'It’s gotta be da shoes': domestic manufacturing, international subcontracting, and the production of athletic footwear

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Abstract. An apparent paradox exists in the geography of athletic footwear production. The industry is highly labor intensive; it is also locationally volatile. Although most production now takes place in Southeast Asia, the United States nevertheless still contains significant enclaves of athletic footwear production. Moreover, the cheapest shoes continue to be produced in the United States whereas more complex, expensive models tend to be manufactured in Asia. To understand this geography, we must move beyond the basic consideration of international labor-cost differentials. By means of two case studies, it is shown that domestic production involves very different labor processes from those of production based in other countries and, like many other sectors of the economy, domestic producers gain advantage by carrying smaller inventories through faster lead times. The best explanation, though, centers on the shoes themselves. Athletic shoes produced in the United States tend to have many fewer stitches in them than those manufactured elsewhere, which minimizes the most expensive component of the production process. Furthermore, tariffs on athletic shoes massively discriminate against imported shoes of a particular construction.

1 Introduction

1.1 Overview
The athletic footwear industry, by any measure, is highly dynamic. In economic terms, both sales and volume of production grew very rapidly in the 1980s. Sales of athletic footwear in the United States probably tripled during the last ten years (Willigan, 1992) and, according to one study, Reebok International Ltd has been the fastest growing company in the history of US business (Korzeniewicz, 1992). The industry is also volatile geographically. For example, in 1989 Nike Inc. (the brand with the largest market share in the United States) had about 2% of their shoes made by Chinese-based subcontractors: in 1993, almost a quarter of their shoes will come from Chinese factories. More generally, in the last thirty years, the locus of production within South and East Asia has shifted radically (Donaghu and Barff, 1990; Levy, 1991). At a different spatial scale, many producers of athletic footwear have developed a complex set of long-term and short-term subcontracting agreements with other firms that change from year to year as a result of factory improvements, market fluctuations, and technological progress (Donaghu and Barff, 1990).

Although source countries continue to change, the majority of athletic footwear production continues to occur in the Southeast Asian region. The three US companies which account for over 60% of sales in the USA have the vast majority of their production there. Several athletic footwear firms, however, still manufacture in the United States. This type of athletic footwear company generates particular interest because domestic production persists despite huge discrepancies in labor costs between the USA and abroad. Based largely on two detailed case studies, this research explains the dichotomy in the geography of athletic footwear production.
within the context of contemporary theory on the spatial division of labor. We argue that athletic footwear production represents an industry that cannot be exclusively characterized by analysis of comparative labor costs and a spatial division of labor at an international scale, but rather is best understood by a deeper theorization of processes operating at various geographic scales—from the firm to the region, nation, and eventually to supranational entities. Specifically, this involves unearthing the relations between labor costs, the nature of the manufacturing process, market strategy, and regulatory policy.

The emphasis on regulatory policy, particularly tariffs, separates this paper from much previous Anglo research on international trade dynamics and the new international division of labor (NIDL), which has, in the main, neglected the effects of tariffs on industrial location (see McConnell, 1986; O'Loughlin, 1990; Rees, 1992). By way of contrast, regulatory policy in the form of tariffs, quotas, and exchange controls in Latin America (for example, Gwynne 1986), the Caribbean (Schoepfle and Perez-Lopez, 1989), and in other parts of the Third World (Gereffi and Wyman, 1990) are almost always considered as part of an assessment of the course of industrial development. Given the interest in geographical restructuring in the United States, regional adjustment, and regulatory frameworks (for example, Clark, 1989; 1990; 1991; 1993), we seek to broaden that focus to include international regulatory policy. This effort may be especially timely given that, at the time of writing—summer 1992, a North American Free Trade Agreement (NAFTA) had just been signed between Canada, the United States, and Mexico and the Multi Fiber Arrangement (MFA) in textiles and apparel expires. Increasingly, economic geographers will have to make more explicit consideration of trade and tariff policies (Rees, 1992).

1.2 Restructuring in the shoe industry and the new international division of labor

Shoe manufacturing (like some other nondurables) was once a major part of the economies of the world capitalist core. In the United States, employment in the shoe industry has declined steadily during the 20th century as mass production in vertically integrated facilities gradually replaced the vertically disintegrated craft production of the previous centuries. To a certain extent, production also shifted geographically to the South and Midwest, but Massachusetts in particular and New England in general remain the focus of the industry today. Since about 1970, the US footwear industry has struggled even more as low-skilled standardized production decentralized to the global periphery. In the last decade alone, employment in nonrubber footwear production has dropped from 143,000 to about 90,000 in 1990 while imports of shoes have more than doubled (Footwear Industries of America, 1989). This sector of the US economy is particularly vulnerable to competition from nations with low average manufacturing wages (Donaghu and Barff, 1990; Parkinson, 1990).

One of the simplest and most powerful explanations for this dispersal based on wage rates centers the well-known NIDL theory (Fröbel et al, 1980; Hymer, 1972; Massey, 1984; Schoenberger, 1988). Originally conceived as a treatment of the role of the multinational corporation in uneven development, the NIDL idea put forward the view that multinationals are endowed with internal divisions of labor, commodity flows, and hierarchical modes of organization (Walker, 1989). Whereas the old horizontal division of labor placed the periphery in a role supplying primary goods and raw materials for processing in the global core, NIDL theory emphasized a different geography where new pressures forced corporations to restructure and seek cheaper sites of production in the periphery. Improvements in transportation and communication, the evolution of a large supply of disposable labor in developing
nations, and the increasing subdivision of modern labor processes facilitated this dispersal, and was partially caused by heightened competition between producers in traditional core countries and those in newly industrializing countries in the periphery.

Despite (and perhaps because of) its simplicity, the NIDL thesis has become one of the main tools in explaining recent trends in global industrialization (for example, Dicken, 1992). In this paper, of course, we look specifically at footwear production: an archetype of the NIDL model. In many parts of the world, the footwear industry, like the clothing industry, continues to be highly labor intensive, reliant on narrow divisions of labor, and most shoes sold in the United States are manufactured in developing countries. The NIDL model, however, fails to explain the tenacious presence of producers in the United States where labor costs far exceed those in many developing countries.

2 Methodology
At the beginning of this project, we set out to investigate in detail three or four US-based athletic footwear companies. Of the several we contacted, two (Converse Inc. and New Balance Athletic Shoe Inc.) allowed access to the factory and senior management and workers for interview. The interviews, carried out in the summer and autumn of 1990, provided much of the empirical information for this research. The unstandardized format of the interviews yielded special insight into the locational and production strategies of the companies in the context of a variety of contingent circumstances (McDowell, 1992; Schoenberger, 1991). Where necessary, quantitative data from published sources supplement the qualitative information we derived from interview. Blending both qualitative and quantitative data allowed us to develop an empirically rich contextual analysis of US-based producers of athletic footwear.

3 The athletic footwear industry
3.1 Market share
A clear hierarchy in the athletic footwear industry has evolved in the United States. Nike and Reebok hold the largest market share and dominate sales, and constitute the first tier in the hierarchy. They subcontract most of their production to factories in Southeast Asia and also market the widest range of athletic footwear. Second-tier firms, which, on the basis of 1991 market share data of branded shoes, include LA Gear Inc., Converse, Keds Corporation, and Adidas AG, possess a smaller market share than the first-tier firms (figure 1). Nevertheless, these companies

![Figure 1. 1991 Market share of branded shoe sales in the United States (source: Sporting Goods Inc., 1992).](image-url)
produce a substantial annual volume of shoes in a variety of market areas. Third-tier firms—the other 18% of the US market—generate significantly smaller volumes of shoes in a narrower range, and may be characterized as niche producers, specializing in a particular type of athletic shoe. Nike serves as an exemplar of the first tier producers and Donaghu and Barff's (1990) study shed some light on the nature of its production system. One goal of this study is to complement the work of Donaghu and Barff and illuminate the production strategies and geography of smaller producers in what we are calling the second and third tiers. Converse serves to exemplify second-tier production; New Balance was chosen as illustrative of a third-tier producer.

The introduction of the McKay sewing machine in 1852 caused a revolution in production in the footwear industry in general (Hoover, 1937; Melder, 1979). Converse, a rubber company, began mass production of machine-stitched athletic shoes in 1908. Within about a decade, the company was producing the shoe it continues to be famous for—the All-Star. Without any notable change in design, over the next fifty years the All-Star became the premier athletic shoe; a status obtained, for example, by being selected as the official athletic shoe of the US Olympic basketball team in 1936 and being chosen as the official athletic shoe of twenty different US Olympic teams in 1972.

Converse's dominance of athletic footwear production eroded rapidly in the 1960s and 1970s. New players like Nike, Vans Inc., Asics Tiger Corp., Hi-Tec Sports, USA, Etonic Inc., and others emerged, marketing performance athletic footwear with new types of cushion and support mechanisms. During the 1970s, Americans began to pay more attention to health and fitness and millions began to participate in sports such as jogging and aerobics. As a result, athletic footwear producers designed and marketed new sneakers for the purpose of enhancing performance while reducing the risk of injury: the athletic footwear industry reinvented itself as one catering to a new leisure society. Consequent to the fitness boom, the general popularity of athletic footwear grew as Americans increasingly found the comfort of athletic shoes appealing and their look fashionable (Donaghu and Barff, 1990; Rikert and Christensen, 1984).

Since this point of 'takeoff' about twenty years ago, the athletic footwear industry changed dramatically. As the market expanded, not only did the number of athletic footwear companies increase, but also the number of models they produced. Today, new product lines are introduced seasonally, including 'back to school' shoes and products issued during the National Collegiate Athletic Association basketball tournament in the spring. Firms have developed athletic shoes for every purpose from weight lifting to street hiking to windsurfing to cross training. Despite this trend of specialization in athletic footwear, no more than about 20% of consumers use their performance shoes for their designated purpose. As a result, marketing has become critical in the industry (Ramirez, 1990). Nike rose to a position of dominance in the 1970s using a variety of successful marketing strategies. Reebok's rapid ascendance in the early 1980s coincided with the boom in aerobic fitness: Reebok parlayed their massive success in that segment of the market into success across the range of athletic footwear. LA Gear gained significant market presence even more recently, exploiting the fashion aspects of the industry more than Nike and Reebok ever did. The explosive growth by these three companies relegated the previous leaders in the industry (Keds, Converse, and Adidas) to a much smaller market share with an attendant smaller role in the industry as a whole.

While Nike and Reebok grew into industry leaders, some smaller companies have also gained a foothold in the athletic shoe industry. For example, New Balance focuses exclusively on particular niches of the athletic footwear market—
producing only running, walking, and tennis shoes, with running shoes accounting for about 55% of total sales. Moreover, New Balance holds a special niche in its specific markets because it provides the consumer with a considerable choice of size: for example, it remains the only athletic footwear firm that produces shoes that vary in width from AA to EEEE, and uses this to advertise itself.

3.2 Production geography

The notable shifts in market share in the athletic footwear industry were accompanied by equally dramatic locational shifts in production. Nike, Reebok, and LA Gear subcontract the lion's share of their production to manufacturers in Southeast Asia and this part of the world presently serves as the principal locus of production for the US market. Furthermore, the geography of production within Southeast Asia is hardly static. In the early 1970s, Japan served as the main center of production and is crucial to understanding the present-day international production geography.  

For the last fifteen years, manufacturers in South Korea and Taiwan have dominated the US market. Presently, the center of gravity of production is now shifting markedly toward China, Thailand, and Indonesia and, if this trend continues, these countries will be the main export platforms for Nike and Reebok in the next decade.

In contrast to the first-tier firms, many second-tier and third-tier firms, especially those that are US owned, continue to produce significant numbers of shoes at US facilities. Some interesting geographic shifts in production have taken place both at the regional and at the national scales, however. Converse began production in Malden, MA, a small city immediately north of Boston and in the heart of the then robust US footwear industry. As the All-Star’s reputation grew, Converse gradually expanded production to four other sites in New England. This pattern of development mirrored that of many nonathletic footwear manufacturers (Estall, 1966; Hoover, 1937).

The company continues to behave like many other textile and footwear producers. In the last twenty years, Converse closed the New England factories and opened three new factories: one in Lumberton, NC, one in Mexico, and the other in Puerto Rico. In 1989 the company shut down the Puerto Rican plant and consolidated eastern US production at the plant in North Carolina. New Balance’s factories are, and have been since its founding in 1906, in the Boston area and southern Maine and situated, for the most part, in inner cities (Pereira, 1992). Although these second-tier and third tier producers continue to manufacture shoes in the United States, they are not immune to the pressures to exploit the cheap labor locations in newly industrializing countries and the Third World. Both Converse and New Balance market shoes made in Southeast Asia. They both also use foreign sources to manufacture components for final assembly in the United States. Nevertheless, both companies presently pride themselves on being US companies and the bulk of their shoes are mass produced in the United States. Furthermore, the Converse All-Star is one of the simplest types of athletic shoes and yet rather than subcontracting the production of this shoe offshore, Converse issues subcontracts only for the much more complex and expensive leather and nylon shoes it markets.

4 The persistence of US athletic footwear production

4.1 Labor

The consolidation of Converse’s US production facilities in Lumberton in the early 1970s coincided with the emergence of stiff new competition from producers

Countries in Central and South America had a tradition of casual shoe and boot production and continue to do so. Asian countries have developed a tradition for both athletic and casual footwear manufacturing.
manufacturing shoes in Southeast Asia and parts of the Third World. Whereas companies such as Nike looked for inexpensive nonunionized labor locations in the global periphery, Converse sought a similar place in the periphery of the global core. North Carolina as a whole had the lowest average hourly earnings in manufacturing in the United States in the 1980s (US Bureau of Labor Statistics, 1989). Additionally, rural Lumberton is in the poorest county in North Carolina and the majority of the nonunionized 1200 workers in the Converse factory are native American women. Converse's factory thus relies on a work force in a captive labor market many would hold up as emblematic of the global ‘periphery’. That said, the wages paid in Lumberton at the Converse factory are still about thirty times greater than the pay at the footwear factory in Tangerang, Indonesia, which presently manufacturers top-of-the-line Nike Air shoes.

Despite such wage differentials between the United States and Southeast Asia, Converse remains competitive in this environment in some obvious ways. Workers in their US plant tend to be more productive because they are trained for six months and tend to stay with the factory much longer than workers in Southeast Asia. In contrast, Asian laborers—especially in Thailand, Malaysia, and China—work long hours under poor working conditions and consequently have high rates of turnover (Frank, 1981; Jenkins, 1984; Landsberg, 1979). Productivity gains have also been achieved by the process of line-balancing—the grouping of particular workers together on the basis of speed in order to maximize efficiency and minimize the lag time between specific tasks performed by workers. With this system of production, a piece-rate method of pay, typical of the footwear industry in general, is not possible. Enhanced training periods and the elimination of a piece-rate pay scales both reduce labor turnover. Workers are less likely to be discouraged in the first few weeks and months of employment when their relative skills tend to be inferior to those others who have worked longer.

New Balance also has a six-month training period for its workers. Minorities make up about 50% of the work force at New Balance, a large proportion of whom are new immigrants. Lessons are in English, Spanish, and Portuguese and New Balance claims their retention rates are very high.

Apart from relatively extensive training, New Balance uses other means to increase efficiency. The company uses modular team manufacturing (a type of flexible labor practice), wherein workers are trained to perform many different functions and can adapt to accomplish necessary tasks. Workers are arranged into teams each of which is responsible for the production of a specific model of shoe. All the tasks required in shoe assembly occur in one place on the factory floor and each team member can perform lasting, roughing, sole laying, and packing. Interteam competition is encouraged by the company. New Balance calculates that this method of organization has reduced the production time of an average size shipment of shoes from longer than a week to less than a day. This system has not only improved efficiency, it also has resulted in fewer defects and fewer returns from retailers and customers. This system of production is particularly effective for New Balance given that the company offers shoes in more widths than any other. This variety requires shorter production runs—something more easily accommodated in the relatively small factories New Balance operates than in the factories reliant on scale economies and Fordist techniques used by first-tier producers in Southeast Asia.

4.2 Shoe construction

Despite differences in productivity, factor supply considerations remain a key component in manufacturing athletic footwear and domestic producers attempt to minimize labor costs in several ways. Stitchers receive some of the highest wages
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in the factory. Labor constitutes approximately 40% of the production costs of each shoe, of which stitchers make up the majority of the cost. In other words, if stitching is minimized, then labor costs are reduced. One way to minimize stitching cost is to produce less performance-oriented, simpler athletic shoes that require fewer stitches. Such sneakers tend to be canvas shoes with basic designs that do not include padding, ankle supports, or decorative features that necessitate many stitches. Converse’s All-Star and Jack Purcell shoes typify this type of athletic footwear.

The construction of the All-Star consists of a simple, minimally reinforced canvas upper lasted to a rubber sole. There is no excess stitching on the upper as even the Converse emblem is laminated onto the canvas rather than sewn. The stitching operations consist only of the staying of the uppers and side pieces, and the binding of the quarters and tongues. (That said, even this ‘minimal’ stitching represents seventeen to nineteen separate operations per shoe.) Keds and Tretorn AB, two other producers of fashion-oriented canvas shoes, also manufacture some of their product in the United States. Vans manufacture their canvas shoes exclusively in Vista, CA.

Domestic producers have worked to design shoes that reduce labor costs in production, yet US-based manufacturers employ other tactics to remain cost competitive. Although Converse and New Balance maintain some stitchers at their domestic production facilities, (over 100 machines in the case of Converse), they conduct much of their stitching outside US borders. Converse stitches nearly all the uppers for its canvas shoes at a facility in Reynosa, Mexico. The wages paid at the Mexican facility are about one fifth those offered at the Lumberton plant. The Reynosa facility is also a maquiladora, so Converse pays no tariffs on the shoe uppers produced there. Being in northeastern Mexico, Reynosa offers a location from which Converse can transport stitched and unstitched upper back and forth relatively easily and still take advantage of significant savings in labor costs (South, 1990).

In contrast, New Balance subcontracts the stitching of some uppers to firms in South Korea. This feature of their production strategy fits well with the assertion that high-performance shoes require more stitching and thus cost more to produce, as the uppers stitched offshore tend to be parts of New Balance’s most sophisticated models. The subcontracting arrangement benefits New Balance by allowing them to take advantage of relatively inexpensive Asian labor, but also in limiting import tariffs. Tariffs are lower on parts, like uppers, than on fully assembled shoes. New Balance also subcontracts stitching to a firm in Saco, ME, which suggests that specialization subcontracting even within the USA reduces production costs significantly.

The fact that New Balance makes shoes of varying widths adds another dimension to this discussion of shoe construction and competitive position. Such flexibility is not economically feasible in many Asian plants that subcontract with first-tier producers. There, factories run on tighter schedules with one set of cutting dies, one set of lasts, and one set of outsole molds for each model. Production takes place in fast, long runs where workers cannot make adjustment for widths.

4.3 Service requirements

The athletic footwear industry, like that of footwear in general and other sectors including clothing and automobiles, now pays much more attention to lead times, delivery speed, and inventory control than ever before. As market competition and consumer demands increase, manufacturers are forced to provide more services to the retailer to maintain price stability. The nature of the service requirements frequently varies by the particular market within an industry. In the athletic footwear industry, the service requirements for high-performance athletic shoes can be met
equally well by firms manufacturing in the USA or abroad, but the service requirements for more fashion-oriented and low-performance athletic shoes can be better fulfilled in the United States. This distinction occurs in the way athletic shoes are designed and marketed. The high-performance shoe, whether or not it is used for its given purpose, is designed and sold on the basis of comfort, the attractiveness of specialty features, and the styling. Furthermore, in the United States, high-performance shoes are frequently marketed by celebrities and often sell on the basis of whose name endorses them. Ironically, the expense of high-performance shoes may also lure the customer, as expensive athletic shoes are perceived by some as status symbols. In contrast, lesser-performance athletic shoes sell on the basis of their low price, and simple aesthetic features such as color. Because these shoes are inexpensive, simple in design, and not associated with celebrities or a new technology, consumer preferences tend to change relatively rapidly.

As a result of market shifts, the impact of service requirements on the low cost segment of the athletic shoe market is turnaround time in production. As in other sectors of the economy, the retailer and manufacturers monitor the colors and styles selling the best during a particular period, and on short notice, respond to meet the demand of these trends (compare Parkinson, 1990). This need for the rapid production and distribution of a particular shoe favors manufacturing in the United States rather than subcontracting to Asia. In contrast, the market for high-cost athletic shoes does not necessitate service requirements that favor any particular manufacturing location. Rather, the requirements focus on promoting a particular shoe through endorsements and making the retailer aware of the special attributes of a shoe to be able to sell more of them. Nike and Reebok, in selecting high-profile celebrities to endorse their shoes and through consistent design innovation, essentially define trends in high-performance athletic footwear as opposed to responding to them.

Converse and New Balance serve as examples of this distinction between the high-cost and low-cost market segments. For instance, Converse has become better able to minimize inventory and accelerate turnaround times in production by rating the quality of its retailers and by using an improved communication network between the company and its retailers. The closing of the facility in Canovanas, Puerto Rico, epitomizes Converse’s effort to speed production turnaround. Despite the loss of a source that employed relatively inexpensive labor, closing this plant enhanced manufacturing and shipping efficiency through the consolidation of production and the elimination of split orders for single customers. Domestic producers can meet immediate retailer demand effectively with low inventory and a type of just-in-time production, whereas companies subcontracting offshore meet new demands for a particular style or color of shoe through an intricate system of flexible subcontracting (Donaghu and Barff, 1990) and/or having larger inventories: that is, tending more to just-in-case production (Markides and Berg, 1988).

New Balance, as a manufacturer of relatively high-cost, high performance athletic shoes, must promote the technical features of their product and educate retailers in how best to explain these features to the customer. Yet offshore producers such as Nike and Reebok undertake sales and marketing programs equally as well. In fact, because first-tier producers have considerably more capital than privately held smaller companies like New Balance, they employ more people in marketing and sales and create far more extensive programs and promotions. New Balance is left with one option: they concentrate on a select group of retailers, with whom they establish close relations. These retailers become knowledgeable about New Balance shoes and promote the company.
4.4 Real regulation

National-level regulatory policies can define the international geography of an industry and can be as powerful an influence on industrial location as is labor (Lipietz, 1986). For instance, following the example in many technologically advanced nations, development policies in Latin America (and elsewhere) have relied on protectionist measures to shield local producers from foreign competition (Gwynne, 1986, chapter 3). One prevailing wisdom behind such behavior was that tariffs and import restrictions helped nurture infant local industry and only after a country developed a mature industrial structure would a country relax these restrictions and trade more freely.

Although the major free trade agreements presently being negotiated in Europe and North America help focus attention on trade liberalization, technologically advanced nations, like many in the ‘South,’ still maintain an intricate set of restrictions that apply to a wide range of industries. In the United States, tariff restrictions (contained in the country’s ‘Harmonized Tariff Schedule’ or HTS) undergo continuous revision. For athletic footwear, the HTS currently determines to a large extent what types of shoes are profitably manufactured in the country and what types are best produced offshore. Essentially, two factors are at work. The first is the cost of a shoe or subassembled shoe component; the less expensive the shoe or component, the greater the impact of the tariff on import cost in terms of percentage increase per shoe. This occurs because tariffs frequently consist of a fixed dollar amount plus a percentage. For some components, the dollar amount alone might exceed the value of the product—see below. The second is the grading system of tariffs based on materials, construction, and final use; the greater the tariff on a particular shoe, the less profitable it becomes to manufacture that shoe offshore. The HTS is extremely complicated, occupying two large volumes which detail almost 9000 different rates. Within the footwear section of the HTS, the grading system remains complex, but for our purposes a general discussion suffices.

One of the most important issues in tariff variability is the manner in which the upper is attached to the sole of the shoe. There are three main types: nonmolded, molded, and fox-banded (where a strip of material is attached around where the sole and the upper meet in order to reinforce the bond). Nonmolded shoes carry the lowest duty, fox-banded the highest. The materials of the upper are also critical to the assessment of the tariff, which increases from synthetic leather, through genuine leather, nylon and leather combined, to textiles. Variations in sole attachment combined with variations in upper material can produce large variation in tariff from the 6% applied to men’s synthetic leather nonmolded shoes, to the 8.5% on men’s leather basketball shoes, to the 10.5% on nylon mesh running shoes to the 37.5%-plus-90 cents on canvas fox-banded shoes.

These differences in tariffs affect the geography of athletic footwear production. In the case of Converse, the geographic organization of production appears to be a direct result of the tariff system. Converse manufactures all its fox-banded canvas shoe models in the United States and subcontracts the production of its leather molded basketball shoes abroad. Furthermore, the cost of the shoe augments the duties on these two types of footwear: canvas athletic shoes are much cheaper to produce than leather ones, so a tariff represents a greater percentage of the total cost of a canvas shoe than of a leather shoe. Note also that the canvas uppers for Converse were stitched in a tariff-free maquiladora. Tariffs for imported textile uppers range from 9%-plus-30 cents to 11.2%-plus-30 cents. These tariffs are relatively large considering the importer’s cost per stitched upper is about 25 cents.

Footnote:
(2) For an account of tariff and nontariff protection of the Australian footwear, clothing, and textile industries, see Capling and Galligan (1991).
Tariffs influence the geography of New Balance's production too. The company produces its running and court shoes (footwear with mesh, leather, and nylon uppers) in Maine and Massachusetts. Leather basketball and aerobic shoe production is subcontracted to firms in South Korea and Taiwan. Tariffs on basketball shoes average 8.5%; tariffs on running shoes start at 10.5%. Recall also that New Balance import stitched upper for several models of running shoe. They do this because the tariff on complete running shoes is over 10%: no tariffs are applied to imported nylon or leather uppers alone. New Balance therefore uses subcontractors to bypass the most expensive part of athletic footwear production (stitching) without having to pay tariffs.

5 Conclusions
Offshore manufacturing occurs primarily in those industries where technological or economic considerations inhibit mechanization (Jenkins, 1984). In the athletic footwear industry, production methods have not changed significantly in decades and the major producers subcontract work to manufacturing firms in Southeast Asia. Nevertheless, Converse and New Balance, like some other companies, produce domestically, yet they take advantage of the NIDL by having one phase of their production process situated offshore instead of their complete operations. At the international scale, then, this challenges Hansen's assertion (1979) that manufacturers involved in labor-intensive industries maintain cost competitiveness by shifting their geographic location of production. At a different spatial scale, however, Converse and New Balance behave as Hansen predicts. Converse and New Balance both incorporate disenfranchised labor pools within the United States, a tendency that parallels the strategy of many other companies, in a range of industries, to relocate outside of the United States to take advantage of much lower labor rates in other parts of the world.

The fact that the geographic production strategies of Converse and New Balance adhere so closely to the structure of the US tariff system attests to the power of regulatory policy in shaping the global geography of athletic footwear production. US production of athletic footwear might not take place without the HTS. The details of the system of tariff allocation has built up over decades and the 8753 different rates in the HTS have been described as “equivalent to over 8000 different industrial policies and 8000 different entitlement programs for protected domestic industries” (Bovard, 1991, page 8). The impact of regulatory policy for athletic footwear provides support for the assertion that the analysis of industrial location and the spatial division of labor must move beyond factor prices and cost minimization (Schoenberger, 1988). As protectionist pressures increase with adverse macroeconomic conditions in an industry (Takacs, 1981), more research should explicitly account for the potential impact of tariffs and other protectionist measures on the location of industry at the global scale (compare Aw and Roberts, 1986; Chang, 1987; Winters and Brenton, 1991).

Although companies such as Converse and New Balance appear set to produce athletic footwear domestically for some time, the potential ratification of an NAFTA hardly assures the future of companies like Converse and New Balance. While the final form of the agreement has yet to be established, it is hard to speculate about its specific impact. Suffice it to say, as Mexico has established producers and a tradition of the production of nonathletic footwear, Mexican-based production at present is probably a much greater threat to the dress and casual footwear

(3) This system is even more complicated when we take into account nontariff barriers such 'voluntary export restrictions' and similar export-restraint arrangements.
industries than to US-based athletic footwear manufacturers. Furthermore, given the morphology of subcontracting between first-tier companies like Reebok and Nike and their production partners in Asia, the future of Mexican production is at least partially dependent on the spatial investment strategies of South Korean and Taiwanese investors (Donaghu and Barff, 1990). The length of time Converse and New Balance will continue to produce in the USA if NAFTA is ratified relates also to the negotiated phaseout period of tariffs and the specification of the rules of origin from Mexico. Other technologically advanced countries have enacted elaborate labor-adjustment schemes and industrial redevelopment policies in tandem with tariff and nontariff barrier reduction (compare Capling and Galligan, 1991). NAFTA pays lip service to retraining and labor displacement, but has no regionally based, comprehensive scheme to assist specific industries affected by the trade agreement, so barring any major shift in domestic policy, it may be a simple matter of time before US-based production of some types of athletic footwear becomes even more precarious. For a company like Converse, whose system of production established seems built in part around the present structure of import regulations and which has refocused production radically twice the last two decades, the elimination of the regulatory framework may make a new Mexican location irresistible.

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