations.

Figure 3. Factory terminations among low- and high-violation factories



Notes. Kaplan-Meier survival plot dividing factories into two equally sized groups based on average violations over the study period. Analysis begins at either the start of the panel or when the factory entered the supply chain, whichever comes later. In total, ten factories are terminated from the high-violation group, compared to three among the low violation group. Chi-squared test for difference in survival rates yields p-value of 0.03. Regression estimates corresponding to this analysis appear in Table 5.

We find that factories with lower-than-median average violations were more likely to remain in Active's supply chain, with over 90% lasting the entirety of the panel. By contrast, high-violation factories (violations above the median) were terminated more quickly. After 20 months, only 85% of the high-violation factories remain in the supply chain. A Kaplan-Meier survival plot appears in Figure 3. Table 4 presents several regression estimates using both the continuous measure of average violations and the binary high-low measure shown in Figure 3. We use Cox proportional hazard models that estimate the duration of time elapsed to factory terminations. In addition, we report OLS and logit models of a cross-section of factories, in which our dependent variable takes a value of 1 if the factory was dropped, and 0 if it remained in the supply chain. All models indicate that Active is more likely to terminate factories that exhibit higher levels of violations. Although the results are imprecise, we never find results that suggest that Active is more likely to maintain relationships with factories that have more violations.

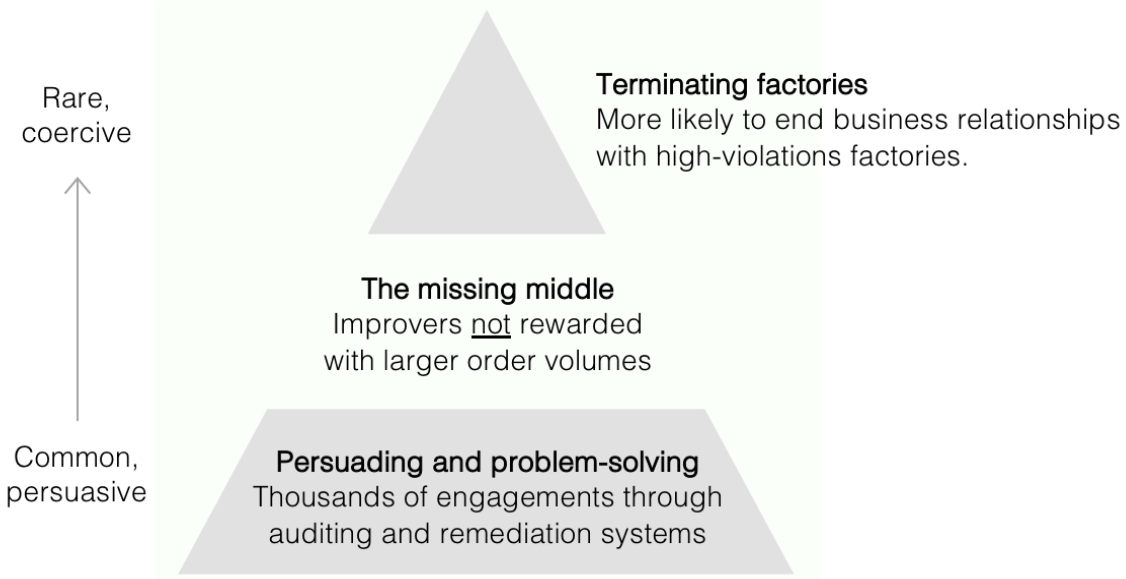
Table 4: Regression estimates of factory terminations and labor violations

Model type	Cox P.H.		OLS		Logit	
	(1)	(2)	(3)	(4)	(5)	(6)
Average violations	1.137***		1.019**		1.131***	
	(0.0476)		(0.00846)		(0.0526)	
High violations binary (top 50%)		3.662**		1.163**		3.889*
		(2.354)		(0.0838)		(2.723)
Constant			1.023	1.069*	0.0658***	0.0714***
			(0.0567)	(0.0402)	(0.0360)	(0.0429)
Observations	2,589	2,589	91	91	91	91
R-squared			0.088	0.046	0.0884	0.0593

Notes. Models of factory termination conditional on labor violations. Explanatory variables are a continuous measure of average violations within the panel and a binary indicator of high-violation factories (i.e. in the top 50% of average violations). Columns (1) and (2) report hazard ratios from Cox proportional hazard models, estimated at the factory-month level with robust standard errors clustered by factory. Columns (3) and (4) report OLS estimates at the factory level. The outcome is a binary indicator of whether the factory is terminated during the study. Columns (5) and (6) show logit models of the same binary outcome. There are thirteen factory terminations in the period we observe. *** p<0.01, ** p<0.05, * p<0.1

These results must be taken with caution and cannot be interpreted causally. Attributes of high-violation factories that correlate with violations may increase the risk of termination, such as poor performance in quality or on-time delivery (recall that Factory 2 had both spikes in violations and business performance issues). Nonetheless, factories with higher violations are also at higher risk of termination. This contradicts the widely-held view that labor violations provide factories with a competitive advantage.

Figure 5: Private Regulatory Enforcement at Active Inc.



Notes. Findings summarized in an "enforcement pyramid" (Ayres and Braithwaite 1992: 35)

Why the Missing Middle?

We analyzed whether Active engaged in three types of regulatory activities—persuasion and problem-solving, rewarding improvers with more order volume (or punishing violations by reducing orders), and strong penalties in the form of factory terminations. In both case studies and quantitative analysis, we found evidence for low- and high-coercion measures to encourage compliance, but no mid-level incentives. This result is puzzling in light of standard explanations. Conventional accounts emphasizing the costs of compliance predict that highly-compliant factories will be unable to meet demands around price and delivery, making them less attractive than those with more violations (Vogel 2005). Yet both our evidence and recent empirical research[17] is inconsistent with the observable implications of this argument. First, controlling for unit prices and on-time delivery has no effect on the estimated relationship

[17] Distelhorst and Locke (2018) find, studying a different sample of export manufacturers, that noncompliant factories also show inferior performance in quality and on-time delivery metrics (see Table 1).

between compliance and order volume. Nor are these variables predictors of increased orders on their own; Active did not increase orders in factories that decreased their prices. This result suggests that the estimated relationship between compliance and purchasing is not explained by within-factory fluctuations in price. Second, if labor compliance put factories at a competitive disadvantage and Active was unwilling to bear those costs, we would expect Active to terminate compliant suppliers more than noncompliant suppliers. Yet we find the opposite pattern.

To better understand why we observe this "missing middle" in private regulatory efforts, we turn to interviews with Active Inc management to gain firsthand accounts of organizational processes in the period 2012 to 2015.[18] These interviews revealed a series of barriers to flexibly adjusting order volumes in response to compliance information. Placing an order involved coordination among Active staff members across multiple departments. Each team signed off on different attributes of a purchase order, such as product specifications, projected sales (quantities), and the availability and price of inputs. When describing this process, Active managers stated, "[It] takes a village to create a purchase order" (B02). This coordination took place under time pressure to issue orders early enough to allow factories time to source inputs needed for manufacturing. In the final stages of placing an order, "everything is happening pretty quickly;" changing orders along the way to adapt to new information about compliance required re-engaging in this complex process (B04).

Purchasing decisions balanced the benefits from economies of scale with the risks if one factory failed to deliver. In the words of one manager, "you want to give the factories steady growth, and that is because you want them to reserve capacity for you, but you don't want to be overexposed" (B04). As a smaller customer, Active also needed to meet the minimum order quantity specified by each factory, which made commercial relationships more rigid. Factories

[18] In these interviews, we asked merchants to reflect on sourcing practices during the period we study. More recently, Active has introduced new workflows that centralize sourcing decisions. There was not sufficient data to evaluate the effect of organizational changes on the relationship between sourcing and compliance.

specify minimum order quantities because producing new styles often leads to periods of reduced productivity and higher defect rates. As a mid-sized buyer, these order volume requirements were, according to Active management, "the biggest challenge" in negotiating with factories (B02). For this reason, most of Active's styles were produced in just a single factory. To manage risk, Active kept alternative factories in its supply chain that have the capability to produce a product in case the focal factory cannot deliver, but there were substantial costs to shifting products from one factory to another. Most importantly, it could take months of sampling before a new style could be mass manufactured.

In light of the complex steps in placing orders and the difficulties of reallocating purchases across factories in response to new information, several of Active's purchasing staff simplified compliance into a "go / no-go" binary: either orders could be placed in a factory or they could not. When asked about compliance, one merchant stated, "it is kind of black and white, either they pass an audit, or there is a no-go" (B01). Another manager explained, "my understanding is that the factories all have…to comply with a big set of rules…they are committed to compliance, they treat their workers well, they maybe belong to the [Fair Labor Association]" (B04). Some managers did not believe that factories with serious compliance issues would be in their supply chain because, "we have a solid [social compliance] team" that allows sourcing staff to "focus on the product" as opposed to considering compliance issues on a day to day basis (B05). In short, many staff involved in the purchase order process did not view monitoring labor compliance as central to their roles, much less consider setting the terms of purchase orders as opportunities to create regulatory incentives. Compounding the problem, key compliance managers were not involved in meetings in which orders were allocated to factories to begin the product development calendar (B03).

Although the "go / no-go" view of compliance limited use of order volumes to reward labor compliance, this view supported the use of factory terminations to enforce standards. When compliance staff deemed a factory unable to meet standards despite multiple seasons of efforts, Active staff started developing a plan for moving its products to new factories. Although merchants did not seek compliance staff input when setting order volumes, they did pay attention when compliance staff raised serious issues. As one merchant recounted, "It is really when [the compliance] team gets a red flag…it gets elevated…and we might pull our business out…it is a risk to retail and brands to not be partnered with good factories. We could end up like [another brand] did and lose multiple generations" of customers (B04). This manager went on to state: "We had an instance with a factory, when something kind of happened that I wasn't comfortable with, it was a bit of a red line to me, if it wasn't solved, we would pull out of it" (B04).

Conclusion

Research on private regulation of labor standards in global supply chains has struggled to empirically examine the full range of regulatory actions available to buyers. We offer a conceptualization of the regulatory activities of buyers, ranging from frequent low-coercion forms of persuasion, to reallocation of orders, to cutting factories out of supply chains. By doing so, we add nuance to what has been a somewhat unidimensional debate on regulatory activities, especially those related to sourcing, of firms. For instance, Fung, O'Rourke and Sabel envision an effective private regulatory regime in which, "knowing that improved working conditions would be reported to consumers by credible monitors, manufacturers would have an incentive to make improvements" (2001: 81). Similarly, Greenhill et. al. (2009) theorize that when there is activist pressure, "subcontractors in exporting nations will face pressure from actors higher up in their supply chain to demonstrate their compliance with national labor laws" (p. 675). David

Vogel (2005) voices the more widespread view that, "…higher labor standards will increase production costs, and many suppliers believe that addressing [social responsibility] issues makes them less competitive" (p. 95). Both sides collapse the regulatory activities of firms into a single behavior; the only question is whether the competing forces of activist pressure or costs of compliance will prevail. Both sides also conceive of lead firms as having ample flexibility in their supply chains that they can use to reward compliance or quickly reallocate orders to reduce costs.

The study of Active Inc., which we believe to be the first to analyze this broader range of regulatory activities, offers two useful insights to theoretical debates over private regulation. First, private regulatory activities within a single firm are not necessarily consistent with one another. Although the compliance team encouraged and persuaded factories to comply on a daily basis, those same factories saw increased orders when their violations increased. Yet high-violation factories are also more likely to be terminated, as reflected in the history of Factory 101, our analysis of the supply base, and interviews with managers. These internal tensions only become visible by disaggregating private regulatory activities and analyzing them together.

Second, this study reveals challenges to promoting labor compliance that go beyond a presumed tradeoff between compliant factories and competitive prices. Terminating poor performers is costly but relatively simple to organize; it requires identifying a substitute factory and introducing new products to that location. In contrast, flexibly adjusting order volumes in response to new violations is more complex. It requires ongoing coordination between the compliance and purchasing teams, and even so may run the risk of delaying the arrival of products to market.

The intensity of these challenges may vary across different supply chain structures (Mosley 2017). In the case of this mid-sized retailer, one substantial barrier to using purchasing

to promote compliance was the structure of the supply chain, which predominantly sole-sourced products in long-term supplier arrangements. This structure has its own logic to support labor compliance; most observers believe that stable, trusting supplier relationships make persuasion and exhortation more effective. However, it also meant that orders could not easily be reallocated to improving factories.

This observation suggests that flexibility in supply chains may be a double-edged sword. Flexibility is often associated with buyers maximizing market power and increasing downward pressure on labor, but it also might be necessary to providing mid-range incentives for compliance. Achieving such flexibility appears challenging for retailers and brands seeking to maintain consistency in products and develop long-term relationships with suppliers. They have little room to move orders out of factories that decline marginally in labor practices, and, when products are sole-sourced, no other factories are immediately available to produce a style if it were to be withdrawn. It is also unclear whether the positive impact of using order-based rewards and penalties would outweigh the possible negative impact of less secure and presumably less trusting buyer-supplier relationships.

Ultimately, inconsistency in buyer regulatory activities—what we refer to as "the missing middle"—likely contributes to the widely-recognized limits of private regulation in enforcing global labor standards. If factories are rewarded with access to lucrative supply chain relationships based upon their adherence to minimal standards, but not rewarded for incremental improvements in compliance, we should not be surprised that private regulation quickly reaches a ceiling on what it can deliver. Understanding how to change these practices will require additional research on sourcing behavior and the incentives it creates for employers in the developing world.

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Appendix

Appendix Table A1: Logged order volumes and labor violations during the business relationship

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Average violations	0.0266		0.0252		0.0318							
	(0.0314)		(0.0323)		(0.0196)							
Top 50% viols. (binary)		0.798**		0.803**		0.651***						
		(0.384)		(0.387)		(0.226)						
Lagged average violations							0.0545		0.0512		0.0459***	
							(0.0522)		(0.0539)		(0.0167)	
Lagged top 50% viols. (binary)								0.948**		0.947**		0.571***
								(0.403)		(0.405)		(0.170)
Average unit price			.00381***	.00382***	.00572***	0.00577***			.00288***	.00318***	.00524***	.00549***
			(0.00102)	(0.00103)	(0.00188)	(0.00201)			(0.000811)	(0.000746)	(0.00164)	(0.00183)
Late delivery ratio			0.426	0.483	0.239	0.313			0.341	0.401	0.159	0.244
			(0.417)	(0.406)	(0.299)	(0.288)			(0.373)	(0.352)	(0.241)	(0.226)
Audited? (binary)					0.107	0.0912					0.165	0.178
					(0.111)	(0.116)					(0.119)	(0.119)
Purch. manager FE					✓	✓					✓	✓
Factory FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Season FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
R-squared	0.061	0.071	0.066	0.076	0.822	0.826	0.060	0.068	0.063	0.072	0.832	0.833
Factories	91	91	91	91	91	91	89	89	89	89	89	89
Observations	496	496	496	496	496	496	435	435	435	435	435	435

Notes. Panel fixed-effects models of the natural log of total order volume (USD) in Active Inc sourcing database. Violations are a time-varying measure within each factory, averaged within each season. Top 50% violations is a binary indicator of whether factory violations were greater than (1) or less than (0) the entire panel median during each season. Lagged indicators are lagged by one season. Robust standard errors clustered by factory in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table A2: Order quantities and labor violations during the business relationship

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Average violations	453.4		452.2		237.0							
	(319.9)		(321.3)		(274.2)							
Top 50% viols. (binary)		8,263**		8,356**		6,316**						
		(3,580)		(3,587)		(2,990)						
Lagged average violations							955.8**		954.4**		797.5**	
							(424.8)		(429.7)		(326.0)	
Lagged top 50% viols. (binary)								10,468**		10,535**		9,285***
								(4,242)		(4,242)		(3,516)
Average unit price			1.995	2.827	2.844	3.194			-3.162	3.256	0.115	4.491
			(6.244)	(4.501)	(5.705)	(4.973)			(9.129)	(4.673)	(7.283)	(4.747)
Late delivery ratio			4,169	4,771	5,421	6,070			5,456	6,278	6,588	8,000
			(3,367)	(3,505)	(3,904)	(4,065)			(4,088)	(4,185)	(4,906)	(5,288)
Audited? (binary)					5,147**	4,898**					3,647*	3,876*
					(2,368)	(2,328)					(2,149)	(2,159)
Purch. manager FE					✓	✓					✓	✓
Factory FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Season FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
R-squared	0.039	0.053	0.040	0.056	0.178	0.188	0.061	0.058	0.065	0.062	0.220	0.222
Factories	91	91	91	91	91	91	89	89	89	89	89	89
Observations	496	496	496	496	496	496	435	435	435	435	435	435

Notes. Panel fixed-effects models of total order quantity (units) in Active Inc sourcing database. Violations are a time-varying measure within each factory, averaged within each season. Top 50% violations is a binary indicator of whether factory violations were greater than (1) or less than (0) the entire panel median during each season. Lagged indicators are lagged by one season. Robust standard errors clustered by factory in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table A3: Order volumes and labor violations during the business relationship (apparel factories only)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Average violations	52,909		52,578		37,593							
	(34,003)		(34,296)		(25,572)							
Top 50% viols. (binary)		619,483**		610,750**		494,074***						
		(244,103)		(245,715)		(172,177)						
Lagged average violations							94,471**		97,057**		85,500**	
							(43,865)		(44,831)		(36,182)	
Lagged top 50% viols. (binary)								676,833*		677,199*		585,666**
								(335,829)		(335,039)		(239,624)
Average unit price			1,858	-76.35	887.4	-243.9			9,576	5,568	10,245	7,991
			(7,103)	(7,657)	(11,782)	(11,646)			(8,393)	(6,499)	(13,911)	(13,930)
Late delivery ratio			471,601	391,547	475,390	386,311			1.087e+06	917,342	921,523	930,673
			(589,352)	(502,725)	(667,478)	(599,137)			(759,658)	(586,491)	(823,287)	(735,481)
Audited? (binary)					84,506	73,671					25,638	55,911
					(95,044)	(107,542)					(77,567)	(100,958)
Purch. manager FE					✓	✓					✓	✓
Factory FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Season FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
R-squared	0.156	0.197	0.159	0.199	0.364	0.397	0.284	0.187	0.302	0.197	0.494	0.432
Factories	27	27	27	27	27	27	27	27	27	27	27	27
Observations	145	145	145	145	145	145	126	126	126	126	126	126

Notes. Panel fixed-effects models of total order volume (USD) for apparel factories in Active Inc sourcing database. Violations are a time-varying measure within each factory, averaged within each season. Top 50% violations is a binary indicator of whether factory violations were greater than (1) or less than (0) the entire panel median during each season. Lagged indicators are lagged by one season. Robust standard errors clustered by factory in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table A4: Order volumes and labor violations during the business relationship (month-level panel)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Average violations	2,125*		2,070*		2,163*							
	(1,204)		(1,204)		(1,115)							
Top 50% viols. (binary)		36,987**		36,825**		34,593***						
		(14,324)		(14,277)		(12,604)						
Lagged average violations							1,529		1,483		1,822	
							(1,276)		(1,282)		(1,173)	
Lagged top 50% viols. (binary)								28,513*		28,136*		31,011**
								(15,143)		(15,151)		(13,212)
Average unit price			79.59	86.11	85.23	91.42			79.52	82.04	86.47	88.76
			(58.73)	(60.92)	(59.25)	(61.04)			(57.87)	(58.96)	(58.41)	(59.98)
Late delivery ratio			18,298*	18,446*	16,638*	17,188*			16,585	16,212	14,342	14,324
			(10,942)	(10,735)	(9,623)	(9,493)			(10,466)	(10,338)	(9,254)	(9,191)
Audited? (binary)					16,847	14,439					22,440	24,471
					(26,360)	(25,527)					(26,057)	(26,201)
Purch. manager FE					✓	✓					✓	✓
Factory FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Month FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
R-squared	2,755	2,755	2,755	2,755	2,755	2,755	2,725	2,725	2,725	2,725	2,725	2,725
Factories	0.074	0.076	0.075	0.077	0.251	0.252	0.073	0.074	0.074	0.075	0.252	0.253
Observations	91	91	91	91	91	91	90	90	90	90	90	90

Notes. Panel fixed-effects models of total order volume (USD) in Active Inc sourcing database. Violations are a time-varying measure within each factory, averaged within each month. Top 50% violations is a binary indicator of whether factory violations were greater than (1) or less than (0) the entire panel median during each season. Lagged indicators are lagged by one season. Robust standard errors clustered by factory in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Interviews

To supplement the documentary and quantitative evidence, we conducted interviews with Active staff. Active is a small organization, allowing us to interview all of the compliance staff and many sourcing managers. Our interviews included people from all departments involved in sourcing (merchants, logistics, quality, and production), providing a view of the full process of allocating orders as well as an understanding of the compliance system. The list below provides the details of the interviewees cited in the text.

B01, Merchant, 12/13/2017 & 1/31/18, Phone / Active HQ, 120 minutes
B02, Social Compliance, 12/18/2017 & 1/30/18, Phone / Active HQ, 300 minutes
B03, Social Compliance, 12/18/2017 & 1/30/18, Phone / Active HQ, 300 minutes
B04, Merchant, 12/19/2017 & 1/31/18, Phone / Active HQ, 90 minutes
B05, Merchant, 12/19/2017, Phone, 60 minutes
B06, Logistics, 12/21/2017 & 1/31/18, Phone / Active HQ, 60 minutes
B07, Product Integrity, 01/30/2018, Active Headquarters, 90 minutes
B08, Sourcing, 01/30/2018, Active Headquarters, 60 minutes
B09, Sourcing / Costing , 01/30/2018, Active Headquarters, 60 minutes
B10, Production Team, 01/30/2018, Active Headquarters, 60 minutes
B11, Production Team, 01/30/2018, Active Headquarters, 60 minutes
B12, Production Team, 01/30/2018, Active Headquarters, 60 minutes
B13, Social Compliance, 01/31/2018, Active Headquarters, 60 minutes

Active and Other Brands Engaged in Private Regulation

The graph below shows the distribution of supply chain sizes, in number of factories, of Fair Labor Association accredited buyers. The median number of factories is 51. Active is slightly higher than this, with approximately 70.

Appendix Figure A1: Supply Chain Size Among Fair Labor Association Buyers