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Apple Cares About Workers But Does it Care Enough?

As the iPhone maker struggles to come up with the next great thing, labor — not innovation — might turn out to be CEO Tim Cook's biggest problem.

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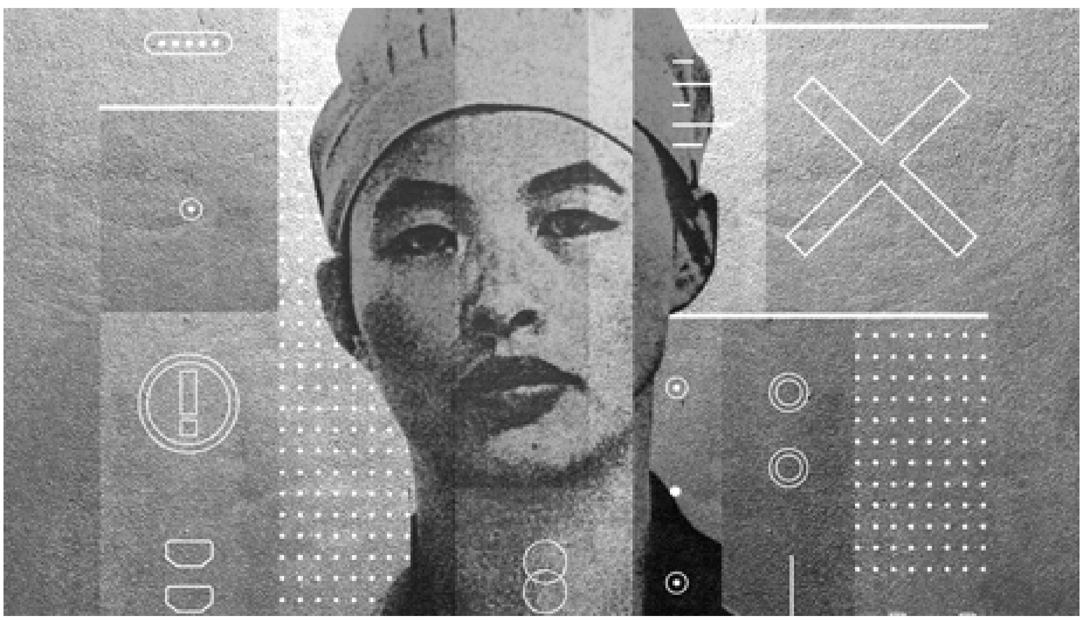

Apple Cares About Workers But Does it Care Enough?

One day this past May, Tim Cook posted two pictures to Twitter. The first showed the Apple CEO with Jean Liu, president of Didi Chuxing, the ride-share company that just forced Uber Technologies to abandon its Chinese ambitions. Liu appeared to be ordering a car using the Chuxing app on her iPhone; the second shot showed Cook and Liu in a vehicle, with the latter clutching her smartphone and sporting an Apple Watch. Cook captioned his tweet: "'Taxi!' Caught a cab in Beijing this morning with Didi Chuxing's Jean Liu." Cook's

company had just invested $1 billion in Didi Chuxing as part of its grand China plan, which very much depends on the continued success of the vaunted iPhone.

The iPhone is the most successful product in Apple's history, making it arguably the single most successful product in the history of the world. Since the introduction of the iPhone in June 2007, Apple has sold more than 1 billion units around the globe. The performance of Apple stock has almost directly tracked that of its smartphone. From May 2007 through May 2015, Apple rose from $17 to more than $130 a share (adjusted for a 7-for-1 stock split in 2014). Among consumers the iPhone's success can be attributed to its sleek design and groundbreaking technology, which have helped foster an almost cultlike following. For investors the kicker is that the iPhone is remarkably cheap to manufacture: Gross profit margins are typically estimated to be about 65 percent.

The world's largest company by market capitalization, Apple is known for its perfectionism, attention to detail and secrecy. It cannot afford to produce inferior products. Its loyal customers, who pay above-market prices when they buy a computer, phone or watch made by the Cupertino, California–based company, expect not only state-of-the-art form but also superior function. The element of mystery is a business necessity, as the electronics market is extremely competitive and technology is easily replicated. Protecting Apple's high gross margins is no easy matter.

In achieving its success Apple has become a preeminent manufacturer, albeit one that operates at arm's length from its factory workers. The company indirectly employs some 1.5 million people in China and for the iPhone alone puts an estimated $70 billion annually into Asia each year through the electronics supply chain. Even as Apple outsources the assembly of its products to companies such as Taiwan-based contract manufacturers Hon Hai Precision Industry Co., also known as Foxconn Technology Group, and Pegatron Corp., it is directly investing billions of dollars a year into plants operated by its partners.

The business of producing millions of products each quarter puts Apple at the heart of the electronics industry's global supply chain. Increasingly, that chain is under threat, from labor activists as well as an aging workforce. The messy realities of dealing with a changing supply chain are at odds with the image the company wants to project — of being a good global citizen — and could threaten its brand over time. Yet while Apple has made billions of dollars for its investors, pay for its Chinese workers has remained low. Now, as Apple enters its most ambitious growth effort — selling into developing markets and building a trusted network of services for its billion-plus users — the company's place in the global labor market will be crucial to its success.

Concerns over globalization have been apparent in the U.S. presidential election, with both Democratic hopeful Hillary Clinton and Republican nominee Donald Trump criticizing trade agreements and promising to bring manufacturing back to the U.S. Apple is under constant pressure to return jobs, and cash, to the U.S.; it has faced harsh criticism for avoiding taxes by keeping its corporate earnings overseas. At the same time, governments in Brazil, India and elsewhere are encouraging the company to bring jobs to their nations in return for tax breaks and favorable business deals. The European Union last month required that Apple pay €13 billion ($14.5 billion) in unpaid taxes, after ruling that the Irish government had granted illegal state aid to the company, whose European headquarters is based in Cork, Ireland, by helping it lower its tax bill for the past 20 years.

A position of global influence in the electronics supply chain does not sit easily with Apple's reputation as an innovator. Silicon Valley has always traded upon a kind of gilded optimism unique to the sun-drenched eucalyptus groves and suburban enclaves that make up its home. Even corporate mottoes, from Google's "Don't be evil" to Apple's "Think different," imply that these companies know the future and that this future, achieved through advances in technology and computer engineering, will be much better for everyone. As author, academic and former Microsoft Corp. employee Kentaro Toyama explains in his 2015 book, *Geek Heresy: Rescuing Social Change from the Cult of Technology*, companies like Apple and Google cling so closely to their messianic vision of themselves as change agents that it infuses almost everything they do. Apple's new headquarters, currently under construction, with an estimated $5 billion budget — whose plans were approved by former CEO Steve Jobs and which is nicknamed "the spaceship" for its flying saucer–like appearance — is to be the physical manifestation of that future perfect place into which Apple promises to deliver its employees, customers and investors.

As eagerly as Apple watchers follow the company's every high-tech move, few consumers want to know that in 2015 workers assembling their iPhones at Pegatron factories in Shanghai went home to crowded, bedbug-infested dorms or that slavery is rife in the Malaysian electronics supply chain, where some Apple suppliers operate. Nor do they want to hear that children are being exploited to mine cobalt, a key component of iPhone batteries, in the war-torn Democratic Republic of the Congo (DRC).

Yet Apple's electronics supply chain is as key to its success as the invention of the iPhone. "If you go back in history, the breakthrough in the auto industry was not that someone came up with a better car; it was that someone came up with a better factory," says Apple analyst Horace Dediu, a former Nokia Corp. executive and the founder of industry analysis site Asymco. "Apple brought a similar ethos to computing."

Starting in the late 1990s, Apple began to develop a new manufacturing model tied directly to China. "Think about what Apple has become since the 1990s," says Eli Friedman, an assistant professor in the international and comparative labor department at Cornell University's ILR School, and an expert on China's labor development and urbanization. "These iconic products — the iPad, the iPhone — you can't imagine these products if Apple had kept their production in California. The outsourcing of production to China is inexorably linked to Apple's rise to the stratosphere of global corporations."

Investors, for their part, have tended to pay little attention to labor conditions in Apple's supply chain, largely because consumers don't seem to care. In early 2010, Apple's labor record came to public notice after a spate of suicides at a Foxconn factory in China, attributed to the harsh working conditions. Despite the public outcry, sales were hardly affected. By June 2010, Apple was selling one iPad — its tablet device, introduced in April of that year — every three seconds. The company sold 8.4 million iPhones in the third quarter of 2010, a 61 percent increase over the previous year. It sold 40 million iPhones that fiscal year, 93 percent more than in 2009. Apple's share price rose steadily, from less than $30 in January 2010 to $95 in August 2012.

"Most investors are not very concerned about [Apple's labor] issues," says Rod Hall, a senior research analyst with JPMorgan Chase & Co. in San Francisco. "They are concerned with Apple's bottom line and the company's ability to deliver margins."

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"We have not been able to find a strong relationship between social signals like human rights and supply-chain risks," adds Asha Mehta, director of responsible investing and lead portfolio manager for the frontier markets strategy at Acadian Asset Management, a $69 billion, Boston-based quantitative investment firm that integrates environmental, social responsibility and corporate governance (ESG) factors into its investment process. Plenty of hedge fund managers have spent much of the past decade getting rich from Apple stock while paying little heed to conditions on the factory floors in Jiangsu, Shenzhen, Sichuan and Zhengzhou.

In many respects, Apple is considered a "good" company. As befits an enterprise that counts former U.S. vice president Al Gore among its board members, Apple is viewed positively on environmental issues. In February the company issued $1.5 billion in green bonds, its first such sale, to finance clean-energy projects. With the first openly gay CEO of a Fortune 500 company as its leader, Apple is progressive in its policies for LGBT employees. And recent high-profile efforts to protect privacy have made the company popular with human rights groups. Yet Apple is excluded from some of MSCI's ESG indexes of ethical companies because of its track record on labor.

Just how important these tricky labor issues are as a business risk is evident in how seriously the company takes them. After the Foxconn suicides scandal broke, Apple became the first corporation to join the Fair Labor Association, a Washington-based nonprofit dedicated to promoting fair labor standards around the world. The FLA performed a series of audits on Apple supplier factories and recommended improvements including changes to recruitment policies and the reduction of overtime hours.

Apple audits all of its suppliers. It says it has a zero-tolerance policy for underage workers or involuntary labor, document falsification, retaliation against workers participating in audits, and hazardous working conditions. The company has placed a big emphasis on cutting overtime hours. In 2013 it appointed a high-powered academic advisory board, chaired by noted supply-chain expert and political scientist Richard Locke, provost of Brown University, to help it think through its labor problems.

Still, Apple pays remarkably little for the assembly of its products. Some estimates put the figure as low as $4 a unit. The company will not confirm any numbers and declined to make anyone available to comment on the record for this article. Apple is willing to spend billions of dollars elsewhere — for example, on its new headquarters or its $250 billion capital return program — even as its own reports suggest that problems in the supply chain persist.

Investors today are focused on iPhone sales — specifically, on the recent slowdown in smartphone purchases in China. On April 26, Apple reported a 13 percent decline in revenue for its fiscal second quarter — its first year-over-year quarterly drop since 2003. The company missed analysts' earnings forecasts and cut its third-quarter numbers below what Wall Street had been predicting. Apple's stock fell 8 percent in after-hours trading, to open the next day at $96.

The company's share price was already on a downward slide from its 2015 high. "Apple's best days are behind it," Sanford C. Bernstein & Co. analyst A.M. (Toni) Sacconaghi told CNBC before the company's October 2015 earnings announcement. "The fear is that Apple is entering growth purgatory." The company had its last great cycle with the iPhone 6, and expectations for the iPhone 7, due to start shipping this month, are muted. Investors and analysts are concerned that the smartphone marketplace is increasingly mature, particularly at the high end, and that Apple has no new blockbuster product in the near-term pipeline, as the Apple Watch has been slow to take hold and the Apple car is believed to be years away.

Apple has found itself vying with Alphabet, parent of Google, for the title of world's largest company. In mid-May, Apple dropped to $90 a share, allowing Alphabet to briefly overtake the iPhone maker as the world's biggest business. Adding to investor anxiety is a sense that Apple may have lost its innovative edge since former CEO Jobs died from pancreatic cancer in 2011 — and that the company may no longer be the best harbinger of what is new, different and better.

The changing nature of the global labor market means that Apple's manufacturing problems will loom ever larger. The company is coming under pressure from governments, lawmakers and nongovernmental organizations (NGOs) to improve working conditions and create more jobs.

To date, Apple's success has depended on a massive labor arbitrage, from the expensive workers of California's Silicon Valley to inexpensive factory labor in China. No one knows the value of that trade better than Cook, who as chief operations officer under Jobs built the supply chain that has been so critical to the company's success.

Steve Jobs and Steve Wozniak famously started Apple Computer Co. in the garage of Jobs's parents' house in Los Altos, California, in the spring of 1976. The 21-year-old Jobs's moxie, business acumen and sense of design combined with the superior engineering skills of Wozniak, then 25, at a moment in Silicon Valley history when the home computer was asking to be born. Their first computer, the Apple I, had a handcrafted wooden case and sold close to 200 units in nine months, mostly to electronics geeks and hobbyists. But their second model, the Apple II, released in 1977, was a true personal computer and the first to market.

By the time of its October 1981 IPO, Apple had more than 1,000 full-time employees; it shipped 131,000 Apple II computers that year. Just four years later Jobs was pushed out of the company after a disagreement over strategic direction. Apple found itself struggling to compete with the likes of IBM Corp. and Microsoft, and eventually, on the verge of bankruptcy, brought Jobs back into the fold in December 1996 after buying his company, computer maker NeXT, for $427 million. The following month, when rival Michael Dell was asked at a tech conference what Jobs needed to do to fix Apple, he replied, "I'd shut it down and give the money back to the shareholders."

Instead, Jobs, who became CEO in July 1997, retooled the company with a new focus. Apple's share price rose steadily. In January 2006, when his company's market cap surpassed that of Dell's, Jobs could not resist sending a cheeky e-mail to his employees: "Team, it turned out that Michael Dell wasn't perfect at predicting the future. Based on today's stock market close, Apple is worth more than Dell." Later, with the 2007 introduction of the iPhone, Apple left Dell and its other PC rivals in the dust.

Such is the story often told of Apple — a turnaround so brilliant as to be awe-inspiring in its magnitude. Driven by a talented, exacting CEO with a laser focus and fierce determination, Apple embarked on a triumphant march punctuated by a series of iconic products: the iMac, the MacBook, the iPod, the all-important iPhone and the iPad. The great products were accompanied by epic battles and alliances with companies like Microsoft, Samsung, Google and AT&T. After Jobs's death his legacy would be carried on by his spiritual twin, Jonathan (Jony) Ive — the highly paid, highly talented head of design, a shy Scot with a passion for clean lines and fast cars — and Cook, the former COO and technocrat who took over as chief executive.

There is, however, another way of looking at Apple's Lazarus-like rise — one that features Cook far more prominently: the transformation of the supply chain. By the time of its IPO, Apple had gone from making a handful of computers in the Jobs family garage to producing thousands of PCs a year in facilities in Cupertino, Dallas, Los Angeles and San Jose. The company had recently built its first non-U.S. plant, in County Cork, Ireland; those workers were represented by the Irish Transport and General Workers' Union. In total, Apple employed 558 people in manufacturing, approximately half of its full-time staff.

Some 7,000 miles away from Silicon Valley, the transformation of China's Pearl River Delta from a rural backwater to the world's factory floor had begun. In 1979 the Chinese government had opened up the mainland delta, located just north of Hong Kong, to foreign trade and investment. This was resulting in a massive escalation of manufacturing in the region. By the mid-1990s, IBM and Hewlett-Packard Co. had operations in China, which was becoming central to the world's electronics supply chain.

China's economic transformation was helped by the influx of Taiwanese companies — already big players in the global electronics industry — which moved their operations to the mainland in search of a young, cheap workforce. One company to make the leap across the Taiwan Strait was Hon Hai. Terry Gou, the son of two Chinese exiles, had founded Hon Hai in 1974 with a small loan from his mother. Originally, the company made plastic parts for TV sets in a factory located in a suburb of Taipei. Hon Hai, which moved into the PC business in the early '80s, opened its first mainland factory in 1988.

A 2007 *Wall Street Journal*profile of Gou — one of his few public interviews with Western media — described the Hon Hai founder as an exacting cost cutter and taskmaster whose greatest value to his customers was his discretion, quality control and competitive pricing. During the 1980s and '90s, undaunted

by his limited English as he crisscrossed the U.S. in search of business, Gou "logged so much time driving from city to city in the U.S. that he memorized the menu at Denny's," the *Journal* wrote. For electronics companies the great benefits of Hon Hai are the flexible nature of its workforce and how much assembly is done on-site. One of its early clients was Michael Dell, whom Gou met in 1995 when the then-30-year-old entrepreneur was on a trip to China. Hon Hai quickly became one of Dell's largest suppliers for its just-in-time manufacturing operation.

After Jobs returned to Apple and took over as CEO, he not only had to worry about products and strategic vision, but he also had to manage the company. According to Walter Isaacson's authorized biography, *Steve Jobs*, Apple's head of operations quit after just three months under Jobs because "he could not bear the pressure." Jobs ran operations himself for almost a year as he struggled to find the right candidate; he wanted someone who could build a just-in-time production line like Dell's. He found that person in Tim Cook.

The son of a shipyard worker, Cook majored in industrial engineering at Auburn University in his home state of Alabama before joining IBM's PC business in 1982. In 1998 he had recently taken a job as procurement and supply-chain manager at Compaq Computer Corp., but Jobs quickly persuaded him to join the Apple revival. The restructuring of Apple's manufacturing business had started two years earlier, when the company sold factories it owned in California, the Netherlands and the U.K., with plans to outsource the manufacturing and assembly of its products. By 1999, while still doing some assembly in its own facilities, Apple began to use contract manufacturers in Taiwan, South Korea, Mexico and the U.K. The next year Apple added the People's Republic of China and Hon Hai to its list of supplier factory locations and vendors.

Hon Hai was the big breakthrough for Apple. Analyst Dediu says the manufacturer was able to change the nature of the electronics supply chain because it was willing to be flexible. "The dot-com bubble bursting caused a lot of contract manufacturers to become quite rigid" in their terms, he explains, adding that Apple stepped into that environment with its iPod music-playing device, which launched in October 2001, "and said, 'We need a manufacturer that is extremely agile, because we expect a very narrow window for our product.'" Hon Hai was able to provide that agility in large part because of the way it set up its factory floor, producing most of the parts on-site, and its ability to manage its workforce to fit a seasonal production schedule.

Such flexibility has allowed Apple to cut down on the amount of time a product spends sitting around before it's shipped to retailers and consumers. Cook, who has described inventory as "fundamentally evil," was able to slash Apple's inventory turnover from months to days. Turning over inventory more frequently lowered production costs and — along with employing a flexible workforce and negotiating tough contracts with suppliers — was critical for Apple in improving margins and raising profits. In 1997 gross margins on net sales were 19 percent. By 2000 they had increased to 27 percent, and in September 2008, after the first full year of the iPhone, they were 34.3 percent.

In the beginning, Apple made high-end products, but its business was not sustainable on a large scale. That problem contributed to Jobs's 1985 departure from the company and Apple's subsequent struggles. By developing a global supply chain, Cook put in place the system that allowed Apple to produce vast quantities of products and led to the iPhone's success. But the system means that Apple indirectly employs 1.5 million Chinese workers — on whom it very much depends — and many of the factors that made China so attractive as an assembly destination have also proved problematic.

In June 2010, Walt Mossberg and Kara Swisher interviewed Steve Jobs at their All Things Digital conference in Los Angeles. It was a much-anticipated interview. The Apple CEO had returned to work the previous summer after taking medical leave and receiving a liver transplant, and a notably gaunt but game Jobs walked onto the stage. The conference happened to be taking place during the Foxconn suicides scandal, and Swisher asked if Jobs had any thoughts on the situation. "Oh, sure," he replied. "I actually think Apple does one of the best jobs of any companies in our industry, and maybe in any industry, of understanding the working conditions in our supply chain. We're extraordinarily diligent about it and extraordinarily transparent about it."

He added: "Foxconn is not a sweatshop. You go to this place and it's a factory but, my gosh, they've got restaurants and movie theaters and swimming pools. For a factory it's a pretty nice factory."

The pattern of labor abuses and their exposure by activist groups, often with the help of journalists, can be traced to the early days of industrialization. In her 2014 book, *Global Muckraking: 100 Years of Investigative Journalism from Around the World*, Anya Schiffrin highlights examples going back to the late 19th century. “We’ve seen over the past 200 years that media coverage is an important part of the global campaigns for better labor conditions for workers,” says Schiffrin, director of the technology, media and communications specialization at Columbia University’s School of International and Public Affairs. “But as long as poverty exists, there will be people willing to take factory jobs no matter how dangerous or badly paid they are.”

Human rights activists have long followed a standard playbook of naming and shaming. They identify and draw attention to abuses, hoping that the resulting outcry and consumer pressure will force companies to change their ways. Among the most famous campaigns was a global boycott of Nike in the 1990s to protest labor conditions at its factories; the effort resulted in the Beaverton, Oregon–based athletic footwear and apparel maker drastically revamping its supply-chain and ethical practices.

Apple, like Nike before it, has been targeted not because it is an especially bad actor — in fact, on most social issues the company is very progressive — but because of its size and visibility. Apple began publishing sustainability reports on its suppliers in 2007. However, according to John Ruggie, the Berthold Beitz professor in human rights and international affairs at Harvard University’s John F. Kennedy School of Government and the author of the United Nations Guiding Principles on Business and Human Rights, the company only began taking conditions in its supply chain seriously after 2010. “It was really only when the Foxconn case blew up and Apple then reached out to FLA that they started to really get into this space,” Ruggie says. “They were late to the party.”

Apple had other reasons to become more focused on what went into its products. The U.N.’s adoption of Ruggie’s human rights principles in 2011 was an indication of just how much the global community was coming to recognize the importance of upholding labor standards. The Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010 required companies to disclose their use of conflict minerals — gold, tin, tantalum and tungsten — that could have been used to fund fighting in the Democratic Republic of the Congo.

After Jobs's death the tone at the top of Apple changed. Cook has long been outspoken in his commitment to human rights and cites Martin Luther King Jr. and Robert Kennedy among his childhood heroes. He has talked openly and frequently about the need to address human rights for all Apple workers. Whereas Jobs could seem dismissive about labor concerns, Cook has been far more conciliatory.

The Apple-sanctioned March 2012 report on Foxconn, which audited three of the company's factories, found at least 50 issues violating the FLA code of conduct and Chinese labor law. These included excessive overtime during peak production, poor heath and safety procedures and standards, and workers alienated from the factory committees that were supposed to represent their interests. Although the FLA found that Foxconn was paying its workers above minimum wage, the audit reported that 64.3 percent of workers "thought that their salary was not sufficient to cover their basic needs."

In June 2012, China Labor Watch, a New York–based nonprofit, published a report based on a series of surveys and interviews with workers at ten factories operated by Apple suppliers, including Foxconn, and found a number of labor problems common to all. These included excessive overtime, unfair calculation of overtime, dangerous working conditions, poor food, lack of familiarity with unions and their function, low wages and high work intensity.

CLW executive director Li Qiang believes Apple could — and should — do more to improve conditions. "Apple is an obstacle to the improvement of labor conditions in the electronics industry," the activist tells *Institutional Investor*, speaking through a translator. "We don't think Apple is doing good. It is an obstacle. It has the most profit of the whole industry. Other companies don't have the money to improve labor conditions."

Not everyone thinks Apple is doing a bad job. Andreas von Angerer, a senior analyst with Munich-based sustainability rating firm oekom research, commends the company on its openness. "They are really transparent on what they are doing in the supply chain especially," he says. "Their main focus is on the environment." Since 2011, Apple has worked with the Institute of Public and Environmental Affairs and other China-based environmental NGOs to clean up its manufacturing processes. Von Angerer says Apple was one of the first companies to publish the names of its suppliers and remains "one of the few companies that precisely lists what they find in their audits and how they follow up."

Apple performed 640 audits in 2015, according to its most recent supplier responsibility progress report. Last year full-time factory employees working on Apple products across the company's supply chain put in an average of 55 hours a week, below the 60-hour ceiling mandated by Apple. The company has taken extensive steps to address the use of conflict minerals, such as investigating the smuggling of gold by armed groups in the DRC. KnowTheChain, a not-for-profit initiative to encourage greater transparency into supply-chain sourcing, gives Apple a rating of 62 (out of a possible 100) for its efforts to eradicate forced labor from its supply chain, second only to HP.

What is life like at an Apple assembly plant? Reports on the topic, as well as interviews with people who have visited factories in China, indicate that the hours are long and the work is tedious. For the most part, wages are low but competitive. Foxconn, in an e-mailed response to questions from *II*, says each of its factory campuses offers "very competitive wages with the compensation for entry-level workers at least 10 percent higher than the local minimum wage." Workers who stay more than three months receive increases so their hourly wage is at least 20 percent higher than the local minimum. The minimum wage in Zhengzhou, where the iPhone 7 is currently being manufactured at Foxconn facilities, is 1,600 yuan ($239) a month; therefore, a three-month-plus Zhengzhou Foxconn worker in good standing makes about $287 a month. That figure doesn't include deductions for expenses such as food and housing, or other costs.

Foxconn, Pegatron and Apple all have taken steps to reduce overtime hours. Pegatron says it strictly follows local regulations regarding employee salaries. It has placed touch-screen computer kiosks throughout its campuses to "ensure employees have real-time access to hours, wages and campus information." The company uses electronic monitoring and a badge-and-turnstile system to ensure that employees do not clock more than 60 hours a week, and workers are encouraged to join their trade unions.

Many of the most troubling issues relate to the quality of life for these employees. Unlike the workers at a Ford Motor Co. plant in the U.S., today's Chinese laborers do not get to go home to their families at the end of their shifts; they live in either factory accommodations or off-campus housing. Jobs's description of a factory village with swimming pools, restaurants and movie theaters sounds far less bucolic when it is clear that there is nowhere else for these workers to go.

A May 2012 report by Students and Scholars Against Corporate Misbehavior (SACOM), a Hong Kong–based NGO, documented a variety of labor abuses at Foxconn factories in Shenzhen and Zhengzhou. In addition to excessive overtime and unsafe working conditions, SACOM's investigation uncovered inhumane disciplinary measures ("forcing workers to write confession letters, reading out these confession letters, cleaning the toilets") and cramped living conditions. The report, which was based on interviews with more than 170 Foxconn workers, details how the company crammed 20 to 30 people into three-bedroom apartments. An October 2015 CLW report on Pegatron described housing that was even more crowded, with as many as 14 beds to a dorm room, "where dark mold spreads along the walls and bed bugs are rampant."

Mark Cullen, a professor of medicine and biomedical data science at Stanford University and an expert on workplace health and safety, says negotiating for better working conditions in China is not easy. "These contract companies have a huge amount of control over the conditions," says Cullen, who is a member of Apple's human rights advisory board. "Then there is China, which is itself a very complicated regulatory and social beast."

Given Apple's dependence on China and the likes of Foxconn for its labor force, the tech company has only limited influence when it comes to improving the conditions of its overseas workforce. "There is no one at Apple that is happy about the fact they can't dictate labor conditions," Cullen says. "It's a source of great unhappiness."

Though the subject of what constitutes a living wage in China is complex, Apple could pay its Chinese workers more. After all, the company is sitting on a pile of $232 billion in cash, most of which is held offshore for tax purposes. Washington-based nonprofit Green America estimates it would cost Apple $12.38 more per iPhone to pay Chinese assembly workers a living wage for a 55-hour workweek. Fairphone, a Dutch company that has produced the first conflict-mineral-free smartphone, spends €9.80 on assembly labor costs for each of its Fairphone 2 devices — which sell for €525 apiece — and contributes

€2.31 per worker to a welfare fund. Foxconn states that it has cut back on overtime hours and "introduced significant wage increases." But the formula for how the contract manufacturer pays its workers — slightly above the local minimum wage to start, with an increase for those who stay — has not meaningfully changed since the 2012 FLA audit.

On his return from China in May, Tim Cook stopped in India — the first official visit by an Apple CEO. This time Cook's Twitter feed featured pictures of him meeting with top developers and visiting the new Mac lab at Hyderabad's G. Narayanamma Institute of Technology and Science (for Women), where Apple is pursuing an initiative aimed at helping female programmers. The company has also announced that it will open a design and development accelerator in Bangalore in 2017. As with Cook's China visit, the focus was very much on innovation and the potential for Apple to partner with budding entrepreneurs and computer engineers. There was no $1 billion investment in a new technology, but the message was in line with what Apple and analysts have been saying: The future of the company lies in services.

Even as Cook visited a famous Hindu temple, where he prayed to the elephant-headed god Ganesha, and partied with Bollywood stars, he could not escape the messy realities of life as a consumer electronics maker in the very unequal global economy. As with China, Apple is anxious to sell iPhones in India. The untapped markets in both countries are huge. Although China has the larger population — 1.36 billion versus 1.25 billion — only 17 percent of the people in India own a smartphone, compared with 58 percent in China, according to Washington-based think tank the Pew Research Center.

"India is also incredibly exciting," Cook told analysts in January, during Apple's first-quarter earnings call. "India's growth, as you know, is very good. It's quickly becoming the fastest-growing BRIC country. It's the third-largest smartphone market in the world behind China and the United States."

With iPhone growth in China slowing, India has become more important for Apple. But the country has not welcomed the U.S. company with completely open arms. Although iPhones have been available in India for close to a decade, Apple has been forced to sell them online or through other retailers because of a requirement by India's Foreign Investment Promotion Board that at least 30 percent of the value of goods sold in every store be made locally. Keen for Apple to open its own retail outlets in India, Cook hoped that the requirement would be waived when he met with Prime Minister Narendra Modi during his May trip. But just days after Cook's visit, the Indian Finance Ministry ruled that Apple is not exempt.

The ruling means that Apple — which in March was reported by the *Times of India* to be scouting for retail locations in Mumbai and elsewhere in the country — will have to establish a manufacturing presence there to pursue its retail ambitions. Still, a round of reforms announced in late June are expected to give the company a three-year moratorium from the local sourcing requirement. Before that expires Apple may be able to deliver on the 30 percent condition: Foxconn has said it will build as many as 12 factories in India in the next four years.

Foxconn is already manufacturing Apple products in Brazil. In 2011 the Brazilian government announced that the Taiwanese company would be making a significant investment there. The deal — which came, after lengthy negotiations, with a significant tax break from the local government — gave the contract manufacturer access to a new labor market and Apple the ability to import products directly into Brazil without having to pay steep tariffs. In 2013 the town of Jundiaí, where Foxconn opened its first factory, renamed the street that runs by the facility Rua Steve Jobs in honor of the Apple founder.

Apple needs to look for manufacturing outlets outside China, not just because countries like Brazil and India want the jobs but because China's labor market is changing, both in terms of demographics — the country's population is getting older — and workers' rights. Quinn Underriner, technology and communications sector analyst for the Sustainability Accounting Standards Board, says labor conditions are very much a challenge for electronics companies and their investors as Chinese workers start demanding better conditions. "If you look at the way environmental regulation has really shifted in China, I think there is a real risk of the same type of thing also happening in the labor space," he says, referring to increasing levels of environmental regulation and oversight. San Francisco–based SASB is focused on integrating material ESG factors into corporate accounting and reporting practices so that investors are better able to quantify their relevance. "There is this long-term intangible risk to companies that don't pay attention to labor conditions," Underriner adds.

Cornell’s Friedman is optimistic that the emerging labor movement in China will improve workers’ conditions. “My hope is that Chinese workers themselves, and the people in those communities, will ultimately have the ability to change something there,” he says. “Chinese workers have been doing a lot. There have been a huge amount of strikes and protests, and some student groups are getting under way.” Friedman, who was a member of Apple’s human rights advisory board until last year, believes that economics, not morality, will drive change. “Labor conditions in China’s electronics factories are morally problematic, but I think the only way you solve them is through some sort of mandatory limits that would effect all businesses equally, not by politely asking companies to be nice to workers.”

JPMorgan Chase analyst Hall thinks improvements in robotics will make Apple’s labor problems moot. “Robotic manufacturing is going to do away with the labor issues,” he explains. “In five years’ time I don’t believe that we’ll have as many people involved in the assembly process.”

In 2011, Foxconn founder and chairman Gou was reported as saying that his company planned to employ 1 million robots within three years. Although Foxconn has fallen well short of that number, in March it agreed to pay ¥389 billion ($3.5 billion) for a controlling stake in Japanese electronics manufacturer Sharp Corp. Analysts view the purchase partly as an effort by Foxconn to further its automation goals.

Meanwhile, Apple has spent billions of dollars investing in manufacturing equipment for Foxconn and its other suppliers. “They use their capital to ensure the availability of their manufacturing components in the right sequence or time without also having to take on the burden of managing the actual logistics of the labor itself,” says Asymco’s Dediu. The analyst estimates that Apple today is spending about $10 billion a year — twice the entire predicted budget for its new headquarters — on equipment and other resources that are housed in its suppliers’ factories.

After Apple’s announcement that it was taking a stake in China’s Didi Chuxing, analysts were keen to learn where else the company might invest its $232 billion cash hoard. In July, however, during Apple’s third-quarter earnings call, Cook cautioned against reading too much into the investment. “We obviously invest a ton of capital in our business itself to support research and development and the production of our products, and that’s the main source of our capital,” he explained. “From a Didi point of view, we see that as, one, a great financial investment. Two, we think that there’s some strategic things that the companies can do together over time. And three, we think that we’ll learn a lot about the business in the Chinese market even beyond what we currently know.”

Investors responded enthusiastically to Apple’s third-quarter earnings, as the company’s services business grew 19 percent, and drove up the stock 6.5 percent on July 27, to nearly $103 a share, bringing the company’s market cap back over $550 billion. Although iPhone sales in China are still sluggish — a June Counterpoint Technology Market Research report found that Apple had dropped to fifth place in China smartphone shipments in May, losing ground to homegrown rivals — investors are excited by the Apple ecosystem narrative. “I believe that Apple’s end goal is to get customers to trust its ecosystem,” says Bank of America Merrill Lynch analyst Wamsi Mohan. “Apple very much still wants to be a product company with a wraparound of services around those products.”

The company is close to having 1 billion people actively using its devices (mostly iPhones) — a loyal network of followers it can tap to buy its services and software. “This is almost Apple 3.0,” Asymco’s Dediu says. “Apple 1.0 was hit driven. Apple 2.0 was hit driven at scale. Apple 3.0 is they capture a billion people in perpetuity. Nailing production and understanding the scale issue allows you to think openly, how do we now make this a long-term sustainable business?” Apple 3.0 has so convinced Bernstein’s Sacconaghi of the company’s future success that he now thinks its market cap could breach $1 trillion.

Still, Apple cannot escape its production problems. To date, the Brazil effort has proved to be only a limited success. The effort to establish factories in the country has been besieged by problems made thornier by the collapse in commodity prices, whose previous strength fueled much of Brazil’s economic growth. Unlike their Chinese counterparts, Brazilian Foxconn employees have strong union representation, reducing the flexibility of the workforce.

Establishing factories in India could be equally problematic. “I don’t think either Brazil or India is particularly attractive, because the supply chain doesn’t exist there,” says JPMorgan Chase’s Hall. “You don’t have the component parts.”

Apple could pursue cheaper labor in countries like Vietnam and Bangladesh, but experts say it would take years to build up the necessary expertise. The manufacturing of some Apple components is already taking place in other parts of the globe, where labor conditions can be far worse than in China. In September 2014 international NGO Verité issued the findings of a two-year study, sponsored by the U.S. Department of Labor, into working conditions in Malaysia's electronics industry. The investigation found widespread instances of forced labor among the 2 million foreign migrant workers in the sector. Many of Apple's suppliers — including ON Semiconductors, Panasonic Corp. and Texas Instruments — have operations in Malaysia.

Apple has faced consistent pressure to bring jobs back home. In 2013 the company announced plans to create 2,000 manufacturing positions in the U.S. by opening a facility in Arizona that would make sapphire crystal for its touch screens. That effort fell apart when the company that had been contracted was unable to deliver screens of suitable quality and went bankrupt after the iPhone maker pulled the plug on their relationship. Apple has since said the factory, for which it got a tax rebate, will be converted into a data center.

In August, Cook made another visit to China, his ninth since taking over as CEO. Once again he emphasized innovation, touring an Apple retail store in Chongqing with the city's mayor and posing for more Twitter moments with entrepreneurs. In Beijing he met with Vice Premier Zhang Gaoli and, in a move that was widely reported in both the Western and Chinese media, promised to open a research and development hub in China some time soon. Also attending the meeting was Terry Gou. The Foxconn chairman's presence received far less attention than Cook's. The tableau, however, was a testament to just how important manufacturing is to all three men in their respective spheres of influence.

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Although Demographics Aren't Economic Destiny,

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Ultradovish monetary policy has reached the limits of what growth it can provide. Given the aging demographics in the U.S., it's imperative that policymakers pull the fiscal levers at their disposal.

September 07, 2016

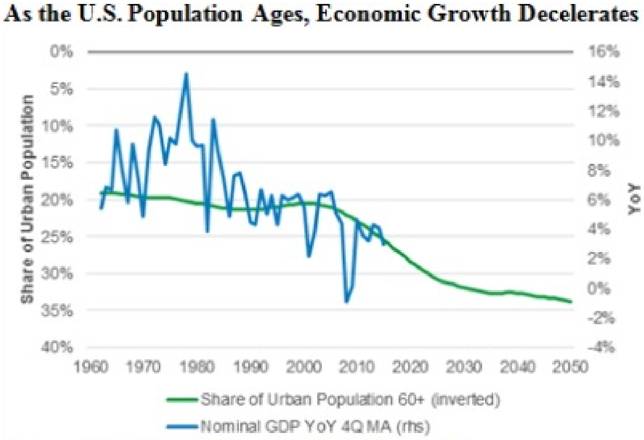
Although Demographics Aren't Economic Destiny, They Demand Attention

Rather than obsessing about the timing of the next Federal Reserve interest rate hike, investors would do well to focus on where policy rates will end up in the long run. At the heart of this matter are demographics. Long-term interest rates, inflation and economic growth all face the structural headwinds of an aging population, but many investors have yet to come to terms with this factor. Still, there are at least signs that the debate is turning in the right direction.

The latest to shift the policy debate to a long-term focus is San Francisco Fed president John C. Williams. In an August 15 commentary, Williams suggested that in the context of lower long-term terminal interest rates, also known as r-stars, it might be necessary for the Fed to either pursue a higher inflation target (giving the central bank more room to maneuver in the event of an economic downturn) or replace the inflation component of its dual mandate entirely with nominal GDP targeting. Both proposals would be a very significant change to the central bank's policy framework, and given the theme of the 2016 Kansas City Fed Jackson Hole symposium, "Designing Resilient Monetary Policy Frameworks for the Future," we at BlackRock doubt the timing of the commentary was accidental. Still, Federal Reserve chair Janet Yellen's remarks at the conference highlighted that these proposals were not actively under consideration at this point, although she acknowledged that they deserve further research.

In our view, the utility of extraordinarily low interest rate levels has long since passed the point of having any meaningful impact on real economic growth and, for some time now, has solely been influencing the financial economy as a price-supporting mechanism. Thus, whereas we think investors are still excessively focusing on short-end interest rates, which continue to be distracting and hold little if any influence on the current economic or inflation trajectory, we are somewhat encouraged by these recent discussions on how rates are likely to play out over the long term. The world we live in, as many are now recognizing, is being driven by a demographic evolution that takes a very meaningful haircut off normal run-rate levels of growth (see chart), as well as by a historic technological revolution that continues to change the fabric of today's economy.

As the U.S. Population Ages, Economic Growth Decelerates



Sources: World Bank, Bureau of Economic Analysis
Data as of December 31, 2015

Until recently, we have only had very general guesses as to the degree of economic growth impairment that might result from the aging of the U.S. population. But a recent study from RAND Corp. is helping to shed greater light on the issue. More specifically, RAND economist David Powell and his co-authors utilized empirical data across the U.S. from 1980 to 2010 to estimate the impact of aging on per capita economic output. The novelty of their approach is that, rather than attempting to forecast the influence of future population aging across multiple economic and policy jurisdictions, this study uses realized aging dynamics and changes in rates of growth and is focused solely on the U.S.

for ESG Strategies?

The authors of the RAND research maintain that the proportion of the U.S. population that is age 60 or older will grow by 39 percent between 2010 and 2050, which holds "the potential to negatively impact the performance of the economy as well as the sustainability of government entitlement programs," and we would add that monetary policy is likely to hold little to no influence over that trend. Further — and fascinatingly — the authors contend that "a 10 percent increase in the fraction of the population ages 60+ decreases the growth rate of GDP per capita by 5.5 percent. … [The authors'] results imply annual GDP growth will slow by 1.2 percentage points this decade and 0.6 percentage points next decade due to population aging." Clearly, this is a remarkable and still largely underappreciated headwind to growth, inflation and the long-term level of policy rates.

As a result, this dynamic demands that greater attention be paid by both fiscal and monetary policymakers and, of course, by investors, who now have to navigate the challenges posed by allocating capital in an environment that is likely to offer lower absolute levels of yield and total return. On the policy front, we have long argued that the baton must now be transferred from monetary authorities to the fiscal channel, if we are to see any meaningful rerating of economic growth in the U.S. and further stabilization of global growth. Both the possibility of future fiscal policy support and the continuation of extraordinary monetary policy have political elements to them. The degree to which the asset inflation of recent years has benefited the already wealthy and left middle classes behind, relatively speaking, could well influence the policy path forward via the ballot box.

In a sense, then, investing for a cyclical time horizon requires balancing the risk of deflationary global impulses abroad, from the waning of the commodity supercycle and currency devaluation wars, against upward pressure in U.S. core inflation and stable — if unimpressive — economic growth. Therefore, over the short-to-medium term, getting the inflation call right is one of the most important decisions an asset manager can make. Secularly, however, asset managers will need to come to grips with the headwinds to economic growth, inflation and interest rates that are likely to make hitting currently established return targets very difficult.

Rick Rieder is chief investment officer of global fixed income for BlackRock in New York.

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Markets react to a lower chance of Fed action this month; Apple to debut new products in major event; U.S. Department of Education shuts down ITT Tech.

September 07, 2016

Daily Agenda: Dollar and Yen Neck-and-Neck; Ackman Goes Chipotle

The MSCI emerging markets index reached the highest level in more than a year this morning ,as commodity and currency markets discounted the likelihood of a Federal Reserve rate hike later this month. At the same time that the anticipated actions of the Federal Open Market Committee are driving many markets, the Bank of Japan's ability to accomplish its objectives appears to have been discounted by many traders. The yen is now up for a third day capping a more than 2 percent rise versus the U.S. dollar since the start of the week. In some ways this focus on central banks by investors on central bank policy may reflect a failure in the recent Group of 20 meeting to catapult fiscal policy expectations beyond those of monetary actions, a reoccurring theme in recent years. As the autumn begins the message being sent by financial markets appears to be that the Bankers remain the primary driver for market direction.

Apple to debut new phone. Today Apple Inc. will host an event in San Francisco featuring new products that will include a new generation smartphone, according to industry analysts. The technology giant is expected to roll out the iPhone 7 as well as other new devices. Separately, a parliamentary session in Ireland earlier today focused on that nation's next step in challenging a European Commission tax ruling against the company.

For-profit tech school shutters. Yesterday ITT Educational Services Inc. closed the doors on more than 40,000 students as it complied with demand from the Department of Education. The company was unable to meet capital demands placed by regulators to cover risks associated with federally guaranteed student loans. Company management have protested the department's actions as illegal.

Ackman takes stake in Chipotle. In a regulatory filing yesterday, Bill Ackman's hedge fund firm Pershing Square Holdings, revealed a nearly 10 percent stake holding in Chipotle Mexican Grill. The activist investor, who has had a checkered past in concentrated holdings including multilevel marketing dietary supplement firm Herbalife, is wagering on a turnaround for Chipotle, which recently has been beset by public health concerns.

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