

# Apple, Foxconn and China's New Working Class: Political Economy of global production

Mark Selden

## Abstract

Apple's commercial triumph rests in part on the reversal of its original business model from producing computers to outsourcing of its entire consumer electronics production to Asia. Drawing on extensive fieldwork at China's leading exporter—the Taiwanese-owned Foxconn with 1.4 million workers the largest industrial employer in the world—the power dynamics of the buyer-driven supply chain are analysed as these play out for Chinese workers. Power asymmetries, including technological control and global marketing, assure the dominance of Apple in price setting and the timing of product delivery, resulting in intense pressures and illegal overtime for workers. Responding to the high-pressure production regime, the young generation of Chinese rural migrant workers, now the heart of China's industrial working class, engages in small-scale labor struggles in the face of combined corporate, official union, and state power. But what is the nature of contemporary Chinese labor protest? China, even by official statistics, is arguably experiencing a larger number of labor conflicts than any country in the world; it also has far more union members than any country, yet it is unclear whether workers enjoy the right to organize or strike. We consider the paradox of power and powerlessness at the interface of a system in transition from predominantly state owned enterprise with lifetime employment for urban workers to one in which large areas of the state sector have been privatized and in which rural migrant workers, whose numbers are approaching 300 million but who lack fundamental labor rights, constitute the core of the contemporary working class and its most volatile segment.

This paper draws on collaborative research and writing with Jenny Chan and Pun Ngai that we hope will culminate shortly in a book. But responsibility for the writing of this paper is mine. ms

## Introduction

The magnitude of Apple's commercial success is paralleled by, and based upon, the scale of production in its supply chain factories, the most important of them located in China (Apple, 2012a: 7). As the principal manufacturer of products and components for Apple, the Taiwanese company Foxconn, whose parent corporation is the Hon Hai Precision Industry Company, employs 1.4 million workers in China alone. Just as Apple has achieved a globally dominant position as 'the world's most valuable brand' (*Brand Finance Global 500*, 2013), so too have the fortunes of Foxconn been entwined with Apple's success, facilitating its rise to become the world's largest electronics contractor (Dinges, 2010). This article explores the contradictions between capital and labour in the context of the global production chains of the consumer electronics industry. Drawing on concepts from the Global Commodity Chains and Global Value Chains framework (Gereffi and Korzeniewicz, 1994; Bair, 2005; Gereffi *et al.*, 2005), it analyses the power dynamics of the buyer-driven supply chain and the national terrains that mediate or even accentuate global pressures, and the responses of Chinese workers.

The principal focus is on labour in the electronics supply chain, including working conditions and labour as agency, consistent with recent studies of labour as the key element in global



production chains or networks (McKay, 2006; Smith *et al.*, 2006; Taylor and Bain, 2008; Webster *et al.*, 2008; Taylor *et al.*, 2013). In particular, the concentration of capital in China and the important roles played by Asian contractors open new terrains of labour struggle (Silver, 2003; Appelbaum, 2008; Silver and Zhang, 2009). This inquiry evaluates the incentives for Apple to outsource and to concentrate production in a small number of final-assembly facilities in China. It also examines the potential risks or disincentives that might compel Apple to respond more directly, or responsibly, to negative publicity surrounding labour conditions and the collective actions of workers in its supply chain as well as the changing demographics of China, specifically, the tightening of labor markets, a decade of rising worker incomes, the end of lifetime employment in state enterprises, and increasing competition between urban and rural workers under China's system of population control (*hukou*). While the specific detail is concerned with the interaction between Apple and Foxconn, the article briefly considers the relationship between other buyers (e.g. Dell) and contractors (e.g. Pegatron). Consequently, it locates emergent labour struggles more broadly in the electronics sector as a whole and in changing conditions within Chinese society.

This study draws on interviews with 14 managers and 43 workers outside of major Foxconn factory complexes, where employees were not subjected to company surveillance. The manager interviewees were responsible for production management (four persons), commodity procurement (three persons), product engineering (two persons) and human resources (five persons). All workers interviewed were rural migrants aged 16–28, who worked in assembly (semi-finished and finished products), quality testing (functionality and audiovisual appearance), metal processing and packaging. The interview data are complemented by fieldwork observations conducted between June 2010 and May 2013 in Shenzhen (Guangdong), Taiyuan (Shanxi) and Chengdu (Sichuan), major industrial centres in coastal, northern central and south-western China. New enterprise-level data provide evidence of the tensions between Foxconn and its largest corporate buyers, the working experiences and discontents of workers, and explosive episodes of labour protest. Primary evidence is supplemented by company annual reports, scholarly studies, reports from labour rights' groups and journalistic and scholarly accounts.

### **The politics of global production**

The corporate search for higher profits has been enhanced by efficient transportation and communications technologies, neoliberal trade policies and international financial services, as well as access to immigrants and surplus labour with China as the new frontier. Multinationals have reduced, if not eliminated, major barriers to capital mobility across spaces of uneven development (Harrison, 1997; Harvey, 2010). Within contemporary global supply chains, scholars (Henderson and Nadvi, 2011; Sturgeon *et al.*, 2011) highlight

the power asymmetry between buyers and contractors, in which giant retailers and branded merchandisers play decisive roles in establishing and dominating global networks of production and distribution. Under buyer-driven commodity chains, Lichtenstein (2009) and Chan (2011) find that American retailers and branded merchandisers constantly pressure factories as well as logistic service providers to lower costs and raise efficiency and speed. 'The determination of retailers to cut costs to the bare bone leaves little room for [China-based] contractors to maintain labour standards' (Bonacich and Hamilton, 2011: 225). In the electronics industry, Lüthje (2006: 17–18) observes that brand-name firms have focused on 'product development, design, and marketing', gaining a larger share of the value created than hardware manufacturing, which is mostly outsourced and performed by formally independent contractors. 'Contract manufacturers' have emerged to provide final-assembly and value-added services to technology firms and giant retailers (Starosta, 2010; Dedrick and Kraemer, 2011). What this means is the continuing hegemony of IBM, Samsung, Intel, IBM, Sony and above all Apple, not only over the workers that manufacture their products, but over a giant firm like Foxconn.

Asian contractors have been upgrading and growing in size and scale. Lee and Gereffi (2013) explain the co-evolution process that capital concentration and consolidation of branded smartphone leaders in China and other global supply bases has advanced alongside the expansion of and innovation within their large assemblers, notably Foxconn and Flextronics. Appelbaum (2008) finds that East Asian contractors, ranging from footwear and garments to electronics, have been integrating vertically in the supply chains. Giant manufacturers, rather than smaller workshops, are more able to 'respond to shortening product cycles and increasing product complexity' (Starosta, 2010: 546). Nevertheless, Yue Yuen, the world's largest footwear producer, could only 'pass on less than a third of the cost increase to its customers', including Nike, when 'costs rose sharply' (Appelbaum, 2008: 74). Intense bargaining by big buyers over costs and profits has kept a tight rein over producers, frequently slashing profit margins.

In global outsourcing, electronics suppliers are compelled to compete against each other to meet rigorous specifications of price, product quality and time-to-market, generating wage pressure as well as health and safety hazards at the factory level while shaving profit margins (Smith *et al.*, 2006; Chen, 2011). Brown (2010) argues that 'contractor factories' 'face slashed profit margins and additional costs that can be made up only by further squeezing their own labor force'. High-tech commodity producers therefore 'focus their labor concerns on cost, availability, quality, *and* controllability' to enhance profitability in the export market (McKay, 2006: 42, italics original).

Workers' adaptation, or resistance, to capitalist control has to be understood in this new context of global production, in which concentration of capital at the country, sectoral and/or firm level has reconfigured the class and labour politics. In her longitudinal survey of world labour movements since 1870, Silver (2003) documents the rise of new working class forces in sites of capital investment for the automobile industry in the twentieth century. She defines 'workplace bargaining power' as the power that 'accrues to workers who are enmeshed in tightly integrated production processes, where a localised work stoppage in a key node can cause disruptions on a much wider scale than the stoppage itself' (Wright, 2000; Silver, 2003: 13). Butollo and ten Brink (2012) and Hui and Chan (2012) reported the factory-wide strike at an auto parts supplier in Nanhai, Guangdong, which paralysed Honda's entire supply chain in South China, resulting in wage hikes and increased worker participation in trade union elections in a single foreign enterprise. Periodic and limited worker victories aside, managerial assault and/or state repression of labour protests are still commonplace.

The Chinese state at both the central and local levels collaborates with private entrepreneurial elites by providing infrastructural support and ensuring law and order,

thereby facilitating capital accumulation and economic growth. In China's capitalist transformation, on the one hand, the state has stimulated employment and industrial development through large-scale investment and opening to Chinese and international investment (Hung, 2009; Chu, 2010; Naughton, 2010). At the same time, it has severely restricted workers' self-organisation capacity and fragmented labour and citizenship rights among worker subgroups, despite ongoing pro-labour legal reforms (Solinger, 1999; 2009; Perry, 2002; Lee, 2007; 2010; Pun *et al.*, 2010; Selden and Perry, 2010). We explore the dialectics of domination and labour resistance within the political economy of global electronics production and the formation of a new working class centered on rural migrants.

### **Global production and a new working class: Japan, China, East Asia**

Between 1990 and 2006, the expansion of intra-Asia trade accounted for about 40 percent of the total increase in world trade (Arrighi, 2009: 22). China's growing dominance as the workshop of the world, the leading exporter, and world's second largest economy has reshaped regional production networks previously dominated by Japan and its former colonies Taiwan and South Korea. The rise of Japanese and East Asian capitalism in the 1950s and 1960s was integral to the Cold War geopolitical order. To contain the spread of Communism and consolidate its global economic reach, the United States provided military and economic resources to its 'client states', encouraged Taiwan and South Korea to open up their markets to Japanese and American trade and investment, and fostered the growth of a regional power centred on Japan's export-oriented industrialisation (Evans, 1995: 47–60; Selden, 1997). Japanese firms received subsidised loans to create new industries and exported finished products to Western markets. In the 1960s, Toshiba, Hitachi, Panasonic, Sanyo, Ricoh, Mitsubishi, Casio and others moved to Taiwan to start operations (Hamilton and Kao, 2011: 191–193). Similarly, Japanese trading companies began sourcing garments and footwear from Taiwan, South Korea and Hong Kong.

From the mid-1960s, IBM, the leader in business computing, shifted its labour-intensive production from the United States and Europe to Asia in order to cut labour costs. The microelectronics components of IBM System 360 computers were assembled by workers in Japan and then Taiwan because 'the cost of labour there was so low' that it was cheaper than automated production in New York (Ernst, 1997: 40). RCA, the consumer electronics giant, swiftly moved to 'take advantage of Taiwan's cheap labour and loose regulatory environment' in the export-processing zones in the late 1960s (Ku, 2006; Ross, 2006: 243–244; Chen, 2011). Electronics assembly grew rapidly in Taiwan, South Korea, Singapore and Hong Kong ('the Asian Tigers'). In these newly industrialising countries, most factory workers were young women migrants from the countryside (Ong, [1987] 2010; Deyo, 1989; Koo, 2001; McKay, 2006).

In the late 1970s, China set up special economic zones to attract foreign capital and boost exports as the means to integrate regional and global economies. The inflow of overseas Chinese capital combined with capital from Japan, the United States, Europe and other countries since the early 1990s (Huang, 2003). Hong Kong and Taiwanese entrepreneurs, ranging from low-end component processing to sophisticated microchip assembly, invested in the Pearl River Delta and the Greater Shanghai region (Leng, 2005). By the mid-1990s, Beijing's Zhongguancun Science Park and Shanghai's Zhangjiang Hi-Tech Park became prominent technology powerhouses, building on foundations of industrial development and local government support (Segal, 2003; Zhou, 2008). Over two decades, the Chinese national economy underwent a transformation from one based on heavy industry, with guaranteed lifetime employment and generous welfare for urban state sector workers, to one that relies heavily on foreign and private investments and massive use of rural migrant labourers in light of export-oriented industries (Friedman and Lee, 2010; Kuruvilla *et al.*, 2011).

Foxconn became China's leading exporter in 2001 following the country's accession to the World Trade Organization and further liberalisation of international trade. It has maintained and solidified this position ever since (Foxconn Technology Group, 2009: 6). Foxconn's expansion is intertwined with the Chinese state's market reforms, and it has followed the national trajectory from coastal to inland locations in recent years as wages rose in coastal areas. The Chinese state, with strong support from local government, encouraged foreign investment in low wage areas by initiating the 'go west' project, through which capital and human resources were channeled to central and western provinces (Goodman, 2004; McNally, 2004; Ross, 2006).

The creation of a new rural migrant-centered industrial class by domestic and transnational capital, with the collaboration of the Chinese state at all levels, coincided with the transformation of the state sector with term contracts replacing lifetime employment, layoffs, and privatization since the late nineties. Compared with older workers, this generation of employees, the vast majority being rural migrants born since the 1980s, many with high school and technical school education, has strong expectations of higher wages, better working conditions and prospects for career advancement (Pun and Lu, 2010). This is in part a result of changing demographics. Gu and Cai (2011) note that Chinese fertility is presently 1.6 children per woman, down from around 2.5 children per woman in the 1980s. In the next few years the number of young labourers aged 20 to 24 years will peak. China's 2010 Population Census, showed that the age group 0–14 comprised 16.6 percent of the total population, down 6.29 percent compared with the 2000 census data. Since the mid-2000s, labour shortages, together with state policies to raise minimum wages, have steadily driven up wages and strengthened workers' power in the market, although wage gains have been undermined by inflation and rural migrant workers are bereft of many of the welfare benefits previously enjoyed by state sector workers (Selden and Wu, 2011). Foxconn, like many other foreign-invested factories, recruits mainly teenagers and young adults to run the assembly lines. 'Over 85 percent of Foxconn's employees are rural migrant workers between 16 and 29 years old', according to a senior human resources manager in Shenzhen (*Interview*, 14 October 2011). By comparison, 2009 national data showed that 42 percent of rural migrants were between 16 and 25 years old and another 20 percent were between 26 and 30 (China's National Bureau of Statistics, 2010).

In recent years, Foxconn has adapted to local labour market changes to employ more male than female workers as fewer young women become available as a result of female infanticide in response to the one-child policy, reversing the historical pattern of a feminised workforce in electronics. According to the National Bureau of Statistics the gender imbalance reached 119:100 in 2009 before dipping slightly to just under 118:100 in 2010 and 2011 (*China Daily*, 2012). Company statistics show that male employees increased from 59 to 64 percent between 2009 and 2011 (Foxconn Technology Group, 2012e: 12). This labour is employed in a production network in which vertical integration, flexible coordination across different facilities and 24-hour continuous assembly bolster its market competitiveness (Chan, 2013).

### **The Apple–Foxconn business relationship**

Apple, Foxconn and China's workers are at the center of high-tech production, but relations among them are highly unequal. Apple Computer (later Apple Inc.) was incorporated in 1977 and is headquartered in Cupertino, California in Silicon Valley. In 1981, Apple, which had initially produced its own computers, started to contract offshore facilities in Singapore, along with onshore final-assembly contractors, to ramp up upgraded Apple II personal computers (Ernst, 1997: 49–52). From the early years, it outsourced most component processing, assembly and packaging to contractors, above all in South Korea, Japan, and China. In 1982 Apple Computer President Mike Scott commented: 'Our business was designing, educating and marketing. I thought that Apple should do the least

amount of work that it could and ... let the subcontractors have the problems' (Ernst, 1997: 49). In the 1990s, Apple, Lucent, Nortel, Alcatel and Ericsson 'sold off most, if not all, of their in-house manufacturing capacity—both at home and abroad—to a cadre of large and highly capable US-based contract manufacturers, including Solectron, Flextronics, Jabil Circuit, Celestica, and Sanmina-SCI' (Sturgeon *et al.*, 2011: 236).

If Apple's competitive advantage lies in the combination of corporate leadership, technological innovation, design and marketing (Lashinsky, 2012), its financial success is inseparable from its globally dispersed network of efficient suppliers based mainly in Asia.

However, Apple's 2012 annual report filed to the United States Securities and Exchange Commission noted a potential challenge to its lucrative business:

Substantially all of the Company's hardware products are manufactured by outsourcing partners that are located primarily in Asia. . . . Certain of these outsourcing partners are the sole-sourced suppliers of components and manufacturers for many of the Company's products (Apple, 2012a: 7).

Apple identifies the concentration of its manufacturing base 'in single locations' and in the hands of 'a small number of outsourcing partners' as a potential risk, for example, in the form of demands from its suppliers or strikes during periods of peak demand such as the release of new models or during the Christmas holiday season. However, analysts observed that, 'because of its volume'—and its ruthlessness—'Apple gets big discounts on parts, manufacturing capacity, and air freight' (Satariano and Burrows, 2011). Group interviews with two mid-level production managers at Foxconn's Shenzhen industrial town reveal that during the 2008–09 global financial crisis,

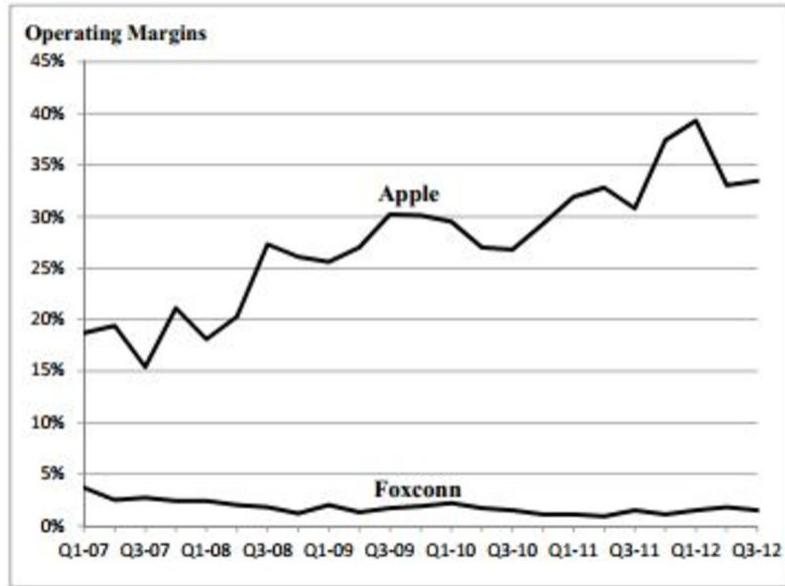
Foxconn cut prices on components, such as connectors and printed circuit boards, and assembly, to retain high-volume orders. Margins were cut. But the rock bottom line was kept, that is, Foxconn did not report a loss on the iPhone contract. [How?] By charging a premium on customized engineering service and quality assurance. The upgrading of the iPhones has in part relied on our senior product engineers' research analyses and constructive suggestions (*Interviews*, 10 November 2011; 19 November 2011).

In 2009, in the wake of recession, the Chinese government froze the minimum wage across the country at a time of layoffs. Foxconn accommodated Apple's and other corporate buyers' squeeze while continuing to reduce labour expenditures, including cuts in wages (mainly overtime premiums) and benefits (*Interview*, 9 November 2011).

Foxconn's operating margins—the proportion of revenues remaining after paying operating costs such as wages, raw materials and administrative expenses—declined steadily over six years, from 3.7 percent in the first quarter of 2007 to a mere 1.5 percent in the third quarter of 2012, even as total revenues rose in the same period with the expansion of orders (Figure 1). By contrast, Apple's operating margins peaked at 39.3 percent in early 2012 from initial levels of 18.7 percent in 2007. To be sure, Foxconn's revenues or net sales increased from US\$51.8 billion in 2007 (Foxconn Technology Group, 2009: 11) to US\$131 billion in 2012 (Foxconn Technology Group, 2013b). However, during the same period, the net sales of Apple soared from US\$24.6 billion (Apple, 2011: 24) to US\$156.5 billion (Apple, 2012a: 24).

The changes are the product of Apple's increased ability to pressure Foxconn to accept lower margins while acceding to Apple's demands for technical changes and large orders. Foxconn's margins are constantly squeezed by technology giants including, but not limited

to, Apple. As Foxconn expanded its plants in interior China (and other countries), expansion costs and rising wages further impacted revenues.



**Figure 1. Operating margins: Apple and Foxconn compared, 2007–2012.** Data from January 2007 to September 2012 were non-consolidated results for Foxconn. Starting from Q4 2012, Foxconn announced consolidated results. *Source:* From Q1 2007 to Q3 2011, see *Bloomberg* (2012); From Q4 2011 to Q3 2012, see Wikinvest (2013) for Apple; From Q4 2011 to Q3 2012, see Foxconn Technology Group (2012a; 2012b; 2012c; 2012d).

Twelve major business groups within Foxconn compete on 'speed, quality, engineering service, efficiency and added value' to maximise profits (Foxconn Technology Group, 2009: 8). 'Two "Apple business groups," iDPBG [integrated Digital Product Business Group] and iDSBG [innovation Digital System Business

Group], are rising stars in the past few years', stated a Foxconn Chengdu production manager,

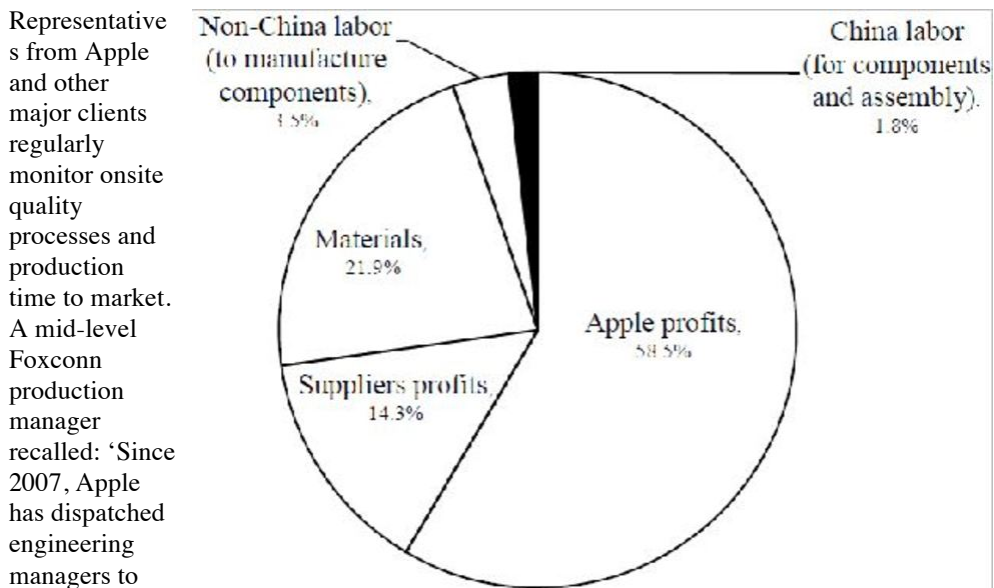
iDPBG was established in 2002. At the beginning, it was only a small business group handling Apple's contracts. We assembled Macs and shipped them to Apple retail stores in the United States and elsewhere. Later we had more orders of Macs and iPods from Apple. In 2007, we began to assemble the first-generation iPhone. From 2010, we also packed iPads, at the Shenzhen and new Chengdu facilities (*Interview*, 6 March 2011).

iDPBG currently generates 20 to 25 percent of Foxconn's revenue. Foxconn established iDSBG in 2010 when the company won the iPad contracts. iDSBG primarily manufactures Macs and iPads, contributing 15 to 20 percent of company revenues. 'Approximately 40 percent of Foxconn revenues are from Apple, its biggest client' (*Interview*, 10 March 2011).

Dedrick and Kraemer (2011: 303) find that computer companies currently 'engage in long-term relationships' with their main contractors but sometimes shift contracts to those who will offer better quality, lower cost or greater capabilities. Foxconn's vice president Cheng Tianzong told journalists, 'Some major clients are very concerned with the Foxconn employee suicides, but many of them are our long-term partners. So it doesn't affect Foxconn's orders' (quoted in Zhao, 2010). However, soon after the spate of suicides at Foxconn's facilities in spring 2010, Apple did 'shift some iPhone and iPad orders to

Pegatron to diversify risks', according to a Foxconn commodity manager at Chengdu's factory (*Interview*, 13 March 2011). Apple, while distancing itself from any responsibility for the policies of its providers, tightened controls over Foxconn by splitting contracts with another Taiwanese-owned firm, Pegatron. This diversification demonstrates the power asymmetries between Apple and its manufacturers as Foxconn and others seek to retain market position as producers of the iPhone and iPad.

Figure 2 shows the breakdown of value for the iPhone between Apple and its suppliers. Apple's strength is well illustrated by its ability to capture an extraordinary 58.5 percent of the value of the iPhone despite the fact that manufacture of the product is entirely outsourced. Particularly notable is that labour costs in China account for the smallest share, only 1.8 percent or nearly US\$10, of the US\$549 retail price of the iPhone in 2011. This ineluctable drive to reduce costs and maximise profits is the source of the pressure placed on Chinese workers employed by Foxconn, many of them producing signature Apple products. While Apple and Foxconn together squeeze Chinese workers, frequently demanding 12-hour working days to meet demand in peak periods, the costs of Chinese labour in processing and assembly are virtually invisible in Apple's balance sheets. Other major component providers (such as Samsung and LG) captured slightly over 14 percent of the value of the iPhone. The cost of raw materials was just over one-fifth of the total value (21.9 percent).



**Figure 2. Distribution of value for the iPhone, 2011** Source: Adapted from Kraemer *et al.* (2011: 5).

Representatives from Apple and other major clients regularly monitor onsite quality processes and production time to market. A mid-level Foxconn production manager recalled: 'Since 2007, Apple has dispatched engineering managers to work at Foxconn's Longhua and Guanlan factories in Shenzhen to oversee our product development and assembly work' (*Interview*, 29 November 2011). A Foxconn human resources manager provided this eyewitness account of Apple's hands-on supervision:

When Apple CEO Steve Jobs decided to revamp the screen to strengthen the glass on iPhone four weeks before it was scheduled to shelf in stores in June



2007, it required an assembly overhaul and production speedup in the Longhua facility in Shenzhen. Naturally, Apple's supplier code on worker safety and workplace standards and China's labour laws are all put aside. In July 2009, this produced a suicide. When Sun Danyong, 25 years old, was held responsible for losing one of the iPhone 4 prototypes, he jumped from the 12th floor to his death. Not only the short delivery deadline but also Apple's secretive culture and business approach, centered on creating great surprise in the market and thereby adding sales value to its products, have sent extreme pressure all the way down to its Chinese suppliers and workers (*Interview*, 7 March 2011).

Attention to procurement and production detail, including last-minute changes of product design and tight control over prices, assures super-profits for Apple. Tracking demand worldwide, Apple adjusts production forecasts on a daily basis. As Apple CEO Tim Cook puts it, 'Nobody wants to buy sour milk' (quoted in Satariano and Burrows, 2011); 'Inventory ... is fundamentally evil. You want to manage it like you're in the dairy business: if it gets past its freshness date, you have a problem' (quoted in Lashinsky, 2012: 95).

Frequently, excessive and illegal overtime at final-assemblers and other suppliers is required to meet work schedules. Two major sources of production-time pressure commonly felt by factory and logistic workers are well documented by Apple. The Company has historically experienced higher net sales in its first fiscal quarter [from September to December] due in part to holiday seasonal demand. Actual and anticipated timing of new product launches by the Company can also significantly impact the level of net sales in any particular quarter (Apple, 2012a: 8).

In a rare moment of truth, Foxconn CEO's Special Assistant Louis Woo, explained in an April 2012 American media program the production pressures that Apple or Dell apply:

The overtime problem—when a company like Apple or Dell needs to ramp up production by 20 percent for a new product launch, Foxconn has two choices: hire more workers or give the workers you already have more hours. When demand is very high, it's very difficult to suddenly hire 20 percent more people. Especially when you have a million workers—that would mean hiring 200,000 people at once (quoted in *Marketplace*, 2012).

The dominance of giant technology firms, notably Apple, in terms of price setting, onsite production process surveillance, and timing of product delivery, has profound consequences for labour processes. Foxconn's competitive advantage, the basis for securing contracts with Apple and other multinationals, hinges on its ability to maintain flexibility. The mega factory has to repeatedly reorganise its production lines, staffing and logistics to be demand-responsive. Whereas transnational suppliers, such as Foxconn, have grown rapidly through 'internal development and acquisition' (Sturgeon *et al.*, 2011: 235), their drive for profits and higher positions along the global value chains tend to go with the same pattern: the emergence of powerful 'market makers', or leading firms, in their supply networks (Hamilton *et al.*, 2011). The results in competitive manufacturing have been coercive factory conditions and, contentious labour relations, issues to which we now turn.

### **Chinese workers' collective actions**

Foxconn not only has factory complexes in Shenzhen and all four major Chinese municipalities of Beijing, Shanghai, Tianjin and Chongqing, but in 15 provinces throughout the country (Figure 3). Foxconn Taiyuan in north China's Shanxi province, with 80,000 workers, specialises in metal processing and assembly. It manufactures iPhone casings and other components in the upstream supply chain and sends the semi-finished products to a

larger Foxconn Zhengzhou complex in adjacent Henan province for final assembly. In 2012, the subtle shift in production requirements from iPhone 4S to iPhone 5 and the speedup to meet Apple's delivery time placed Foxconn and its workers under intense pressure. However, this tightly integrated production regime simultaneously provided workers with leverage, enabling them to demonstrate their collective strength in a number of small but significant actions. (Rather than discuss the well-known events centered on the multiple suicides at Foxconn in 2010, discussion centers on lesser known but significant worker actions that followed.)



Foxconn  
Taiyuan  
erupted in  
factory-wide  
protests on  
September 23–  
24, 2012. ‘At  
about 11 p.m.  
on 23  
September  
2012’, a 20-  
year-old  
worker  
reported, ‘a  
number of  
security  
officers  
severely beat  
two workers  
for failing to  
show their staff  
IDs. They  
kicked them  
until they fell’  
(*Interview*, 26  
September  
2012). At the  
male  
dormitory,  
workers

**Figure 3. Foxconn locations in greater China. Source: Foxconn Technology Group (2013a).**

passing by were alerted by screams in the darkness. An eyewitness said, ‘We cursed the security officers and demanded that they stop. There were more than thirty of us so they ran away’ (*Interview*, 27 September 2012).

Soon after a squad of fifty company security officers marched to the dormitory, enraging the assembled workers. At midnight, tens of thousands of workers smashed security offices, production facilities, shuttle buses, motorbikes, cars, shops and canteens in the factory complex. Others broke windows, demolished company fences and pillaged factory supermarkets and convenience stores. Workers also overturned police cars and set them ablaze. The company security chief used a patrol car public address system to order the workers to end their ‘illegal activities’. The situation was getting out of control as more workers joined the roaring crowd.

By 3 a.m., senior government officials, riot police, special security forces and medical staff were stationed at the factory. Workers used their cell phones to send images to local media outlets in real time. Over the next two hours, the police contained the unrest, detained the

most defiant workers and took control of the factory gates. The factory announced a special day off for all production workers, on September 24, Monday. A 21-year-old worker recalled:

We demanded higher pay and better treatment. In my view, the protest was caused by very unsatisfactory working conditions. It was merely sparked by the abuses of the security guards. Over these past two months, we couldn't even get paid leave when we were sick (*Interview*, 28 September 2012).

With global consumer demand for the new iPhone 5 at a peak, shipping delays were a source of concern for Apple. On September 21, 2012 (eight months after iPhone 4S's China release), Apple launched the iPhone 5 and sold over five million units during that weekend. The ever-tightening shorter production cycle pressurises workers and managerial staff, so that Foxconn Taiyuan workers could not even take one day off in a week, and the sick were compelled to continue to work. At the same time, with Apple demanding that Foxconn fulfill impossible targets, the power of workers to display their power peaked.

As justification for its use of paramilitary force, Foxconn blamed the workers, alleging that they were fighting among themselves. The company statement read:

A personal dispute between several employees escalated into an incident involving some 2,000 workers. The cause of this dispute is under investigation by local authorities and we are working closely with them in this process, but it appears not to have been work-related (quoted in Nunns, 2012).

The underlying cause was an oppressive management regime that drove workers to meet the extreme production demands (Ruggie, 2012). The heart of the problem created by Foxconn, Apple and many other multinational corporations is



**A 2012 walkout at Foxconn briefly halted production of the iPhone 5**

the direct relationship between companies' purchasing practices and labour problems in the workplace. 'On the factory floor', an 18-year-old worker informed us, 'the metal-processing section supervisor's attitude is very bad ... We're coerced to meet the extremely tight production deadline' (*Interview*, 29 September 2012). Foxconn leaders' investigation of the 'personal dispute' necessitated turning their eyes away from the systemic problem: shop floor conditions.

Less than two weeks later, on October 5, 2012, over 3,000 Foxconn Zhengzhou workers protested collectively against unreasonably strict control over product quality on the line at Zone K. From late September to early October 2012, consumers in the United States and elsewhere complained about scratches on the casing of a particular batch of the new iPhone 5, leading to product quality control investigations of final assembly at the 160,000-strong Foxconn Zhengzhou plant. According to testimony, new quality standards for not exceeding a 0.02 mm appearance defect in iPhone 5 contributed to workers suffering eye strain and headache. When workers were penalised for not meeting the new standards, quarrels erupted between workers and quality control team leaders, resulting in group fighting and injuries.

Production managers yelled at the assembly-line workers and threatened to fire them if they did not 'cooperate and concentrate at work'. Li Meixia (a pseudonym) posted on her Sina microblog that she and her co-workers were angered and walked out of the workshop. In response, another worker posted a statement, which was quickly removed:

We had no holidays during the National Day celebrations and now we're forced to fix the defective products. The new requirement of a precision level [of iPhone 5 screen structure] measured in two-hundredths of a millimeter cannot be detected by human eyes. We use microscopes to check the product appearance. It's impossibly strict.

In the case-manufacturing process, workers were also instructed to use protective cases to prevent scratches of the ultra-thin iPhone 5, and close attention to the most minute detail at the fast pace was and remains a major source of work stress, according to testimony. The strike at one workshop eventually paralysed dozens of production lines in Zones K and L. Senior managers threatened to fire the leading strikers and the quality control team leaders, and demanded that night-shift workers adhere to stringent quality standards. The brief strike did not win workers' demand for reasonable rest. It did send a powerful signal to Apple, Foxconn and the company union.

Foxconn workers at the Taiyuan and Zhengzhou factories were acquiring public communication skills and raising their consciousness about the need for joint struggle to achieve specific demands including reasonable working hours, decent treatment by supervisors, and wage hikes. Faced with the combination of government, company and company union, however, they could not organise across factories or sustain protest. Workers Soon after the September 2012 protest, a 21-year-old high-school graduate with two years' work experience at Foxconn Taiyuan wrote an open letter to Foxconn CEO Terry Gou and circulated it on weblogs:

A Letter to Foxconn CEO, Terry Gou

If you don't wish to again be loudly woken at night from deep sleep,

If you don't wish to constantly rush about again by airplane,

If you don't wish to again be investigated by the Fair Labor Association,

If you don't wish your company to again be called by people a sweatshop,

Please use the last bit of a humanitarian eye to observe us.

Please allow us the last bit of human self-esteem.

Don't let your hired ruffians hunt for our bodies and belongings,

Don't let your hired ruffians harass female workers,

Don't let your lackeys take every worker for the enemy,

Don't arbitrarily berate or, worse, beat workers for one little error.

In the densely populated factory-cum-dormitory setting, rural migrant workers as young as 16 or 17 years old, spoke of their involvement in labour protests (Pun and Chan, 2013). If the language of strikes and worker participation is new for some, it is not for others. The testimony of a teenage female worker at Foxconn's Shenzhen Longhua plant is illustrative:

I didn't know that it was a strike. One day my co-workers stopped work, ran out of the workshop and assembled on the grounds. I followed them. They had disputes over the under-reporting of overtime hours and the resulting underpayment of overtime wages. After half a day, the human resources managers agreed to look into the problems and promised to pay the back wages if there was a company mistake. At night, in the dormitory, our 'big sister' explained to me that I had participated in a strike (*Interview*, 15 October 2011)!

The wildcat strikes and labour protests at Foxconn form part of a broader spectrum of labour action throughout China over recent decades (Pringle, 2013). The Taiyuan worker's open letter to Foxconn CEO Terry Gou closes with the following paragraph:

You should understand that working in your factories,

workers live on the lowest level of Chinese society,

tolerating the highest work intensity,

earning the lowest pay,

accepting the strictest regulation,

and enduring discrimination everywhere.

Even though you are my boss, and I am a worker:

I have the right to speak to you on an equal footing.

The sense in which 'right' is used is narrowly confined to that of legal right. Chinese workers, facing pressure from the company, the local state and their own union, are demanding to bargain with their employers 'on an equal footing'. They are calling for dignified treatment and respect at work and for a living wage.

## **Conclusion**

In the twenty-first century, consumer electronics has emerged as one of the leading and lucrative global industries, and Chinese labour is central to its global reach. An ever quicker and newer product release, accompanied by shorter product finishing time and an expansive global market in which China will soon be the leader, places new pressures on outsourced

factory workers in the Apple production network. At the workplace level, very short delivery times imposed by Foxconn in response to the demands of Apple and other multinational corporations make it difficult for suppliers to comply with legal overtime limits. Price pressures lead firms to compromise workers' health and safety and to turn to such options as illegal use of student interns to maintain flexibility and avoid paying a decent wage. The absence of fundamental labour rights within the global production regime driven by Apple and its principal supplier Foxconn confronts Chinese rural migrant workers, who form the core of the new industrial working class.

The integration of Asian manufacturers in global and regional production networks, tight delivery schedules for coveted products, and the growing shortage of young workers as a result of China's demographic changes have enhanced workers' bargaining power. The ascent of 'global neoliberal capitalism' has created 'opportunities for counter-organization' (Evans, 2010: 352), as attested not only by the rise of transnational labour movements and global anti-sweatshop campaigns but by growing labor unrest in China. Increasingly aware of the opportunities presented by demands from Apple and other technology giants to meet quotas for new models and holiday season purchases, on a number of occasions workers have come together at the dormitory, workshop or factory level to voice demands. Internet and social networking technology enables workers to communicate among themselves and to disseminate open letters and urgent appeals for support (Qiu, 2009). On occasion their demands have produced victories secured with the support of local government.

Yet the limits of Chinese worker actions in general, those centered in rural migrant workers in particular, seem clear. Under China's hukou system of population registration and control, under the commune system workers were bound to the land and could not leave their villages. Since the 1980s with state encouragement, rural migrants have become the bulwark of export-oriented development. A second generation of rural migrant workers, many with more education and urban smarts, has higher aspirations and a keener awareness of legal rights. Moreover, the local state is frequently prepared to tolerate, and at times support specific worker actions that expose corporate abuses such as illegal overtime, the super-exploitation of student interns, and even local demands for higher wages. Yet the primary role of the state continues to be its cooperation with capital, especially giant firms like Foxconn, which assures that labor unions remain company unions that routinely side with management in labor disputes, and that the outburst of worker anger at a single factory does not spread from a point to a plane, such as organizing all Foxconn workers to create a union responsive to worker needs, or, for that matter, to organize the electronic industry. To date, worker demands are notable for their specificity, that is, targeting an abuse such as failure to pay wages or overtime, or dangerous conditions in the workplace. This means that even victories, however important to the workers involved, offer no significant long-term or structural challenge to the dominance of the alliance of the local state with domestic and international capital that has transformed the relatively egalitarian character of income distribution in recent decades (Lee 2016).

A historical counterweight to global capital, West and East, exists in workers' and civil society's response. Under public pressure, in February 2013, Foxconn proclaimed that workers would hold direct elections for union representatives. If implemented fairly, and if the unions are organised to uphold the rights enshrined in the Chinese Trade Union Law, Labour Contract Law and the international labour conventions, this could impact upon the balance of power between management and workers. Yet in fact, the company union representing all Foxconn workers remains precisely that, led as it is by the assistant to the company president. The result is that the vast labour force at Foxconn and many workplaces is striving to expand social and economic rights, bypassing the state- and management-controlled unions while choosing localized, short-lived protest actions. Even in the case of local victories, the Chinese state's priority on maintaining "stability" is assured. At the same time, there is some recognition at the higher levels of the Chinese state

that it is essential to raise domestic consumption and hence living standards, and to overcome the continued growth in income and rights inequality of which the rural migrant workers are emblematic, a product in part that is a response to the struggle of aggrieved workers and farmers (Hung, 2009; Carrillo and Goodman, 2012). Apple and Foxconn now find their effective public relations efforts challenged by workers in ways that challenge their corporate images and symbolic capital, hence requiring repeated lip service in support of progressive labour policy reforms. The critical question remains whether the new generation of Chinese workers gains deeper consciousness of worker rights and aspirations at a time when global labor movements in general are in disarray. If the answer is positive, they will eventually succeed in building autonomous unions and worker organisations, and their struggles will shape the future of labour and democracy not only in China but throughout the world.

## References

- Appelbaum, R.P. (2008), 'Giant Transnational Contractors in East Asia: Emergent Trends in Global Supply Chain', *Competition & Change* 12, 1, 69–87.
- Apple (2011), '[Annual Report for the Fiscal Year Ended September 24, 2011.](#)'
- Apple (2012a), '[Annual Report for the Fiscal Year Ended September 29, 2012.](#)'
- Apple (2012b), '[iPhone 5 First Weekend Sales Top Five Million.](#)' 24 September.
- Apple (2013a), '[Our Suppliers.](#)'
- Apple (2013b), '[Apple and Procurement.](#)'
- Arrighi, G. (2009), 'China's Market Economy in the Long Run', in H. Hung (ed.), *China and the Transformation of Global Capitalism* (Baltimore, MD: The Johns Hopkins University Press), pp. 22–49.
- Bair, J. (2005), 'Global Capitalism and Commodity Chains: Looking Back, Going Forward', *Competition & Change* 9, 2, 153–180.
- Bloomberg (2012), '[Apple Profit Margins Rise at Foxconn's Expense.](#)' 5 January. (accessed 6 January 2012).
- Bonacich, E. and G.G. Hamilton (2011), 'Global Logistics, Global Labor', in G.G. Hamilton, M. Petrovic and B. Senauer (eds), *The Market Makers: How Retailers are Reshaping the Global Economy* (Oxford: Oxford University Press), pp. 211–230.
- Brand Finance Global 500 (2013), '[Apple Pips Samsung but Ferrari World's Most Powerful Brand.](#)' 18 February.
- Brown, G. (2010), '[Global Electronics Factories in Spotlight](#)', *Occupational Health and Safety*. 4 August.
- Butollo, F. and T. ten Brink (2012), 'Challenging the Atomization of Discontent: Patterns of Migrant-Worker Protest in China during the Series of Strikes in 2010', *Critical Asian Studies* 44, 3, 419–440.

Carrillo, B. and D.S.G. Goodman (eds) (2012), *China's Peasants and Workers: Changing Class Identities* (Cheltenham: Edward Elgar).

Chan, A. (ed.) (2011), *Walmart in China* (Ithaca, NY: Cornell University Press).

Chan, C. and Pun N. (2009), "The Making of a New Working-Class? A Study of Collective Action of Migrant Workers in South China" *The China Quarterly* no. 198, 287-303.

Chan, J. (2013), 'A Suicide Survivor: The Life of a Chinese Worker', *New Technology, Worker and Employment* 28, 2, 84–99.

Chan, J. Pun, N. and Selden, M. (2015), "Interns or Workers: China's Student Labor Regime" *The Asia-Pacific Journal*, 13, 36, 1, September 7.

Chen, H.-H. (2011), 'Professionals, Students, and Activists in Taiwan Mobilize for An Unprecedented Collective-Action Lawsuit against A Former Top American Electronics Company', *East Asian Science, Technology and Society* 5, 4, 555–565.

*China Daily* (2012), '[China's Gender Imbalance Still Grave.](#)' 29 March.

China's National Bureau of Statistics (2010), '[Monitoring and Investigation Report on the Rural Migrant Workers in 2009.](#)' (In Chinese).

Chu, Y. (ed.) (2010), *Chinese Capitalisms: Historical Emergence and Political Implications* (Basingstoke: Palgrave Macmillan).

Dedrick, J. and K.L. Kraemer (2011), 'Market Making in the Personal Computer Industry', in G.G. Hamilton, M. Petrovic and B. Senauer (eds), *The Market Makers: How Retailers are Reshaping the Global Economy* (Oxford: Oxford University Press), pp. 291–310.

Deyo, F.C. (1989), *Beneath the Miracle: Labor Subordination in the New Asian Industrialism* (Berkeley, CA: University of California Press).

Dinges, T. (2010), '[Foxconn Rides Partnership with Apple to Take 50 Percent of EMS \[Electronic Manufacturing Services\] Market in 2011.](#)' iSuppli.

Ernst, D. (1997), '[From Partial to Systemic Globalization: International Production Networks in the Electronics Industry.](#)' Berkeley Roundtable on the International Economy Working Paper 98.

Evans, P. (1995), *Embedded Autonomy: States and Industrial Transformation*. Princeton (Princeton, NJ: Princeton University Press).

Evans, P. (2010), '[Is It Labor's Turn to Globalize? Twenty-First Century Opportunities and Strategic Responses](#)', *Global Labour Journal* 1, 3, 352–379.

Foxconn Technology Group (2009), '[2008 Corporate Social and Environmental Responsibility Annual Report.](#)'

Foxconn Technology Group (2012a), 'Non-Consolidated Results for the Twelve Month Periods Ended December 31, 2011.' 27 March. (Printed version).



Foxconn Technology Group (2012b), 'Non-Consolidated Results for the Three Month Periods Ended March 31, 2012.' 14 May. (Printed version).

Foxconn Technology Group (2012c), 'Non-Consolidated Results for the Six Month Periods Ended June 30, 2012.' 31 August. (Printed version).

Foxconn Technology Group (2012d), 'Non-Consolidated Results for the Nine Month Periods Ended September 30, 2012.' 30 October. (Printed version).

Foxconn Technology Group (2012e), '[2011 Corporate Social and Environmental Responsibility Annual Report](#).'

Foxconn Technology Group (2013a), '[Global Distribution](#).'

Foxconn Technology Group (2013b), 'Consolidated Results for the Twelve Month Periods Ended December 31, 2012.' 25 March. (Printed version).

Frazier, M. (2014), "State Schemes or Safety Nets? China's Push for Universal Coverage", *Daedalus* 143, 2, 69-80.

Friedman, E. and C.K. Lee (2010), 'Remaking the World of Chinese Labour: A 30-Year Retrospective', *British Journal of Industrial Relations* 48, 3, 507–533.

Gereffi, G., J. Humphrey and T. Sturgeon (2005), 'The Governance of Global Value Chains', *Review of International Political Economy* 12, 1, 78–104.

Gereffi, G. and M. Korzeniewicz (eds) (1994), *Commodity Chains and Global Capitalism* (Westport, CT: Praeger).

Goodman, D.S.G. (2004), 'The Campaign to "Open Up the West": National, Provincial-Level and Local Perspectives', *The China Quarterly* 178, June, 317–334.

Gu, B. and Y. Cai (2011), '[Fertility Prospects in China](#).' United Nations Population Division, Expert Paper No. 2011/14.

Hamilton, G.G. and C. Kao (2011), 'The Asia Miracle and the Rise of Demand-Responsive Economies', in G.G. Hamilton, M. Petrovic and B. Senauer (eds), *The Market Makers: How Retailers are Reshaping the Global Economy* (Oxford: Oxford University Press), pp. 181–210.

Hamilton, G.G., M. Petrovic and B. Senauer (eds) (2011), *The Market Makers: How Retailers are Reshaping the Global Economy* (Oxford: Oxford University Press).

Harrison, B. (1997), *Lean and Mean: The Changing Landscape of Corporate Power in the Age of Flexibility* (New York: The Guilford Press).

Harvey, D. (2010), *The Enigma of Capital and the Crises of Capitalism* (New York: Oxford University Press).

Henderson, J. and K. Nadvi (2011), 'Greater China, the Challenges of Global Production Networks and the Dynamics of Transformation', *Global Networks* 11, 3, 285–297.

- Huang, Y. (2003), *Selling China: Foreign Direct Investment during the Reform Era* (Cambridge: Cambridge University Press).
- Hui, E.S. and C.K. Chan (2012), 'The Prospect of Trade Union Reform in China: The Cases of Wal-Mart and Honda', in R. Traub-Merz and K. Ngok (eds), [\*Industrial Democracy in China: With Additional Studies on Germany, South-Korea and Vietnam\*](#) (Beijing: China Social Sciences Press), pp. 103–120.
- Hung, H. (ed.) (2009), *China and the Transformation of Global Capitalism* (Baltimore, MD: The Johns Hopkins University Press).
- Koo, H. (2001), *Korean Workers: The Culture and Politics of Class Formation* (Ithaca, NY: Cornell University Press).
- Kraemer, K.L., G. Linden and J. Dedrick (2011), '[Capturing Value in Global Networks: Apple's iPad and iPhone.](#)'
- Ku, Y. (2006), 'Human Lives Valued Less Than Dirt: Former RCA Workers Contaminated by Pollution Fighting Worldwide for Justice (Taiwan)', in T. Smith, D.A. Sonnenfeld and D.N. Pellow (eds), *Challenging the Chip: Labor Rights and Environmental Justice in the Global Electronics Industry* (Philadelphia, PA: Temple University Press), pp. 181–190.
- Kuruvilla, S., C.K. Lee and M.E. Gallagher (eds) (2011), *From Iron Rice Bowl to Informalization: Markets, Workers, and the State in a Changing China* (Ithaca, NY: Cornell University Press).
- Lashinsky, A. (2012), *Inside Apple: The Secrets Behind the Past and Future Success of Steve Jobs's Iconic Brand* (London: John Murray).
- Lee, C.K. (2007), *Against the Law: Labor Protests in China's Rustbelt and Sunbelt* (Berkeley, CA: University of California Press).
- Lee, C.K. (2010), 'Pathways of Labor Activism', in E.J. Perry and M. Selden (eds.), *Chinese Society: Change, Conflict and Resistance*, 3rd edn (London: Routledge), pp. 57–79.
- Lee, C.K. (forthcoming 2016), 'Precarization or Empowerment? Reflections on Recent Labor Unrest in China', *Journal of Asian Studies*.
- Lee, J. and G. Gereffi (2013), '[The Co-Evolution of Concentration in Mobile Phone Value Chains and its Impact on Social Upgrading in Developing Countries.](#)' Capturing the Gains Working Paper 25.
- Leng, T.-K. (2005), 'State and Business in the Era of Globalization: The Case of Cross-Strait Linkages in the Computer Industry', *The China Journal* 53, January, 63–79.
- Lichtenstein, N. (2009), *The Retail Revolution: How Wal-Mart Created a Brave New World of Business* (New York: Metropolitan Books).
- Lüthje, B. (2006), 'The Changing Map of Global Electronics : *Networks of Mass Production in the New Economy*', in T. Smith, D.A. Sonnenfeld and D.N. Pellow (eds), *Challenging the Chip : Labor Rights and Environmental Justice in the Global Electronics Industry* (Philadelphia, PA: Temple University Press), pp. 17–30.

*Marketplace* (American Public Media) (2012), '[The People Behind your iPad.](#)' 12 April.

Marx, K. and F. Engels ([1848] 2002), *The Communist Manifesto* (London: Penguin Classics).

McKay, S.C. (2006), *Satanic Mills Or Silicon Islands? The Politics of High-Tech Production in the Philippines* (Ithaca, NY: Cornell University Press).

McNally, C.A. (2004), 'Sichuan: Driving Capitalist Development Westward', *The China Quarterly* 178, June, 426–447.

Naughton, B. (2010), 'China's Distinctive System: Can It Be A Model for Others?', *Journal of Contemporary China* 19, 65, 437–460.

Nunns, C. (2012), '[Apple Profits Unharmd by Foxconn Factory Riots](#)', *GlobalPost*. 26 September.

Ong, A. ([1987] 2010), *Spirits of Resistance and Capitalist Discipline: Factory Women in Malaysia*, 2nd edn (Albany, NY: State University of New York).

Perry, E.J. (2002), *Challenging the Mandate of Heaven: Social Protest and State Power in China* (Armonk, NY: M. E. Sharpe).

Pringle, T. (2013), 'Reflections on Labor in China: From a Moment to a Movement', *The South Atlantic Quarterly* 112, 1, 191–202.

Pun, N., C.K. Chan and J. Chan (2010), 'The Role of the State, Labour Policy and Migrant Workers' Struggles in Globalized China', *Global Labour Journal* 1, 1, 132–151.

Pun, N. and J. Chan (2013), 'The Spatial Politics of Labor in China: Life, Labor, and a New Generation of Migrant Workers', *The South Atlantic Quarterly* 112, 1, 179–190.

Pun, N. and H. Lu (2010), 'Unfinished Proletarianization: Self, Anger and Class Action of the Second Generation of Peasant-Workers in Reform China', *Modern China* 36, 5, 493–519.

Qiu, J.L. (2009), *Working-Class Network Society: Communication Technology and the Information Have-Less in China* (Cambridge: MIT Press).

Ross, A. (2006), *Fast Boat to China: Corporate Flight and the Consequences of Free Trade – Lessons from Shanghai* (New York: Pantheon Books).

Ruggie, J.G. (2012), '[Working Conditions at Apple's Overseas Factories](#)', *The New York Times*. 4 April.

Satariano, A. and P. Burrows (2011), '[Apple's Supply-Chain Secret?](#)' *Hoard Lasers, Bloomberg Businessweek*. 3 November.

Segal, A. (2003), *Digital Dragon: High-Technology Enterprises in China* (Ithaca, NY: Cornell University Press).

Selden, M. (1997), 'China, Japan, and the Regional Political Economy of East Asia, 1945–1995', in P.J. Katzenstein and T. Shiraishi (eds), *Network Power: Japan and Asia* (Ithaca, NY: Cornell University Press), pp. 306–340.

Selden, M. and E.J. Perry (2010), 'Introduction', in E.J. Perry and M. Selden (eds), *Chinese Society: Change, Conflict and Resistance*, 3rd edn (London: Routledge), pp. 1–30.

Selden, M. and J. Wu (2011), '[The Chinese State, Incomplete Proletarianization and Structures of Inequality in Two Epochs](#)', *The Asia-Pacific Journal* 9, 5, 1–35.

Silver, B.J. (2003), *Forces of Labor: Workers' Movements and Globalization since 1870* (Cambridge: Cambridge University Press).

Silver, B.J. and L. Zhang (2009), 'China as an Emerging Epicenter of World Labour Unrest', in H. Hung (ed.), *China and the Transformation of Global Capitalism* (Baltimore, MD: The Johns Hopkins University Press), pp. 174–187.

Smith, T., D.A. Sonnenfeld and D.N. Pellow (eds) (2006), *Challenging the Chip: Labor Rights and Environmental Justice in the Global Electronics Industry* (Philadelphia, PA: Temple University Press).

Solinger, D.J. (1999), *Contesting Citizenship in Urban China: Peasant Migrants, the State, and the Logic of the Market* (Berkeley, CA: University of California Press).

Solinger, D.J. (2009), *States' Gains, Labor's Losses: China, France, and Mexico Choose Global Liaisons, 1980-2000* (Ithaca, NY: Cornell University Press).

Starosta, G. (2010), 'The Outsourcing of Manufacturing and the Rise of Giant Global Contractors: A Marxian Approach to Some Recent Transformations of Global Value Chains', *New Political Economy* 15, 4, 543–563.

Sturgeon, T., J. Humphrey and G. Gereffi (2011), 'Making the Global Supply Base', in G.G. Hamilton, M. Petrovic and B. Senauer (eds), *The Market Makers: How Retailers are Reshaping the Global Economy* (Oxford: Oxford University Press), pp. 231–254.

Taylor, P. and P. Bain (2008), 'United by A Common Language?', *Antipode: A Radical Journal of Geography* 40, 1, 131–154.

Taylor, P., K. Newsome and A. Rainnie (2013), 'Putting Labour in Its Place': Global Value Chains and Labour Process Analysis, *Competition & Change* 17, 1, 1–5.

Traub-Merz, R. (2012), 'All-China Federation of Trade Unions: Structure, Functions and the Challenge of Collective Bargaining', in R. Traub-Merz and K. Ngok (eds), [Industrial Democracy in China: With Additional Studies on Germany, South-Korea and Vietnam](#) (Beijing: China Social Sciences Press), pp. 11–60.

Webster, E., R. Lambert and A. Bezuidenhout (2008), *Grounding Globalization: Labour in the Age of Insecurity* (Malden, MA: Blackwell Publishing).

Wikinvest (2013), '[Apple: Operating Margin](#).'

Wright, E.O. (2000), 'Working-Class Power, Capitalist-Class Interests, and Class Compromise', *American Journal of Sociology* 105, 4, 957–1002.

Zhang, L., (2015), *Inside China's Automobile Factories: the Politics of Labor and Worker Resistance*. New York: Cambridge University Press.

Zhao, J. (2010), '[Suicide Occurs after Foxconn Ceo's Visit](#)', *Caixin*. 27 May. (accessed 28 May 2010).

Zhou, Y. (2008), *The Inside Story of China's Hi-Tech Industry: Making Silicon Valley in Beijing* (Lanham: Rowman and Littlefield).