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Abstract
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Keywords
labor standards, health and safety, monitoring, Nike

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DOES MONITORING IMPROVE LABOR STANDARDS? LESSONS FROM NIKE

RICHARD M. LOCKE, FEI QIN, and ALBERTO BRAUSE*

Using a unique data set based on factory audits of working conditions in over 800 of Nike's suppliers across 51 countries over the years 1998–2005, the authors explore whether monitoring for compliance with corporate codes of conduct—currently the principal way both global corporations and labor rights non-governmental organizations (NGOs) address poor working conditions in global supply chain factories—achieved remediation, as indicated by improved working conditions and stepped-up enforcement of labor rights. Despite substantial efforts and investments by Nike and its staff to improve working conditions among its suppliers, monitoring alone appears to have produced only limited results. However, when monitoring efforts were combined with other interventions focused on tackling some of the root causes of poor working conditions—in particular, by enabling suppliers to better schedule their work and to improve quality and efficiency—working conditions seem to have improved considerably.

Globalization, with its volatile mix of economic opportunity and social disruption, has provoked a fierce debate over working conditions and labor rights in developing countries. On the one hand, foreign direct investment and the diffusion of global supply chains in an array of different industries—apparel, electronics, footwear, toys, and so on—have provided developing countries much-needed capital, employment, technology, and access to international markets. Seen in this light, globalization is having a catalytic and transformative effect on local economies, allowing poor countries to finally achieve their long sought-after goal of development.[1] On the other hand, global corporations and their local suppliers are depicted as agents of exploitation, taking advantage of developing countries' low

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A data appendix with additional results, and copies of the computer programs used to generate the results presented in the paper, are available from the first author at Sloan School of Management, M. I. T., Room E52-589, 50 Memorial Drive, Cambridge, MA 02139; rlocke@mit.edu.

[1]See Collier and Dollar (2002) and Moran (2002) for more on the positive potential of globalization.

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wages and weak social and environmental regulation to produce low-cost goods at the expense of the local workers' welfare. Numerous reports have described exploitative working conditions in global supply chain plants. Workers are paid only a few dollars and required to work excessive hours, often in poorly lit and unsafe conditions.[2]

In the wake of several well-publicized scandals involving child labor, hazardous working conditions, excessive working hours, and poor wages in factories supplying major global brands, multinational corporations have developed their own "codes of conduct"[3] as well as a variety of "monitoring" mechanisms aimed at enforcing compliance with these codes. In fact, given the limited ability of many developing country governments to enforce their own laws,[4] monitoring for compliance with codes of conduct is currently the principal way both global corporations and labor rights non-governmental organizations (NGOs) address poor working conditions in global supply chain factories. The logic behind this model of "private, voluntary regulation" is that monitoring should provide information useful both to consumer groups seeking to exert market pressure on global brands and to these same brands so that they can pressure their suppliers to improve factory conditions.

Given their widespread use, how effective are these monitoring systems? Aside from providing information about working conditions in various global supply chain factories, does this system actually promote change in working conditions? In other words, does monitoring lead to remediation in terms of improved working conditions and enforced labor rights? If so, under what conditions? Using a unique data set based on factory audits of working conditions in over 800 of Nike's suppliers in 51 countries,[5] in this paper we seek to address those questions.

We build on the results presented in this paper, together with more intensive case study data collected as part of this project (Locke and Romis 2007), to suggest a reframing of the debate and the approach to monitoring and improving labor standards in global supply chains. We suggest that what is needed is a more systemic approach, one combining external (countervailing) pressure (be it from the state, or unions, or labor-rights NGOs) with comprehensive, transparent monitoring systems and a variety of "management systems" interventions aimed at eliminating the root causes of poor working conditions.

We first present a highly synthetic review of the major debates about monitoring, and then provide background on the athletic footwear industry in general and Nike, Inc. in particular. The core empirical analysis following those preliminaries addresses three questions. First, how bad (or good) are working conditions among Nike's various suppliers? Second, what determines variation in working conditions among these suppliers? (In other words, what accounts for the greatly differing working conditions across factories producing more or less the same products for the same brand?) And third, are working conditions improving over time in these factories? We conclude by pondering the broader implications of our findings for the more general debates over labor standards in a global economy.

Monitoring: A Review of the Debates

Corporate codes of conduct and various efforts aimed at monitoring compliance with these codes have been around for decades. Whereas monitoring efforts began by emphasizing corporate or supplier compliance with national regulations and laws, over time they

[2]See, for example, Verité (2004), Pruett (2005), and Connor and Dent (2006).

[3]For a good description of this movement, see Jenkins (2001), Schrage (2004), and Mamic (2004).

[4]For more on this, see Baccaro (2001) and Elliot and Freeman (2003).

[5]This paper is part of a larger project organized by Richard Locke on globalization and labor standards. In addition to the data analyses presented in this paper, the research entailed field research in China, Turkey, Mexico, Europe, and the United States as well as over 200 interviews with factory managers, workers, NGO representatives, union leaders, and Nike managers (both in the United States and abroad). We thank the other project participants—Jonathan Rose, Jennifer Andrews, Dinsha Mistree, Rushan Jiang, Monica Romis, and Alonso Garza—for their helpful comments throughout the project.

have increasingly focused on compliance with private, voluntary codes of conduct. Moreover, if at first corporate codes were centered on redressing power imbalances between multinational corporations and developing countries, or on promoting "transparency" (in other words, preventing bribery), increasingly they have come to focus on the impact of globalization on labor and the environment.[6] Much of the recent literature on monitoring and other forms of "private voluntary regulation" focuses on either the particularities surrounding the actual process of monitoring (that is, how these inspections are conducted, by whom, for what purposes) or on the relationship between these regulatory efforts and other forms of regulation, especially state regulation.

Critics of voluntary monitoring regimes argue that they "crowd out" more thorough government and union interventions and are designed *not* to protect labor rights or improve working conditions but instead to limit the legal liability of global brands and prevent damage to their reputation (Esbenshade 2004). Far from protecting workers, these monitoring schemes eviscerate state regulation and undermine union power without replacing them with a viable alternative regime. Others, however, argue that private monitoring 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 (Nadvi and Wältring 2004). According to this second group, *under certain conditions,* the monitoring 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 (Bartley 2005; Fung et al. 2001; O'Rourke 2003; Rodriguez-Garavito 2005).

A second debate over monitoring focuses on whether those conducting the audits can be trusted to make accurate and honest assessments of factory conditions and transparently report their findings. Critics identify a number of important conflicts of interest that exist among the key actors involved in the monitoring process (National Research Council 2004; Esbenshade 2004; Pruett 2005; Rodriguez-Garavito 2005). Given that brands and their suppliers may have an interest in hiding labor violations rather than reporting them, how trustworthy are these internal audits? Might not the moral hazard for these interested parties be too great? Nor does auditing by "third party" organizations escape observers' skeptical regard. If the third parties are NGOs, how competent are they in assessing certain technical issues (for example, air quality)? If, instead, private monitoring firms are the third-party auditors, how forthcoming will they be, given that they probably hope to please their clients (the brands and their suppliers, who pay for these services) and generate future business? In response to these criticisms, various procedures and policies were established to promote greater transparency and oversight by "independent" organizations. Increasingly, external auditors, ranging from for-profit social auditing companies to local NGOs, are being certified by Multi-Stakeholder Initiatives (MSIs) like the Fair Labor Association and the Fair Wear Foundation. These institutional mechanisms are meant to bolster the creditability of monitors. Still, some observers (for example, the Worker Rights Consortium) argue that monitoring must be completely independent of brands and factories in order to be truly effective.

A third debate concerns the growing number and diversity of codes of conduct and auditing protocols as well as the uneven quality[7] of the audits being performed. The diversity of codes and monitoring schemes being applied to global suppliers is well documented (Brown 2005a, 2005b; Jenkins 2001; O'Rourke 2003). Underlying these different codes and implementation systems are very different principles and goals. Whereas some

[6]For an interesting historical review of corporate codes of conduct and their evolution over time, see Jenkins (2001). Another interesting historical parallel can be found in Seidman (2003).

[7]For a critique of existing auditing practices, see Pruett (2005).

codes emphasize freedom of association and anti-discrimination policies, others instead focus on "living" (as opposed to minimum) wages, "excessive" work hours, and health and safety issues. Some codes are monitored by internal, company staff while others are audited by third-party, external consultants or NGOs.

Less is known, however, about the overall impact of multiple codes of conduct and monitoring strategies on factories and on the workers employed within them. A 2003 World Bank study estimated that over 1,000 corporate codes of conduct existed in that year (Smith and Feldman 2003:2). Many suppliers have to implement multiple codes of conduct, which causes inefficiency and confusion. Some factories complain of "monitoring fatigue," given that they are monitored multiple times a year on behalf of each of the global brands they work for. In addition, suppliers complain of being placed in "compliance limbo" between different and conflicting code requirements. Our interviews in the field revealed that many codes of conduct are accompanied by increasingly detailed guides, specifying, for example, the exact position of fire extinguishers or the ratio of toilets to employees. The result is that the suppliers have to arrange and rearrange things—move fire extinguishers back and forth between locations, for example—as different auditors for different brands perform plant inspections. Similar problems can occur with specifications for bottom-up worker involvement, which can differ from code to code, creating redundant systems.

A related criticism concerns the mixed quality of the audits and level of skill or experience of the auditors. Although some monitors are experienced professionals with training in various production and labor-related functions, many others are recent college graduates whose primary qualification is either speaking a particular foreign language or possessing great passion for labor rights (Esbenshade 2004; Pruett 2005). Monitoring protocols vary tremendously in terms of issues being investigated (wages, work hours, working conditions, child labor, freedom of association, health and safety issues, sexual harassment, and so on), methodology employed to collect information (for example, interviews—with or without workers, on-site or away from the factory—documents, observations), length of time spent conducting the audit, level of skill or experience of the monitors, and methods of reporting the information collected (Jenkins 2001; O'Rourke 2003). Given this marked diversity in inspection protocols and auditors, the room for controversy over whose audit protocol is more thorough or more accurate or even truly independent is enormous.

The ability to collect accurate information about a facility and report it in a transparent manner is only one of many key requirements for upholding and improving labor standards. Because the debates over monitoring are so polarized, revolving around stark choices about what gets monitored, who does it, and how it gets done, the question of whether monitoring is an effective strategy for improving labor standards has not been adequately evaluated.[8] That question is the focus of our paper. But to provide for a better understanding of our findings, especially in light of the above debates, the next section presents some industry- and company-level context.

Context: Nike and the Athletic Footwear Industry

The athletic footwear industry has experienced explosive growth over the past two decades. In 1985, consumers in the United States alone spent $5 billion and purchased 250 million pairs of shoes (Korzeniewicz 1994). In 2004, they spent almost $15 billion and bought over 370 million pairs of shoes (National Sporting Goods Association 2005). Although the industry is highly segmented—by different sports, models, and price—the branded shoe segment is dominated by a few large companies. Nike, Reebok, and Adidas account for almost 60% of the global athletic footwear market (Petrecca and Howard 2005). Since displacing Adidas and Reebok in the 1980s, Nike has become the largest and most important athletic shoe company in the

[8]Noted exceptions include two studies on monitoring practices in the U.S. garment industry. See Esbenshade (2004, Chap. 3) and Weil (2005).

world. Even after the recent merger between Reebok and Adidas, Nike still controls over 36% of the U.S. athletic shoe market and over 33% of the global athletic footwear market (Petrecca and Howard 2005).

Founded as Blue Ribbon Sports (BRS) in 1964 by Phil Knight and Bill Bowerman, each of whom invested $500 for its start-up, the company has evolved from an importer and distributor of Japanese specialty running shoes to the world leader in the design, distribution, and marketing of athletic footwear.

According to company legend, Nike's business model was developed by Knight while he attended Stanford Business School in the early 1960s. Knight realized that while lower-cost, high-quality Japanese producers were beginning to take over the U.S. consumer appliance and electronics markets, most leading footwear companies (for example, Reebok and Converse) were still manufacturing their own shoes in higher-cost countries like the United States. By designing and marketing high-performance athletic shoes in the United States but outsourcing production to lower-cost Japanese producers, Knight believed that Blue Ribbon Sports could undersell its competitors and break into this market. As a result, Blue Ribbon Sports began to import high-tech sports shoes from Onitsuka Tiger of Japan. As sales increased to almost $2 million in the early 1970s, BRS parted ways with Onitsuka. The Nike brand was launched in 1972, and the company officially changed its name to Nike, Inc. in 1978.

Nike developed a strong working relationship with two Japanese shoe manufacturers, Nippon Rubber and Nihon-Koyo, but as costs increased in Japan during the 1970s (due to a combination of a tighter labor market, the impact of the first Oil Crisis on Japan's economy, and a shift in the dollar/yen exchange rate as a result of the so-called "Nixon shock"),[9] Nike began to search for alternative, lower-cost producers. During these same years, Nike opened up its own shoe factories in Maine and New Hampshire, hoping to develop a reliable local source to supply its growing domestic market. At the same time, the company also began to cultivate potential suppliers in Korea, Thailand, China, and Taiwan. By the mid-1980s, as costs continued to increase in both Japan and the United States, and as the Korean government created a number of incentives to develop Korea's footwear industry,[10] Nike closed its U.S. factories and sourced almost all of its production from Asia. By 1982, 86% of Nike's athletic footwear came from Korea and Taiwan.[11]

Over time, as Korea and Taiwan also began to develop, costs began to rise in these countries as well. As a result, Nike began to urge its suppliers to re-locate their operations to other, lower-cost countries. The company worked with its lead suppliers to open up manufacturing plants in Indonesia, China, and Vietnam. By guaranteeing abundant orders and by placing Nike employees at these new factories to help monitor product quality and production processes, Nike was able to help its lead vendors establish an extensive network of footwear factories throughout Southeast Asia.

By 2004, Nike's products were manufactured in more than 800 factories in 51 countries, employing over 600,000 workers. Nike has only 24,291 direct employees, the vast majority working in the United States (Nike 2005:3–4). Over the years, Nike has broadened its product range. Whereas in 1980 it sold 175 different styles[12] of shoes, it offered 772 different styles in its Spring 1990 collection and almost 1,200 different styles in its Spring 2000 collection.[13] Nike has also moved into other sectors (apparel and sports equipment) and expanded its sales beyond the United States into Europe, Latin America, and Asia. In 2004, the company made about

[9]For more on these years, see Murukami (1987).

[10]These and other government incentive programs are nicely described in Amsden (1989).

[11]For more on the evolution of Nike's strategy, see Christensen and Rikert (1984); Rosenzweig (1994); and Strasser and Becklund (1991).

[12]This includes different color combinations of shoes.

[13]These figures come from various Nike catalogues. We thank Jody McFarland for helping us obtain these data.

US$12.2 billion in revenues, of which $6.5 billion came from footwear sales and $3.5 billion from apparel (Nike 2005:2).

Important differences exist among the sectors in which Nike competes. Although it is still primarily known as a footwear company, only 70 of its 830 suppliers are producing shoes. Most of these suppliers are located in Asia. In contrast, Nike apparel products are manufactured in 576 factories distributed throughout the world (Nike 2005:4). These differences are due both to the rules governing international trade in the two industries and to the underlying nature of these industries (footwear factories are usually large, capital-intensive facilities, whereas garment factories are usually smaller, easy-to-establish, and extremely labor-intensive operations). Whereas footwear quotas were eliminated by the mid-late 1980s (leading to a consolidation of the industry), trade in garments was until January 2005 very much shaped by the existence of quotas (the Multi-Fiber Arrangement). Still today, various tariffs and "voluntary" export restrictions between China and both the European Union and the United States have prevented the formation of a truly "free market" in garments.[14]

These industry differences strongly condition the kinds of relationships that Nike can develop with its various suppliers. For example, in footwear, Nike has been able to develop long-term relations with several large Korean and Taiwanese firms. When Nike designers create new footwear designs and styles for upcoming seasons, this information is relayed via satellite to some of these partnering suppliers, who, in turn, develop the prototypes. Once these prototypes are approved, these lead suppliers fax the product specifications to their various plants throughout Southeast Asia, where production can take place almost immediately. This level of trust and coordination facilitates both production and (presumably) compliance activities for Nike. In apparel, given short product cycles and volatile fashion trends, the situation is completely different. Nike works with numerous suppliers, most of whom are also producing apparel in the same factories for other (often competitor) companies. Because of the tendency of different apparel suppliers to specialize in particular products or market segments, together with the rapidity of shifts in consumer preferences or fashion trends, Nike sometimes enters into very short-term contracts with these companies or places very limited orders with them (or both). The result is diminished influence on these suppliers and, in particular, diminished ability to regularly monitor the production processes and working conditions at the suppliers' factories.

The same strategies that permitted Nike to grow at an impressive rate over the past several decades—taking advantage of global sourcing opportunities to produce lower-cost products and investing these savings in innovative designs and marketing campaigns—have also created serious problems for the company in recent years. As early as the 1980s, Nike was being criticized for sourcing its products in factories and countries where low wages, poor working conditions, and human rights problems were rampant. Then, over the course of the 1990s, a series of public relations nightmares—involving underpaid workers in Indonesia, child labor in Cambodia and Pakistan, and poor working conditions in China and Vietnam—combined to tarnish Nike's image. As Phil Knight lamented in a May 1998 speech to the National Press Club, "The Nike product has become synonymous with slave wages, forced overtime, and arbitrary abuse."[15]

At first, Nike managers took a defensive position when confronted with the various labor, environmental, and occupational health problems found at their suppliers' plants. Workers at these factories were not Nike employees, and thus Nike felt no responsibility toward them. By 1992, this hands-off approach changed as Nike formulated its Code of Conduct for its suppliers that required them to observe some basic labor, environmental, and health and safety standards. (See Appendix 1 for the most

[14]See Brown (2005a) for more on these issues.

[15]Detail about these events can be found in Locke (2003).

recent version of Nike's Code of Conduct.) All suppliers—current and potential—are obligated to sign this Code of Conduct and post it within their factories. Since 1998, Nike has increased the minimum age for footwear factory workers to 18 and for all other workers (apparel and equipment) to 16. It has also insisted that all footwear suppliers adopt U.S. Occupational Safety and Health Administration (OSHA) standards for indoor air quality.

To enforce compliance with its code of conduct, Nike has conducted numerous training sessions with its suppliers as well as assembled a team of 90 compliance staff based in 21 countries, to monitor these suppliers.[16] In addition to these compliance specialists, Nike has about 1,000 production specialists working at or with its various global suppliers. All Nike personnel responsible for either production or compliance receive training in Nike's Code of Conduct, Labor Practices, and Cross-Cultural Awareness policy, as well as in its Safety, Health, Attitudes of Management, People Investment and Environment (SHAPE) program.[17]

In addition to the initial, new source approval process that all potential suppliers of Nike must undergo,[18] all factories are subject to three different types of audit: a basic environmental, safety and health (SHAPE) audit, a more in-depth management and working conditions audit (M-Audit), and periodic inspections by the Fair Labor Association (FLA).

The *SHAPE* inspection was first launched in 1997 and is typically performed by Nike's field-based production and sourcing staff. The goal of this audit is to provide a very general picture of the factory's compliance with labor, environment, and safety and health standards. SHAPE inspections take about a day and occur once or twice yearly.

Launched in the summer of 2002, the *M-Audit (management audit)* is the most rigorous of Nike's audits and is seen as the core of its compliance program. The M-Audit provides in-depth assessment of the labor-management practices and working conditions at the factories. A typical M-Audit takes 48 hours to complete and thus is spread out over several days. The M-Audit is always conducted by Nike's in-house compliance specialists and is announced beforehand. Each M-Audit reports a numeric score (0–100) that represents a percentage against a perfect compliance score. A score of 100 means that the factory is in full compliance with Nike's code of conduct. The M-Audit covers more than 80 items, focused on hiring practices, worker treatment, worker-management communications, and compensation. Each item accounts for a specific weighting with respect to the overall score. As a result of this scoring system, factories with different types of problems or mixes of compliance issues can receive similar overall scores.[19]

Independent monitoring by the *Fair Labor Association* is also conducted on a sample (5%) of Nike suppliers every year. The FLA is a multi-stakeholder initiative that brings together companies, universities, and NGOs and supervises independent monitors' unannounced inspections of supplier factories. Nike is a member of the FLA and thus subject to these yearly inspections. All FLA reports, with plants' individual identities masked, are made public on the organization's web site (www.fairlabor.org).

Data and Methods

Nike provided us with data from all three of the above audits, as well as from its Compliance Rating program. Starting in June 2001, Nike began a grading system for all its suppliers. This system also evolved over time so that by 2005, a letter grade (A–D) was assigned to individual factories. The letter grade reflects all the information about a factory collected from the SHAPE inspections,

[16]For more on Nike's current compliance activities, see Nike (2005, Chap. 4).

[17]The evolution of Nike's corporate responsibility practices is nicely described in Zadek (2004).

[18]In 2004, only 57% of factories that underwent this process were approved. See Nike (2005:18) for more on this process.

[19]For more on the M-Audit and its scoring system, see Nike (2005:35–36).

Table 1. Summary Statistics, M-Audit Scores.

Sector	*Mean*	*Standard Deviation*	*Observations*
Apparel	0.66 (.008)	0.15	357
Footwear	0.68 (.02)	0.17	64
Equipment	0.64 (.015)	0.16	109
Total	0.65 (.007)	0.16	575[a]

Notes: Standard errors in parentheses. $F(2,572) = 1.35$; Prob > F = 0.26. Bartlett's test for equal variances: $Chi^2(2) = 3.3183$; Prob > $Chi^2 = 0.190$.

[a]45 additional factories received an M-Audit but we were unable to classify them by industry. Thus, they are included in the total but not in the industry columns.

M-Audits, FLA audits, and factory visits and is assigned by the local compliance manager. (See Appendix 2 for an explanation of the different grades assigned to the factories.) The goal of the compliance rating system is to provide information to (and help shape decisions of) Nike sourcing and production managers. Because of the mixed quality of the SHAPE audits and the limited numbers of the FLA audits, we focus our analyses on data derived from the M-Audits and the Compliance Rating program. In addition, Nike provided us access to its sourcing data base, which allowed us to collect descriptive information (age of facility, total number of employees working at the facility, nationality of the owners of the facilities, and so on) for each factory producing goods for the company.

Does Monitoring Work? A Look at the Data

Using data from the M-Audits and the Compliance Rating program, in this section we address three questions. First, how bad (or good) are working conditions among Nike's suppliers? There is tremendous debate over workplace conditions in global supply chain factories. Using systematic data collected by Nike's compliance staff, what can we learn about the actual conditions in these factories? Second, if the data reveal variation in working conditions among Nike's suppliers, what accounts for this variation? Why do factories producing more or less the same goods for the same brand treat their workers so differently? And third, are working conditions improving over time in these factories? Given Nike's large investments in its various compliance efforts since the late 1990s, how successful at remediation have these monitoring efforts been?

How Good or Bad Are Working Conditions?

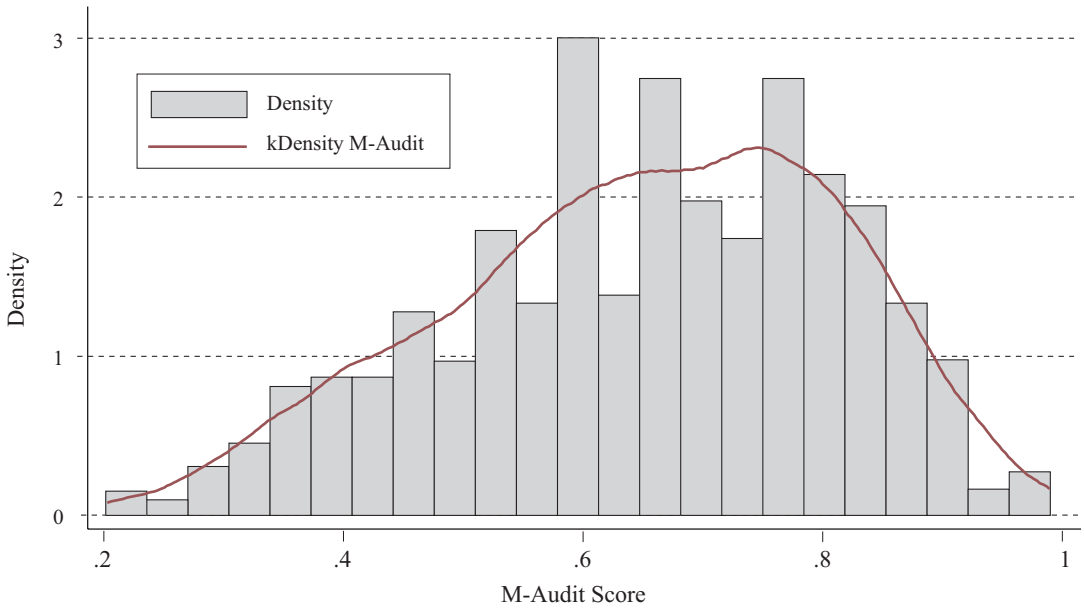
To address this question, we first present some descriptive data on Nike's supply base, derived from the M-Audit data base. As described above, each M-Audit reports a numeric score (0–100) that represents a percentage against a perfect compliance score. A score of 100 means that the individual factory is in full compliance with Nike's code of conduct. Table 1 presents the mean scores and standard deviations for all factories (575) that underwent M-Audits in Nike's three major lines of business (footwear, apparel, and equipment). Because this program was launched only in the summer of 2002 and because it is very time-consuming, not all Nike suppliers have undergone an M-Audit. On average, the data presented below indicate that the performance of Nike's suppliers, while not perfect (a score of 100), has been somewhat above average. The mean of their performance is at 65%, with a standard deviation of 16%.

However, as shown in Figure 1, there is considerable variation in performance on the M-Audit across Nike's supply base. Factories' scores range from 20% to a near perfect (90%) score.

Figure 2 reveals that this pattern of variation cuts across the major product lines of Nike. In other words, regardless of what the factory is producing, be it garments or footwear or even some types of sports equipment, there appears to be a "normal" distribution of M-Audit scores.

However, when analyzing these data along geographic lines, to see how factory performance on the M-Audit may be shaped by the region in which the factories are located, we

Figure 1. The Distribution of M-Audit Score.



find more pronounced variation. Factories in the Americas and the EMEA (Europe–Middle East–Africa) region almost always perform above 50% on the M-Audit and often closer to 100%. However, in the North Asian (which includes China and Vietnam) and South Asian (which includes Indonesia and India) regions, the M-Audit scores are much more

Figure 2. First M-Audit Score by Product Type.

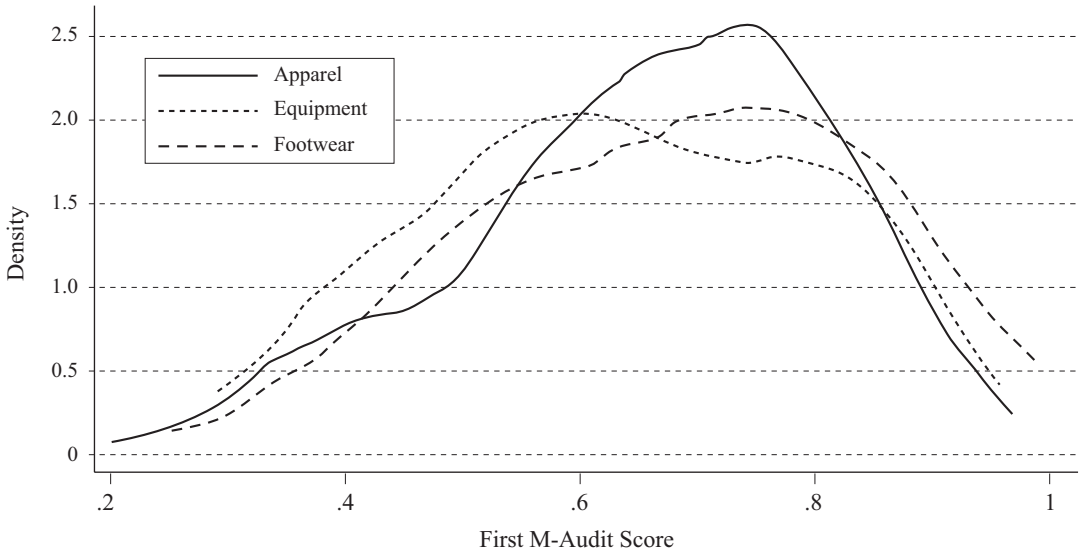


Table 2. Summary Statistics for First M-Audit Score, by Region.

Region	*Mean*	*Standard Deviation*	*Observations*
Americas	0.77 (0.009)	0.10	134
N. Asia	0.61 (0.01)	0.14	198
S. Asia	0.58 (0.013)	0.17	181
EMEA	0.71 (0.015)	0.12	62
Total	0.65 (0.0067)	0.16	575

Notes: Standard errors are in parentheses. F(3,570) = 56.307; Prob > F = 0.0000. Bartlett's test for equal variances: $Chi^2(3) = 38.01$; Prob > $Chi^2 = 0.000$.

dispersed.[20] Table 2 and Figure 3 illustrate this regional variation.

Thus we observe that although Nike's suppliers appear to be performing above average in terms of their M-Audit scores (65%), which suggests that working conditions in these factories are not as terrible as one might fear, there nonetheless exists tremendous variation in M-Audit scores (hence working conditions) across factories in the world. Some factories appear to be almost in complete compliance with Nike's code of conduct, while others suffer from endemic problems with poor wages, excessive work hours, harassment, and so on. Even within regions—within individual countries, in fact—working conditions, as captured by the M-Audit scores, vary tremendously. How do we explain this variation? In other words, why are factories that are making more or less the same products for the same brand treating their workers so differently?

Explaining the Variation in M-Audit Scores

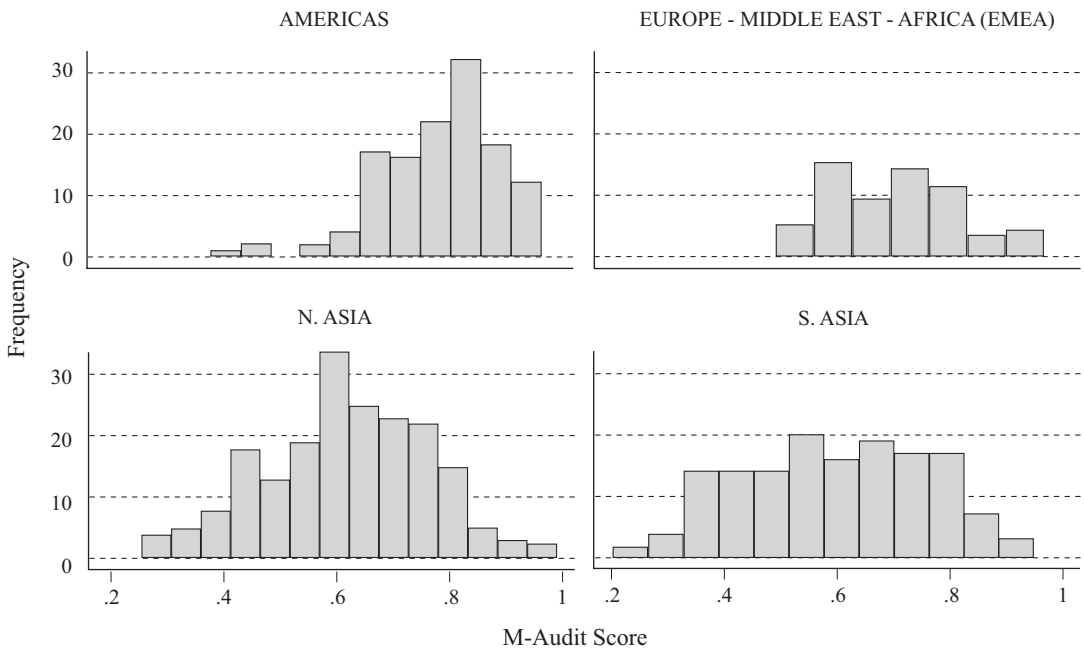
To explain variation in working conditions, as indicated by the M-Audit scores, we developed a two-step model. To isolate actual workplace conditions (as measured by the compliance score) from the potential impact of the monitoring process, we examine the variation of the *initial* M-Audit[21] scores across factories, using an OLS model. In this model, we consider two principal groups of independent variables: factory characteristics, and the supplier factory's relationship with Nike.

Factory characteristics. The literature on labor monitoring suggests that a variety of factors—ownership, size of plant, type/complexity/price of the product being manufactured—may all affect labor conditions in the factories. Some have speculated that factories owned and managed by foreigners treat their workers less well (for a variety of linguistic and cultural reasons) than do factories whose owners and managers share the workers' nationality. Other observers have claimed that larger, more bureaucratic, "modern" factories, being better able than smaller, less formally managed plants to introduce modern management and personnel systems, are in a better position to treat their workers well (Moran 2002:16). Finally, much has been written about the importance of skill and tacit knowledge in the production of differentiated, high-value-added products. From this we speculate that perhaps factories producing more complex (and expensive) products, which require more skilled labor, will treat their workers as valuable assets (Kochan et al. 1986; Piore and Sable 1984). We investigate whether factory ownership (foreign-owned versus domestic-owned), factory size, and product type (footwear, apparel, or equipment) may all affect compliance.

[20]We examine the Americas, the EMEA, North Asia, and South Asia because these are the four macro-regions among which Nike divides its operations.

[21]We analyze initial scores rather than panel data here so that we can isolate actual workplace conditions (as indicated by compliance score) from the potential impact of the monitoring process. A factory's second M-Audit score may be influenced by its having been audited once already. It would thus be difficult to include the second M-Audit score in the study of the cross-sectional variation of the actual workplace conditions without explicitly modeling the impact of the monitoring process on the second M-Audit outcome.

Figure 3. First M-Audit Score by Region.



Relationship with Nike. The second major dimension we investigate is the relationship between the supplier factory and Nike. Frenkel and Scott (2002) have argued that brands develop two distinct types of compliance relationships with their suppliers: a hands-on, cooperative relationship with some suppliers, and an arms-length, more distrustful "compliance" relationship with others. These differences, according to Frenkel and Scott, can shape not just the style but also the substance of compliance programs within the factories. To evaluate whether such a pattern exists, we investigate both the *length of time* Nike has been contracting with the supplier (on the assumption that the longer the business relationship, the greater will be the "trust" between Nike and the individual supplier) and whether or not the supplier has been designated by Nike as a *strategic partner.* Strategic partners are those suppliers that Nike has designated as tier-one suppliers. Some of them (in footwear) are involved in collaborative design and product development processes. Others (in apparel) are permitted to source their own materials and are seen as long-term partners. Thus, one would expect better labor compliance among strategic partners than among other, less strategic suppliers.[22]

To further assess the relationship between Nike and its suppliers, we investigate the *amount of capacity the factory dedicates to Nike* (as opposed to other brands) and the *number of visits Nike personnel (compliance and production) make to the factories in any one year.* We hypothesize that the more capacity a factory dedicates to Nike, the stronger the relationship and thus the higher the labor compliance (M-Audit) score should be. In addition, given that some scholars have reported that increased frequency of labor inspections led to improved workplace conditions and code compliance (Esbenshade 2004, Chap. 3), we hypothesize that the more frequently a factory

[22]For more on how buyer/supplier collaboration in manufacturing and design can lead to innovation and the development of trust-like relations, see Sabel (1994).

Table 3. Summary Statistics, Selected Independent Variables.

Variable	*Mean*	*Standard Deviation*
Total No. Employees	1,095	1,952
Ownership (1 = Foreign, 0 = Local)	0.37	0.48
Strategic Partner (1 = Yes, 0 = No)	0.19	0.39
Number of Shape Visits	5.52	4.49
Months with Nike	60.4	58.0
Percentage for Nike	47.3%	33.6%
Apparel	0.67	0.47
Footwear	0.12	0.33
Equipment	0.21	0.40
Index of Rule of Law of Factory Country	0.11	0.74

is audited (by compliance and production staff), the better will be its compliance (as expressed by a higher M-Audit score).

Country and Industry Effects

Above, we documented tremendous variation in M-Audit scores by region. To investigate the "country effect" on compliance scores, we employ the rule of law index from the World Bank's WorldWide Governance Indicators[23] as a proxy for a country's legal and regulatory environment. The rule of law index[24] measures the extent to which agents have confidence in and abide by the rules of a given country (Kaufmann et al. 2004). These include perceptions of crime incidence, the effectiveness and predictability of the judiciary, and the enforceability of contracts. The index is measured in units ranging from –2.5 to 2.5, with higher values corresponding to better governance outcomes. To control for the industry effect, we first look at all Nike suppliers and then insert industry dummy variables for footwear, apparel, and equipment. We also look at within-industry variation.

We combine the different variables in the following OLS model:

(1.1) M-Audit = $a_0 + a_1$ Log total employees + a_2*(ownership + a_3*(number of visits by Nike) + a_4*(strategic partnership) + a_5*(duration of relationship with Nike) + a_6*(percentage for Nike) + a_7*(rule of law) + a_8*(apparel) + a_9*(footwear) + ε.

Using OLS regressions, we next seek to determine whether composite M-Audit scores are correlated with dimensions of factory characteristics or with the closeness of the relationship between the factory and Nike. Consistent with our conceptual model, we focus on the initial M-Audit scores of the individual factories. The results are reported in Table 4. We also examined the relationship between individual components of the M-Audit (such as wages and work hours) and different dimensions of factory characteristics and different levels of the relationship with Nike and found consistent results. These are reported in Appendix 5.

The regression analyses suggest the following findings:

(1) *At the regional level,* region dummies are all strongly statistically significant. Region dummies reflect not only the geographic location of the factories, but also the way Nike organizes its business. Nike has regional offices in each of these four regions. Different regional offices manifest somewhat different policies and enforcement practices. The statistical significance of region dummies sup-

[23]The World Bank's Worldwide Governance Indicators project defines governance as the set of traditions and institutions by which authority in a country is exercised. The political, economic, and institutional dimensions of governance are captured by six aggregate indicators: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. For detailed construction, see Kaufmann, Kraay, and Mastruzzi (2006).

[24]We also considered other governance indices in the Worldwide Governance Indicators and other country-level indicators. We get similar qualitative results. In Appendix 3, we present the regression values that result when we replace the rule of law index by the Economic Freedom index compiled by the Heritage Foundation.

Table 4. Regression Result of First M-Audit Score on Selected Variables.

Variable	*Coefficient (Standard Deviation)*				
Rule of Law Index	0.074****	0.04****	0.045****	0.047****	0.027**
	(0.0086)	(0.0084)	(0.013)	(0.013)	(0.011)
Log Number of Employees			–0.025****	–0.022***	–.0133**
			(0.007)	(0.007)	(0.0068)
Ownership			–0.03*	–0.025	–.019
			(0.017)	(0.017)	(0.016)
No. of Shape_Visit			0.002	0.002	.0038*
			(0.002)	(0.002)	(0.002)
Strategic Partner			0.047**	0.05**	.002
			(0.021)	(0.02)	(0.020)
Months_With Nike			–0.00034*	–0.00034*	–.000014
			(0.0002)	(0.0002)	(0.0002)
Nike_Percentage			–0.071***	–0.066***	–.031
			(0.026)	(0.027)	(0.025)
Apparel			–0.008	0.014	–.0035
			(0.019)	(0.019)	(0.018)
Footwear			0.12****	0.12****	.088***
			(0.035)	(0.035)	(0.03)
Region EMEA		–0.061***			–.081****
		(0.022)			(0.024)
Region N. Asia		–0.14****			–0.16****
		(0.016)			(0.021)
Region S. Asia		–0.17****			–0.18****
		(0.017)			(0.022)
Year 03				0.046**	
				(0.023)	
Year 04				0.071***	
				(0.028)	
Constant	0.64****	0.75****	0.82****	0.75****	0.85****
	(0.064)	(0.013)	(0.045)	(0.054)	(0.04)
Observations	568	568	355	355	355
R Square	0.11	0.27	0.21	0.23	0.36

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level; ****at the .001 level.

ports the argument that workplace conditions are shaped not only by factory-level conditions and country-level conditions, but also by the way Nike organizes its production and sourcing practices, which vary from region to region.[25] *At the country level*, the strength of a country's regulations and institutions (using the rule of law index as a proxy) has a positive relationship with M-Audit scores. The first column in Table 4 shows that the rule of law index itself explains 11% of the variation in first M-Audit score. Even when the analysis controls for regional effects (the Americas versus South Asia), the coefficient on the rule of law finding, although reduced by about one-third, remains statistically significant. This suggests that factories located in countries with better legal or regulatory environments on average do better in labor compliance. This has potentially important implications for the sourcing decisions of global brands and also for the future opera-

[25]We also apply the hierarchical models to analyze the data. We find that there are statistically significant variations across regions, countries, and factories. See Appendix 4 for the regression table.

tions of both companies and NGOs as they seek to tackle these issues.[26]

(2) Controlling for country and industry variables, *at the factory level*, there exists a statistically significant negative relationship between factory size, measured by total number of employees, and M-Audit performance. This suggests that working conditions in smaller factories are better than in larger factories.[27] One possible explanation for this somewhat counter-intuitive finding could be that smaller factories (which, by the way, have on average over 1,000 employees) are easier to control and monitor than larger facilities, some of which employ tens of thousands of workers.

(3) After controlling for two other variables—factory location and industry—our analyses suggest that ownership (foreign versus national) has a statistically significant relationship with M-Audit scores. In other words, it does appear that workers receive worse treatment in factories owned by their compatriots than in foreign-owned factories.

(4) Within the category of Nike-related variables, the number of visits by Nike personnel and whether or not a factory is a strategic partner are positively associated with M-Audit scores. However, the duration of the relationship with Nike and the percentage of capacity dedicated to Nike are negatively related to the M-Audit scores. All four coefficients are statistically significant. When analyzing how frequently Nike staff visited individual factories, we were able to separate out different types of Nike personnel (for example, compliance officers as opposed to quality specialists or sourcing directors). When we remove compliance staff from the analyses, we still obtain the same positive, statistically significant results. This suggests that this positive relationship *is not* the result of more frequent social audits and factory inspections. Instead, something else appears to be happening. One possible explanation for this apparently contradictory finding could be that factories that have a closer relationship with Nike are also those with more face-to-face contact with the Nike sourcing and production teams and, as such, engage in various initiatives, focusing on both process (lean manufacturing systems, for example) and quality (TQM), aimed at improving production efficiencies. These, in turn, have positive spill-over effects on labor conditions. An additional possible explanation is that frequent visits by production and sourcing staff (but not compliance managers) lead to greater trust and a better working relationship between the brand and its suppliers. This explanation is consistent with Frenkel and Scott's (2002) comparative case study of two Adidas suppliers. These relationships are explored in a related paper (Locke and Romis 2007). Interestingly enough, frequency of visits is not a function of whether a supplier is a strategic partner. The interaction effect of these two variables is not statistically significant.

(5) The negative relationship between M-Audit scores and the duration of Nike's relationship with its suppliers could be explained in two ways. Perhaps those factories with a longer working relationship with Nike are also older factories (that is, possess older plants and equipment), with resultantly poorer working conditions. An alternative possible explanation is that Nike has become increasingly demanding in terms of labor compliance and thus more recent suppliers, having achieved or surpassed more stringent selection criteria, are better equipped to comply with Nike's code of conduct. Interviews with Nike compliance staff indicate that the company has, in fact, stepped up demands for compliance by its suppliers. This explains why 43% of potential suppliers fail their initial pre-sourcing approval process. More recent

[26]The importance of building state capacities, especially in the area of labor inspection, has been the focus of recent work by Michael Piore (2005). See also Schrank (2005).

[27]To analyze the impact of factory size on M-Audit scores, we ran two tests. First we compared individual factories against the average size of plants in their respective industries to see if the individual plants were either above or below the industry average. Second, we sorted our sample into 10 subgroups, according to their size (number of employees), with the first subgroup containing the smallest 10% of factories and the tenth subgroup containing the largest 10%. We then ran regressions using these subgroup dummies. In both tests, the larger factories had significantly lower M-Audit scores.

Table 5. Initial and Subsequent M-Audits.

M-Audit Sequence	*Mean*	*Standard Deviation*	*Observations*
First M-Audit Score	0.65	0.16	575
Second M-Audit Score	0.70	0.16	117
Third M-Audit Score	0.82	0.07	5

Table 6. Time Trend for M-Audit Score (First M-Audit Only).

Year of M-Audit	*Mean*	*Standard Deviation*	*Observations*
M-Audit in 2002	0.638	0.130	61
M-Audit in 2003	0.643	0.167	351
M-Audit in 2004	0.673	0.155	159
M-Audit in 2005	0.44	0.081	4

(newer) suppliers may also possess more modern technologies and factory structures, and this too may contribute to the observed result. The negative relationship observed between the percentage of capacity dedicated to Nike and the M-Audit score could be seen as evidence that, contrary to arguments suggesting that suppliers are suffering from "audit fatigue," multiple brands with different monitoring programs may be promoting improvements and learning within the factory. These different brands may also engage in informal cooperation with one another, thus presenting a more united front to the suppliers, who, in turn, respond to these common pressures. Interviews with compliance managers at Nike and other brands confirm that informal information-sharing and coordination do in fact take place among brands sourcing from the same factories.

The Change in Labor Compliance over Time

Since the late 1990s, Nike has been actively engaged in monitoring its supply base. Over time, it has substantially expanded its compliance staff, invested heavily in the training of its own staff and that of its suppliers, developed ever more rigorous audit protocols and internalized much of the auditing process, worked with third party social auditing companies and NGOs to check its own internal audits, and spent millions of dollars to improve working conditions at its supplier factories. Interviews conducted during field research for this project with Nike monitors and compliance staff suggested that these people are serious, hard-working, and moved by genuine concern for workers and their rights. Given all that Nike has invested in staff, time, and resources over the past decade, have conditions at the factories improved? In other words, did monitoring lead to remediation or improvement of working conditions? We seek to evaluate this third question by examining historical data for both the M-Audits and the Compliance Rating scores.

Changes in M-Audit Scores

Table 5 summarizes the means and standard deviations of the first, second, and third M-Audit scores. One hundred and seventeen (117) factories underwent two M-Audits, and 5 factories were monitored a third time. The descriptive statistics show an improvement.

Table 6, presenting initial M-Audit scores year by year, shows that in general, the performance on the audits improved from 2002 to 2004 (we ignore the 2005 number because it is based on only a few observations).

Thus, on average and over time, both for first-time audited factories and for factories that have been monitored more than once, it appears that working conditions (as expressed in their M-Audit scores) are improving. This would suggest that monitoring works.

We conducted several tests to investigate whether there is a systematic upward or downward bias in the selection of factories audited a second or third time. First we compared the initial M-Audit scores of factories that did not receive subsequent audits with the scores of those that did, to see whether or not Nike chose to re-audit those factories that did better the first time around. The comparison of the distribution of the M-Audit scores of the single-audited factories against the distribution of the initial scores of the multiple-audited factories is shown in Figure 4. The T-test results are presented in Table 7.

We see from Table 7 that there is no statistically significant difference between the two

Table 7. Comparison of the First M-Audit Score between Factories Monitored Once and Factories Monitored Multiple Times.

	First M-Audit Score		
Factory Group	*Mean*	*Standard Deviation*	*Observations*
Factories with Only One M-Audit	0.65	0.16	458
Factories with More Than One M-Audit	0.64	0.16	117

Test: Diff = Mean (First M-Audit Score of Single M-Audit Factories) – Mean (First M-Audit Score of Multiple M-Audit Factories).
H0: Diff = 0.
T = 0.7643; Degrees of Freedom = 573.

groups. Figure 4 also shows that two waves of M-Audits have very similar probability densities.

We then explored whether the sample of factories that received second M-Audits was biased in any way toward certain factory characteristics (size, age, location). We conducted probit models with "whether a factory received a second M-Audit" as the dependent variable. The results are shown in Table 8.

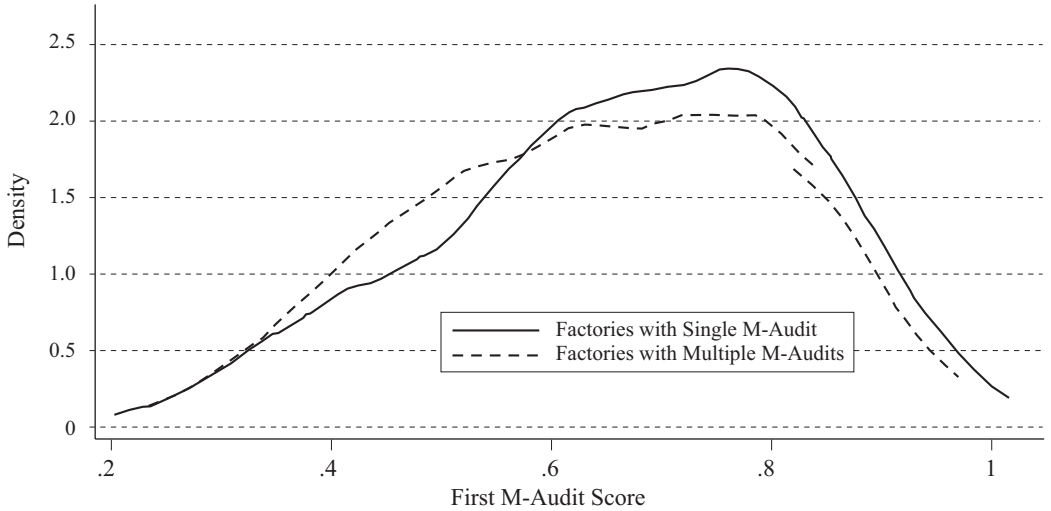
The probit models show that there does appear to have been some bias in the sample of factories that received a second audit. Strategic partners and factories that dedicated a larger proportion of their capacity to Nike were more likely to receive a second M-Audit. In fact, strategic partnership itself explains a big proportion (15%) of the variation in the likelihood of a second M-Audit. Moreover, factories located in countries with a lower rule of law index, or with weaker legal and regulatory systems, were also more likely to be re-audited. This suggests that the biases go in two different directions and, thus, more or less cancel each other out. We know from our analyses of the first round of M-Audits that strategic partners usually performed better (had higher scores) than non–strategic partners. However, we also learned from the analyses of the first round of M-Audits that performance in these audits tended to be worse for factories located in countries with weaker regulatory systems and factories with a greater percentage of capacity dedicated to Nike. Interviews with senior compliance managers at Nike indicate that the company chose to concentrate its resources on both high-risk factories and suppliers with which it hopes to develop more long-lasting relationships. Moreover, as stated previously, Nike has become more stringent in its initial screening of factories, weeding out factories with poor compliance records. The company is also disengaging from suppliers that consistently violate its code of conduct.[28]

The Change in Compliance Ratings (CRs)

To better assess whether factory conditions were improving over time, we also examined the Compliance Ratings that all Nike suppliers are assigned. Because these ratings are easier to understand than are M-Audit scores, they are used more often by Nike managers to guide production and sourcing decisions. The goal of the Compliance Rating program is to develop a tool that integrates compliance and sourcing decisions. A grade (A–D) is given by the local compliance managers and is based on all audits and factory visits by Nike staff as well as by the FLA. (See Appendix 2 for an explanation of the grading system.) The most recent Compliance Rating Database, in which over 700 factories have more than one CR rating, enables us to examine the change in workplace conditions as measured by the CR grade given to the factory over time. To assess change over time in the compliance rating, we first describe the overall ratings of all Nike suppliers and how they have evolved over time. We then examine individual factories, comparing

[28]For more on this, see Nike, Inc., "Innovate for a Better World: FY05-06 Corporate Responsibility Report," May 31, 2007, pp. 39–42.

Figure 4. First M-Audit Score of Factories with Only One M-Audit vs. Those with Multiple M-Audits.



Note: The vertical axis denotes the probability density function.

their first grade with their last to evaluate how conditions have evolved.

Tables 9 and 10 present summary statistics for the CR grades assigned to Nike's suppliers. There are 3,686 observations of CR ratings in total, with half of the factories receiving a B grade. From 2001 to 2004, the average CR score declined, and that was most obvious in 2003 and 2004.

Figure 5 illustrates the shift in the distribution of grades over time. In 2003 and 2004, the number of factories that received an A grade dropped dramatically while the number of factories receiving a C or D grade increased. However, it is important to note that the pools of factories that received the CR scores differed from year to year. Thus, based on these aggregate data, we do not know whether the overall CR performance of Nike's supply base worsened over time or if Nike has paid increasing attention to poor-performing factories.

However, when examination turns to the *same factories* over time (that is, when we compare their very first CR grade with their last grade), a more negative picture emerges. Almost half of the factories experienced no change in compliance rating, and over 36% experienced a decrease in their CR grade. In other words, according to Nike's own Compliance Rating system, workplace conditions in almost 80% of its suppliers either remained the same or worsened over time. See Table 11.

Thus we see that on one measure, the M-Audit score, factory workplace conditions appear to have been improving over time, while on another measure (also generated internally by Nike's own staff), workplace conditions were either stagnant or getting worse. One possible explanation for this apparently contradictory finding is that the two tools are measuring different things: the M-Audit privileges documentary evidence and company records, whereas the Compliance Rating program is a more subjective appraisal of factory management's attitudes toward these issues. Interviews with Nike compliance staff suggest that these two tools are, in fact, picking up different facets of the factory reality. Another possible explanation for the divergence in results between these two compliance programs is that suppliers are "learning" how to perform on the M-

Table 8. Probit Regression of the Likelihood of Subsequent M-Audits.

Variable	*Coefficient (Standard Deviation)*		
First M-Audit Score	–.2802 (.6384)		–1.89*** (.66)
Strategic Partner (1 = Yes, 0 = No)		1.3152*** (.1436)	1.07**** (.22)
Log No. Employees			.11 (.10)
Ownership (1 = Foreign, 0 = Local)			.34* (.19)
Number of Visits			.0001 (.026)
Months with Nike			–.0002 (.0026)
Nike Percentage			0.92*** (.31)
Rule of Law			–.25* (.14)
Apparel			.82*** (.26)
Footwear			.79** (.39)
Region EMEA			–.97*** (.34)
Region N. Asia			–.97**** (.27)
Region S. Asia			–.98*** (0.32)
Constant	–.6481**	–1.1594***	–.98 (.76)
Observations	575	575	355
R-Square		.15	.28
LR Chi^2(1)/ LR Chi^2(13)		85.97***	117.8****

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level; ****at the .001 level.

Audit by better preparing their documents and perhaps even coaching their workers, but that Nike's local compliance staff are not fooled and thus are grading suppliers on what is actually happening on the factory floor. This too was suggested to us in interviews with compliance managers in the field and at Nike headquarters.

Concluding Considerations

Notwithstanding all the controversies over corporate codes of conduct and private voluntary regulation, monitoring for compliance with codes of conduct is the principal means by which both global corporations and labor rights NGOs currently seek to address poor working conditions in global supply chain factories. Using a unique data set based on factory audits of over 800 of Nike's suppliers located in 51 different countries, we have sought to analyze the effectiveness of this approach. Our data have at least two limitations. First, they are based on internal, company-based audits and thus may be biased in favor of the company. As our analyses have illustrated, these data nonetheless reveal very serious issues with working conditions and labor rights among Nike's suppliers. Second, the data pertain only to one company, Nike Inc. However, given the central and highly controversial place Nike occupies in the debates over globalization and labor standards, we feel that it serves as a "crucial case" through which to explore the effect of monitoring on workplace conditions.[29]

The data and analyses presented above show that working conditions at Nike's suppliers (as indicated by each factory's score on the M-Audit) are quite mixed. Some factories appear to have been substantially or fully compliant with Nike's code of conduct, while others appear to have been suffering from persistent problems with wages, work hours, and health and safety. This variation in working conditions appears to be the result of *country effects* (the labor inspectorate's ability or inability to enforce labor laws and standards in the country in which the factory is located), *factory characteristics* (the age and size of the factory), and the *relationship between Nike and the particular supplier* (whether the supplier is a strategic partner, how often Nike [non-compliance] staff visit and interact with the factory, and who else is sourcing product from the same factory).

The findings of this paper also suggest that notwithstanding Nike's very real interests in improving its image vis-à-vis these issues and the company's considerable efforts and

[29]For more on "crucial case" methodology, see Eckstein (1991).

Table 9. Summary of CR-Rating by Score.

Score	*A*	*B*	*C*	*D*	*Total*
Counts	571	1,945	699	471	3,686
Percentage	15.49	52.77	18.96	12.78	100

investments over the past decade to improve working conditions among its suppliers, the results produced by monitoring appear to have been limited, and perhaps mixed. After years spent by Nike developing ever more comprehensive monitoring tools, hiring growing numbers of internal compliance specialists, conducting hundreds of factory audits, and working with external consultants and NGOs, analyses of the company's own data suggest that conditions have improved somewhat in some of its suppliers but either stagnated or deteriorated in many others. Interviews with other global brands, NGO representatives, and leaders of the major multi-stakeholder initiatives indicate that Nike's experience with monitoring is by no means unique. In short, monitoring alone is not producing the large and sustained improvements in workplace conditions that many had hoped it would. This has important implications for company, NGO, and government policy.

Further analysis will be needed to better understand not simply the relational strength of the above findings, but also, and more important, their causal linkages. Yet these findings also provide insights into and ingredients for what could be a different (although perhaps complementary) approach toward improving working conditions and labor rights in these factories. For example, if improved working conditions are the result of more stringent or capable state regulation and monitoring, then proponents of international labor standards should focus their attention on helping developing countries build up this capacity. Conversely, if improved working conditions appear to be a by-product of more frequent and open interactions between the brands and their suppliers, and their assistance in improving production efficiencies and capabilities of their suppliers, then current arrangements, which appear to be based on short-term contracts, arms-length relationships, and ever-more sophisticated systems of policing and monitoring, need to be re-thought.

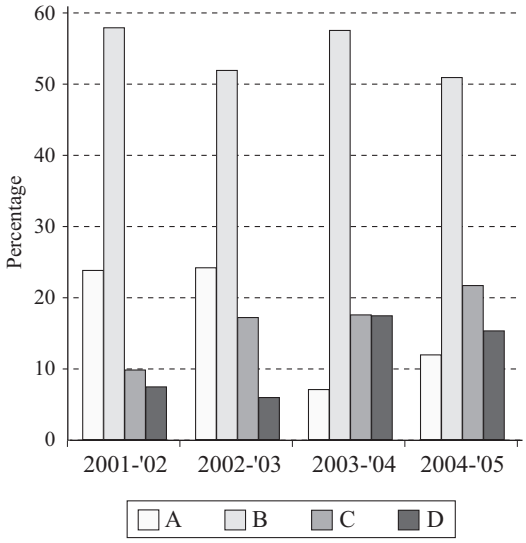
Recall the positive relationship between the frequency with which Nike sourcing, production, and quality personnel visited certain factories and the scores these same factories received on their M-Audits. During the field research for this project, we explored what might be behind this relationship. We found that some suppliers were collaborating with Nike personnel to introduce new quality improvement programs or lean manufacturing systems (or both). This explains why these more technical and business-oriented staff (as opposed to the compliance specialists) were visiting these particular factories more often. As these particular suppliers improved the efficiency and quality of their own operations, they were better able to schedule their workload (hence, avoid excessive overtime) and increase their workers' wages (sharing the efficiencies gains). Moreover, having invested tremendously in training aimed at enabling their workers to effectively operate their new production and quality improvement programs, managers at these factories were wary of mistreating these highly skilled workers for fear that they would leave and work for a competitor. Similarly, workers who have been trained to "stop the line" when they see a possible defect, and those trained to

Table 10. Summary of CR-Rating by Year.[a]

Year	*Mean of CR Score*	*Observations*
2001	2.986	220
2002	2.948	1,132
2003	2.545	1,004
2004	2.584	1,323

[a]In order to translate the letter grades into numerical scores, we assigned values to each letter: A = 4, B = 3, C = 2, D = 1.

Figure 5. The Distribution of CR Rating (percentage) from 2001 to 2004.



work in more autonomous production cells, are also more likely to resist management abuses on the shop floor. These findings, which are further developed in a companion paper (Locke and Romis 2007), appear to be corroborated by similar research on other global companies (Frenkel and Scott 2002).

The above considerations suggest that global brands and labor rights NGOs would do well to complement their current emphasis on monitoring by providing suppliers technical and organizational assistance to tackle some of the root causes of their poor working conditions. Perhaps not all suppliers would be willing to collaborate with global brands and NGOs on these efforts, but refusals to collaborate could provide global brands with a justification to shift orders and consolidate production in more efficient, cooperative, and perhaps even "ethical" suppliers. Some level of monitoring or compliance would still need to take place, but perhaps this could be done by developing, and then collaborating with, country government authorities invested with the capacity and legitimacy to exercise their rightful duty and enforce their own laws. This too could lead to manifold positive spill-over effects for the developing countries and their citizens.

Looked at in its full evolutionary context, the Nike case suggests that if working conditions and labor rights for the millions of workers employed in global supply chain factories are to be improved, a more systemic approach will be needed, one that combines external (countervailing) pressure—be it from the state, or unions, or labor-rights NGOs—with comprehensive and transparent monitoring systems and a variety of "management systems" interventions aimed at eliminating the root causes of poor working conditions. External pressures from NGOs and other advocacy groups are what motivated Nike to introduce a code of conduct and a monitoring system. It took several years for Nike to develop its own internal standards, recruit and train a professional staff, and implement a monitoring system. The system provided the data needed to assess progress and identify areas needing further improvement. At the same time, Nike's efforts to implement modern production and quality management practices complemented its efforts to improve monitoring and labor standards. The next phase in the evolutionary process is to adjust Nike's other business strategies and organizational processes so that they too recognize and address root causes of poor working conditions.

Interestingly, Nike has begun to shift its compliance strategy toward this more collaborative model. Nike's new "generation 3" compliance strategy acknowledges that policing its suppliers is not enough. Instead, the company is seeking to supplement monitoring with collaborative initiatives aimed at diffusing workplace and human resource management best practices among its suppliers. It has also updated its various audit tools and grading systems in order to make them more accurate and transparent to suppliers and to its own business units. In addition to these efforts to improve and supplement its monitoring systems, Nike has begun an extensive review of the company's own upstream business processes—such as product development, design, and commercialization—in order to identify potential drivers of excessive overtime among suppliers. All of this suggests

that Nike is working on promoting greater integration of its labor compliance initiatives with core business processes.[30]

This more systemic approach is precisely how previous issues (such as improving product quality, promoting occupational health and safety, and redressing inequality of opportunity in employment and promotion decisions) were tackled. In each of these prior cases, external pressures led to company-sponsored standards and compliance programs. The limited results of this initial response led to the adoption of new management systems that elevated and integrated these issues into the core operations of the business. Programs promoting basic compliance with OSHA and EEOC standards or even ever-greater demands for improved quality were replaced by new forms of work organization and human resource management systems that ensured not only more healthy and equitable workplaces but also new sources of competitive advantage for the firms embracing these policies.[31]

Table 11. Changes in CR Grades over Time.[a]

Change in CR Rating	*Frequency*	*Percent*
–3 (Down by 3 Degrees)	20	2.62
–2 (Down by 2 Degrees)	74	9.70
–1 (Down by 1 Degree)	181	23.72
0 (No Change)	323	42.33
1 (Up by 1 Degree)	116	15.20
2 (Up by 2 Degrees)	42	5.50
3 (Up by 3 Degrees)	7	0.92
Total	**763**	**100**

[a]The change in CR rating is calculated as the score from the most recent audit minus the score from the earliest audit.

Improving labor standards in global supply chain factories will require a parallel journey. We hope our research will help induce global companies, NGOs, governments, and even scholars—all of us—to take the first collective step down this path.

[30]See Nike, Inc., "Innovating for a Better World: FY05-06 Corporate Responsibility Report" for more on these changes.

[31]For more on the evolution of these practices, see Dobbin and Sutton (1998). The evolution of compliance with OSHA regulations is nicely described in Weil (1991, 1996). The evolution of the total quality movement is nicely described in Shiba et al. (1993, Chaps. 1 and 2), Cole (1999), and Weick (1999).

Appendix 1
Nike Code of Conduct

Nike, Inc. Was Founded on a Handshake

Implicit in that act was the determination that we would build our business with all of our partners based on trust, teamwork, honesty and mutual respect. We expect all of our business partners to operate on the same principles.

At the core of the NIKE corporate ethic is the belief that we are a company comprised of many different kinds of people, appreciating individual diversity, and dedicated to equal opportunity for each individual.

NIKE designs, manufactures .and markets products for sports and fitness consumers. At every step in that process, we are driven to do not only what is required by law, but what is expected of a leader. We expect our business partners to do the same. NIKE partners with contractors who share our commitment to best practices and continuous improvement in:

1. Management practices that respect the rights of all employees, including the right to free association and collective bargaining
2. Minimizing our impact on the environment
3. Providing a safe and healthy work place
4. Promoting the health and well-being of all employees

Contractors must recognize the dignity of each employee, and the right to a work place free of harassment, abuse or corporal punishment. Decisions on hiring, salary, benefits, advancement, termination or retirement must be based solely on the employee's ability to do the job. There shall be no discrimination based on race, creed, gender, marital or maternity status, religious or political beliefs, age or sexual orientation.

Wherever NIKE operates around the globe we are guided by this Code of Conduct and we bind our contractors to these principles. Contractors must post this Code in all major workspaces, translated into the language of the employee, and must train employees on their rights and obligations as defined by this Code and applicable local laws.

While these principles establish the spirit of our partnerships, we also bind our partners to specific standards of conduct. The core standards are set forth below.

Forced Labor

The contractor does not use forced labor in any form—prison, indentured, bonded or otherwise.

Child Labor

The contractor does not employ any person below the age of 18 to produce footwear. The contractor does not employ any person below the age of 16 to produce apparel, accessories or equipment. If at the time Nike production begins, the contractor employs people of the legal working age who are at least 15, that employment may continue, but the contractor will not hire any person going forward who is younger than the Nike or legal age limit, whichever is higher. To further ensure these age standards are complied with, the contractor does not use any form of homework for Nike production.

Compensation

The contractor provides each employee at least the minimum wage, or the prevailing industry wage, whichever is higher; provides each employee a clear, written accounting for every pay period; and does not deduct from employee pay for disciplinary infractions.

Benefits

The contractor provides each employee all legally mandated benefits.

Hours of Work/Overtime

The contractor complies with legally mandated work hours; uses overtime only when each employee is fully compensated according to local law; informs each employee at the time of hiring if mandatory overtime is a condition of employment; and on a regularly scheduled basis provides one day off in seven, and requires no more than 60 hours of work per week on a regularly scheduled basis, or complies with local limits if they are lower.

Environment, Safety and Health (ES&H)

The contractor has written environmental, safety and health policies and standards, and implements a system to minimize negative effects on the environment, reduce work-related injury and illness, and promote the general health of employees.

Documentation and Inspection

The contractor maintains on file all documentation needed to demonstrate compliance with this Code of Conduct and required laws; agrees to make these documents available for Nike or its designated monitor; and agrees to submit to inspections with or without prior notice.

Last updated March 2005
http://www.nike.com/nikebiz/nikebiz.jhtml?page=25&cat=code
Accessed June 21, 2006

Appendix 2
Nike's Compliance Rating System

Grade	*Compliance Rating Criteria*	*Description*
A	No more than five minor issues outstanding on the Master Action Plan *and* no more than 20% of MAP items past due.	Non-compliance issues that do not reach levels defined as C or D issues (see below).
B	More than five minor issues, but no serious or critical issues outstanding on the MAP *and* no more than 30% of MAP items past due.	Non-compliance issues that do not reach levels defined as C or D issues (see below).
C	**One** or more C-level issues, but *no* D-level issues outstanding on the MAP or more than 30% of MAP items past due.	• Lack of basic terms of employment (contracts, documented training on terms, equal pay, discriminatory screening) • Non-compliance with local laws on treatment of migrant workers • Less-than-legal benefits not related to income security (for example, leave) • Excessive hours of work: greater than 60 hours/week but less than 72 hours/week • Exceeding legal annual overtime work hour limit for 10% or more of the work force • Not providing one day off in seven • Verbal or psychological harassment or abuse • Conditions likely to lead to moderate injury or illness to workers • Conditions likely to lead to moderate harm to the environment or community
D	**One** or more D-level issues outstanding on MAP *or* serious issues past due; or more than 40% of open MAP items past due.	• Unwillingness to comply with Code standards • Denial of access to authorized Nike compliance inspectors • Falsification of records and coaching of workers to falsify information • Homework, or unauthorized subcontracting • Underage workers • Forced labor: bonded, indentured, prison • Denial of worker rights to Freedom of Association where legal • Pregnancy testing • Confirmed physical or sexual abuse • Paying below legal wage • Denial of benefits tied to income security • No verifiable timekeeping system • Exceeding legal daily work hour limit or work in excess of 72 hours/week for 10% or more of the work force • Not providing one day off in 14 days • Conditions that can lead to death or serious injury • Conditions that can lead to serious harm to the environment

Source: Nike Corporate Responsibility Report: Part II. FY '04, p. 25. Accessed June 21, 2006. http://www.nike.com/nikebiz/qc/r/fy04_Nike_CR_report_pt2.pdf

Appendix 3
Explaining the Variation in First M-Audit Scores: Alternative Country Level Indices

In this appendix, we present the regression results for First M-Audit scores on selected variables using a country-level index different from the World Bank's rule of law index we used in the text (Table 4). Here, we use instead the Economic Freedom Index compiled by the Heritage Foundation.[32] The Index of Economic Freedom measures 161 countries against a list of 50 independent variables divided into 10 broad factors of economic freedom. Scores range from 1 to 5. Low scores are more desirable. The higher the score on a factor, the greater the level of government interference in the economy and the less economic freedom a country enjoys. The Index of Economic Freedom includes the broadest array of institutional factors determining economic freedom.[33]

Table A3 presents the regression results. The results are very similar to those reported in Table 4. (The sign on Economics index is negative here. Note that a low Economic Freedom Index is better, while a high rule of law index is more desirable).

Table A3
Results of Regressing the First M-Audit Score on Selected Variables, Using the Economic Freedom Index

Variable	*Coefficient (Standard Deviation)*				
Economic Freedom Index	–0.12****	–0.065****	–0.083****	–0.089****	–0.041***
	(0.001)	(0.0011)	(0.016)	(0.016)	(0.016)
Log Number of Employees			–0.016**	–0.012*	–.012*
			(0.007)	(0.007)	(0.007)
Ownership			–0.03*	–0.022	–0.019
			(0.017)	(0.017)	(0.016)
Num. of Shape_Visit			0.002	0.002	0.0037*
			(0.002)	(0.002)	(0.002)
Strategic Partner			0.038*	0.04*	0.004
			(0.021)	(0.02)	(0.020)
Months_with Nike			–0.00038*	–0.00037*	–.000014
			(0.0002)	(0.0002)	(0.0002)
Nike_Percentage			–0.049*	–0.042	–0.026
			(0.026)	(0.027)	(0.025)
Apparel			–0.0067	0.013	–0.0017
			(0.019)	(0.0192)	(0.018)
Footwear			0.11***	0.11***	0.085***
			(0.035)	(0.035)	(0.03)
Region EMEA		–0.040*			–0.069***
		(0.022)			(0.025)
Region N. Asia		–0.12****			–0.15****
		(0.017)			(0.021)
Region S. Asia		–0.14****			–0.17****
		(0.018)			(0.023)
Year 2003				0.048**	
				(0.023)	
Year 2004				0.080***	
				(0.028)	
Constant	0.99****	0.94****	1.01****	00.94****	0.96****
	(0.031)	(0.03)	(0.04)	(0.047)	(0.04)
Observations	568	568	355	355	355
R-Square	0.18	0.28	0.24	0.26	0.36

Appendix 4
Explaining the Variation in First M-Audit Scores: Hierarchical Models

In this appendix, we present the regression results for First M-Audit scores in hierarchical settings. We use two-level hierarchical models, with factory as the first level and region as the second. The regression results are very similar to those shown in Table 4.

Table A4
Two-Level Hierarchical Model of First M-Audit Score on Selected Variables
(Level One: Factories; Level Two: Regions)

Variable	*Coefficient (Standard Deviation)*			
Rule of Law Index	0.038****	0.04****	0.029***	0.032***
	(0.01)	(0.009)	(0.011)	(0.011)
Num. of Shape Visit			0.0036*	0.0036*
			(0.0018)	(0.002)
Ownership	–0.027**	–0.019	–0.028*	–0.020
	(0.013)	(0.014)	(0.015)	(0.016)
Log(No. Employees)			–0.011*	–0.012*
			(0.0064)	(0.007)
Strategic Partner	0.048***			0.004
	(0.15)			(0.019)
Month with Nike			0.0001	–0.0003
			(0.0001)	(0.0002)
Nike Percentage		0.041**		–0.027
		(0.019)		(0.016)
Apparel			0.021	0.012
			(0.017)	(0.018)
Footwear			0.073***	0.102****
			(0.032)	(0.032)
Year 2003	0.029	0.031		0.046**
	(0.018)	(0.02)		(0.021)
Year 2004	0.046**	0.056***		0.066***
	(0.02)	(0.023)		(0.025)
Constant	0.63****	0.616****	0.72****	0.69****
	(0.041)	(0.042)	(0.057)	(0.064)
Region Random Effect:				
Std(const)	0.074	0.07	0.083	0.080
Std(residual)	0.14	0.13	0.13	0.13
Observations	568	463	355	355
Number of Groups	4	4	4	4
Chi^2	37.72****	33.14****	53.12****	57.74****
Log-Restricted Likelihood	301.1	245.4	201.7	181.5

Appendix 5

In this appendix, we present the regressions of two M-Audit items—wages and work hours—on selected variables to determine whether there are differences between our analyses using the composite M-Audit with its constituent items. Overall, the results are qualitatively similar to those reported in Table 4. We still find a statistically significant positive correlation between the country-level macro variable and M-Audit sub-scores. Factory size is still negatively related to sub-scores. Strategic Partners is statistically significant, but less robust. Nike percentage is negatively related to sub-M-Audit scores. There is one interesting contrast between wages and work hours: the log number of employees has a highly statistically significant negative relationship with hours but no association with wages.

Table A5
Results of Regressing M-Audit Sub-Scores on Selected Variables

Variable	*Wage Standard*	*Hours Standard*
Index of Economic Freedom	–0.0722***	–0.09***
	(0.025)	(0.03)
(log) Number of Employees	–0.013	–0.061****
	(0.01)	(0.01)
Ownership	–0.002	0.004
	(0.026)	(0.03)
Shape Visit	–0.00079	–0.000002
	(0.003)	(0.004)
Strategic	0.028	0.09**
	(0.03)	(0.04)
Month with Nike	–0.00012	0.00055
	(0.0003)	(0.0004)
Nike Percentage	–0.105***	–0.146***
	(0.041)	(0.05)
Apparel	0.032	0.0006
	(0.029)	(0.04)
Footwear	0.15***	0.254****
	(0.05)	(0.068)
Year 2003	0.003	0.035
	(0.036)	(0.045)
Year 2004	0.04	0.02
	(0.04)	(0.05)
Constant	1.02****	1.17****
	(0.07)	(0.09)
Observations	355	355
R Square	0.11	0.21

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