Financial Times 번역요약본 (‘25. 2/25)

1. Apple’s quiet pivot to India (‘25. 2/18)

- 트럼프의 두 번째 취임 이후, 아이폰 제조업체인 애플의 탈중국(China plus one)이 인도로 조용히 진행되고 있음. 중국에서 아이폰의 최대 공급자인 대만의 폭스콘과 인도의 Tata 전자는 인도 2개 지역에서 아이폰을 생산하기 시작하였고, 현재 전체 아이폰 생산의 15%를 차지하고 있지만 (인도의 최대 수출품목인 다이아몬드를 추월함) 2027년에는 25%로 상승할 것으로 전망. 미국 트럼프 정부의 관세 폭탄은 애플이 중국 이외로 생산과 공급망을 옮겨야 하는 필요성을 더해줌. 중국은 아이폰을 생산하기 위한 노동력, 부품 제조 등 전반적인 공급망을 가지고 있지만, 아직 인도는 부품들을 들여와서 단순 조립 작업만을 하고 있기 때문에 이러한 점은 극복해야할 과제임. 인도 정부의 재생 에너지와 반도체 분야 등에 10조원에 가까운 생산 연계 인센티브 (Production-Linked Incentive Programme) 도입과 함께, 미국 스마트폰 유리 제조사인 코닝 (Corning), 충전기와 디스플레이 제조사인 Jabil, 에어팟 (이어폰) 제조사인 Foxconn Interconnect Technology의 인도 회사와의 합작 혹은 투자가 이어지고 있음.

2. Europe risks becoming ‘assemby plant’ for Chinese battery makers (‘25. 2/18)

- 유럽 각국이 세계 전기차 배터리 분야를 독주하고 있는 중국과 다양한 합작을 시도 중이지만, 적절한 규제 체계와 기술 이전/협력 방안이 함께하지 않는다면, 중국 배터리 제조의 ’조립 공장‘으로 전락할 우려에 대한 보고서 나옴. 스페인의 Stellantis는 중국의 CATL과 합작하여 41억 유로 (한화 약 6조원) 규모의 리튬 배터리 공장을 건설하는 계획을 세우고 약 3억 유로 (한화 약 4500억원)의 지원금

을 받기로 하였으나 어떠한 기술 이전에 대한 단서가 없는 것으로 알려짐. Volkswagen 또한 중국의 Gotion High-tech와 독일에 배터리 공장을 건설하기로 하였으나 지적 재산권이나 기술 이전에 대한 언급은 없는 것으로 보임. 전 세계 전기 자동차와 배터리의 90% 이상은 한국과 중국 기업들이 생산하고 있으며, 미국의 Ford는 SK와, General Motors는 삼성 SDI와 파트너를 맺고 있으며, 같은 중국계 기업인 BYD가 GM과 협력할 당시 미국 정부는 기술 이전과 통제에 대한 조건을 만들었던 것과 비교됨.

3. BYD's strategy shift is bad news for global automakers ('25. 2/19)

- 과거에 자동차의 안전 벨트나 에어백 등은 사치품이나 옵션으로 취급되었지만 지금은 반드시 필요한 부분으로 바뀌었음. 전기자동차의 주행 보조 소프트웨어 (driver assistance software)는 고속도로와 교통 지원 시스템, 자동 긴급 브레이크와 전방 추돌 경고 등 도로 주행의 안전을 위해 반드시 필요한 시스템이며, 대부분의 전기차 생산업체가 이를 옵션 (추가비용)으로 제공하고 있고 커다란 수익원으로 작용하고 있음. 하지만 전 세계 최대 전기차 업체인 중국의 BYD가 최근 자사의 향상된 주행 보조 소프트웨어를 무료 (기본 사항)로 제공하기로 결정하면서 전기차 업계들에게 충격을 주고 있음. 테슬라의 경우 주행 보조 소프트웨어에 대한 비용을 작년 4월부터 8천불 (약 1100만원) 부과하고 있으며, 월 99불 (14만원)의 구독 방식도 적용하고 있음. BYD는 차량 가격이 9,500불 (약 1400만원)에 불과한 자사의 Seagull EV에도 이 사양을 기본으로 제공하기 시작함. 이미 영국 전기차 시장에서 BYD는 작년에 전년도의 매출의 6배를 기록하면서 테슬라를 추월했고, 이는 싱가포르, 브라질 등 다른 나라에서도 비슷한 추세임. 전기 자동차 업계는 BYD의 이러한 전략에 대해 충격과 함께 대응 전략을 고민 중임.

4. Bond investors brace for Europe's defence spending 'bazooka' ('25. 2/19)

- 트럼프 취임 이후 우크라이나 종전 시도와 유럽의 방위를 위해서 유럽 국가들이 너무 적은 비용을 냈다는 경고를 하고 있는 가운데, 유럽 국가들이 지역 방위를 위하여 국방비를 더욱 많이 지출할 것으로 예상됨. 채권 시장에서는 유럽 국가들의 국채 발행이 증가할 것으로 예상하며 장기 국채 금리가 오르고 수익률 곡선 (채권의 만기에 따른 이자율 수준을 나타내는 곡선)이 더욱 가팔라질 (steep) 것으로 예상됨. (장기 금리가 단기 금리보다 높은 것이 일반적이나, 경기 침체가 예상될 경우 일시적으로 단기 금리가 장기 금리보다 높은 현상이 나타나며, 최근 장기 금리 상승으로 인해 이러한 장단기 금리 역전 현상이 완화되었음) 인플레이션 우려와 함께 올해 유럽과 미국의 수익률 곡선은 더욱 가팔라질 것으로 예상되며, 반면 유럽의 방산 기업들의 주가는 최근 상승세를 보이고 있음.

The Big Read Apple Inc

Apple's quiet pivot to India

The iPhone maker wants to diversify its supply chain beyond China. Can the world's largest democracy deliver?

Michael Acton in San Francisco and **John Reed** in Bengaluru and Chennai
YESTERDAY

As Donald Trump was preparing to take office for the first time in 2017, Priyank Kharge was busy making calls to Apple's headquarters in Cupertino, California, from Bengaluru, the city known as India's Silicon Valley.

With the US president threatening to unleash a wave of tariffs against China, Kharge, the information technology minister of the southern state of Karnataka, seized the opportunity to woo one of the world's biggest companies. His mission was to convince Apple, whose manufacturing fortunes are prominently tied to China, to set up its first iPhone production plant in India.

The official touted Karnataka's rich talent pool and sweeteners, such as tax breaks, that Apple could tap if it started making iPhones there. Other states, including Prime Minister Narendra Modi's home state of Gujarat, were also courting the iPhone maker.

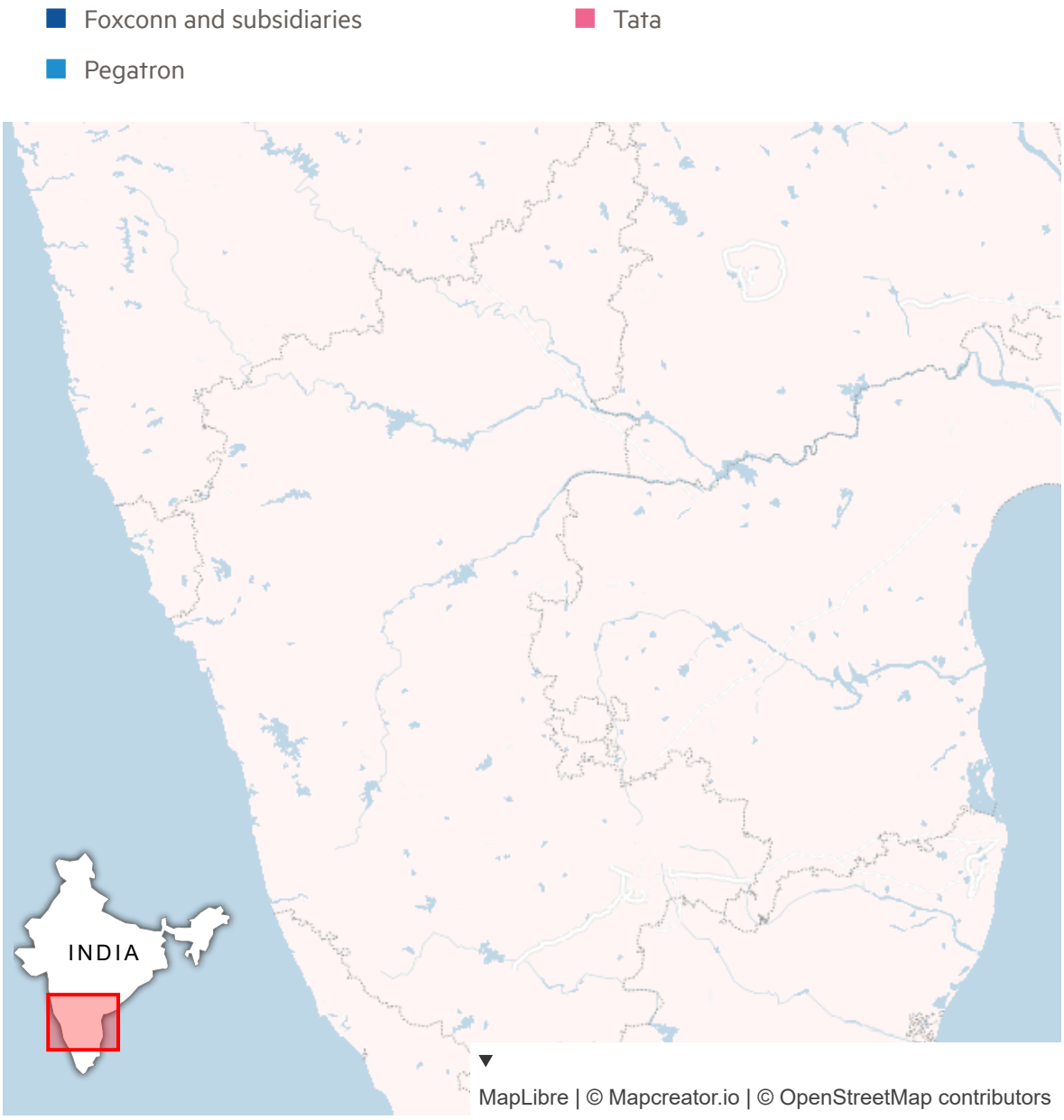
Eight years later, Apple's Taiwanese supplier Foxconn and India's Tata Electronics are now, or soon will be, manufacturing iPhones not only in Karnataka but also Tamil Nadu, India's southernmost state.

Most significantly, Foxconn is producing Apple's latest smartphone, the iPhone 16 Pro, an indication of how far its relationship with India has developed.

For India, it is an important shift. Mobile phones have now surpassed diamonds as the country's biggest product export. And although only around 15 per cent of Apple's iPhones are currently made in India, this is expected to increase to 25 per cent by 2027, according to JPMorgan and Bank of America analysts. Globally, the company shipped some 232mn iPhones in 2024, according to the International Data Corporation.

Apple has a small but growing footprint in India

The tech company's supply chain is slowly setting up bases across the South Asian country, but it cannot yet compete with China's vast network



FINANCIAL TIMES

Source: FT research

"If you have an anchor firm like Apple coming in and placing . . . eggs in the India basket, that's a positive sign," says Konark Bhandari, a fellow with Carnegie India. "It's a big signal to other companies that you can do business with some ease here — and also establishes a strong linkage with a downstream manufacturing firm, which wasn't the case earlier."

For Apple's chief executive Tim Cook, the geopolitics surrounding the shift are tricky. Apple — which is intensely secretive about its supply chain — needs to be wary of antagonising China, on which it still overwhelmingly depends.

Complicating matters further is the chilly relationship between Beijing and New Delhi. In a sign of the secrecy and political sensitivities, officials in Karnataka and Tamil Nadu refer to Apple even in private conversations as "the fruit company".

"It's very hard to build 35mn fewer phones in China and not be noticed — but they are doing it in the least public way possible," says Wamsi Mohan, senior equity research analyst with Bank of America.

Nevertheless, Apple's growing business in India is viewed with suspicion in China. Beijing has recently hampered the movement of some Chinese technicians and capital goods into India, hitting Foxconn and other electronics producers, according to Indian and Chinese officials.

Shoppers at an Apple BKC store in Mumbai. The stakes of Apple's relationship with India are high for the government, which is under pressure to create sorely needed jobs © Indranil Aditya/Reuters

The return of Trump to the White House, already firing salvos at China with a 10 per cent tariff on imports, underlines why Apple needs to diversify its supply chain and manufacturing, a business strategy known as China Plus One.

The stakes of Apple's relationship with India are also high for the Modi government, which is under pressure to create sorely needed jobs.

With unemployment hovering at about 10 per cent and millions of young people about to enter the labour force, the clock is ticking. Anger over the issue during last year's election led to Modi's Bharatiya Janata party being reduced to a minority for the first time in a decade and forced into a coalition.

But if Apple is to put down deep roots in India, it will need a supply base there to rival its vast network in China.

The iPhones currently made in India are still largely assembled using flown-in parts. To become more ambitious and bolster Apple's long-term presence, manufacturers of components will have to be lured to the country with similar revenue opportunities as those found in China.

Other aspects of Apple's success in China, notably a steady supply of mobile and trained female workers, is also proving challenging to replicate in India.

Apple does have keen and powerful partners: Tata, a leading flag-bearer of Indian business, is positioning itself as Apple's first full-service supplier in India. But the 157-year-old group is a relative newcomer to electronics and will need to evolve quickly to make the partnership a success.

Apple, Foxconn and Tata Electronics declined interview requests. But the Financial Times spoke to current and former executives and employees at the company's suppliers, Indian government officials, and analysts to piece together Apple's growing footprint in India.

"Apple will face a few key challenges, including finding suppliers with the expertise it needs and building the flexible workforce it has in China, with the ability to flex up and down by many tens and thousands of workers," says Chris Miller, the author of *Chip War*.

"It will also take time for relevant government authorities in India to figure out how Apple works and vice versa — and for both sides to develop the kind of conversations over regulatory issues that Apple has had in China."

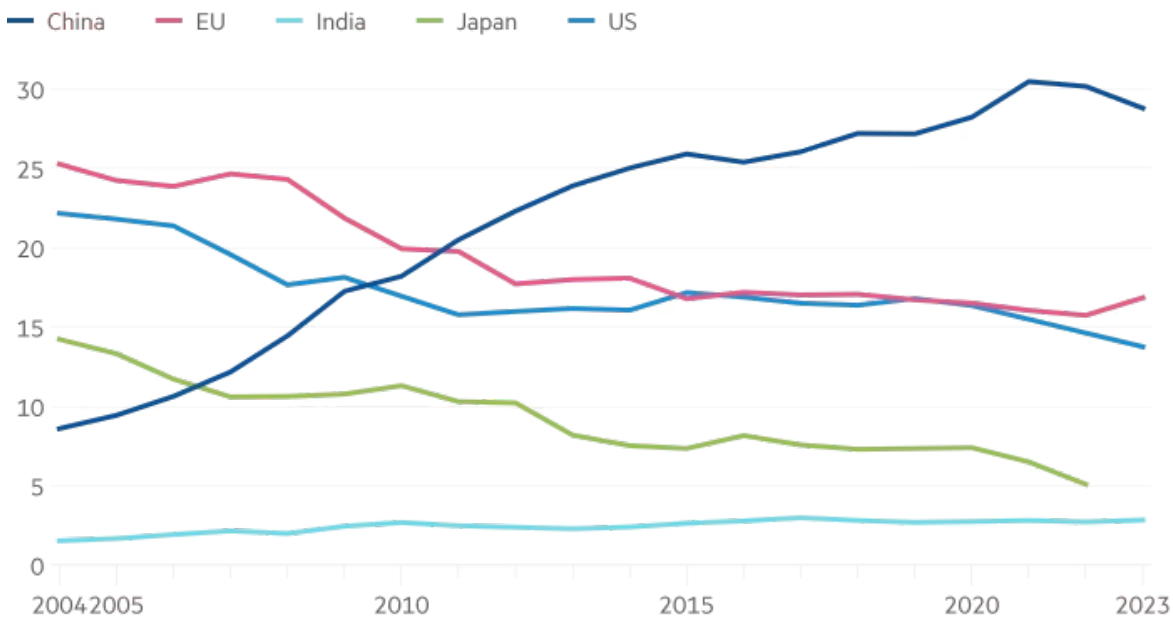
From the moment it launched the iPhone in 2007, Apple bound itself to China.

Henan province alone, the home of Apple's largest iPhone manufacturing complex, exported around 53mn smartphones in 2024, according to Zhengzhou customs data. That is roughly enough to supply America's entire annual iPhone demand.

But even before Trump's return, the lucrative partnership was showing signs of stress. First came the Covid-19 pandemic, which disrupted logistics and put Apple's supply chain in China under strain as the country maintained its "zero-Covid" policy. In April 2022, Apple warned it could lose up to $8bn in revenue for the quarter as China factories shut down.

China still dominates global manufacturing but its growth has stalled

Share of global manufacturing value added (%)



Source: World Bank

This was a "jolt to the strategy" of China Plus One, says an Indian official. It exposed how reliant Apple had become on China, and how quickly state policies could deal a major blow to its bottom line. That same year, Taiwan's Pegatron began assembling advanced iPhone models at its Tamil Nadu plant.

The relationship was tested further in 2023 when Beijing cracked down on the use of Apple devices by government employees, hitting Apple's share price. Sales in China dropped by 11 per cent during the most recent December quarter, partially due to increased competition from Chinese state-subsidised smartphone brands.

Beijing has also placed regulatory roadblocks in front of Apple's built-in AI system, Apple Intelligence, which aims to compete with those already introduced by China's Huawei and others. But the company struck a recent deal with Alibaba to supply it with AI features on iPhone, suggesting a path ahead.

"If you look at the policies the government has put in place, Apple obviously gets no favouritism or leniency on regulations," says Samik Chatterjee, an analyst at JPMorgan.

This contrasts sharply with the warm welcome Apple has received in India. Since 2020, the Modi government has devoted nearly $6bn of the budget for its Production-Linked Incentives (PLI) programme — a broader scheme to lure investment in sectors including renewable power and microchips — to smartphones.

New Delhi has also rolled out the red carpet to Apple's major suppliers, such as its decision last year to present Young Liu, Foxconn's chair, with the Padma Bhushan, India's third-highest civilian honour.

Indian states with established manufacturing centres have been courting Apple for years. Kharge's overture in 2016-17, later brought Taiwanese supplier Wistron in as the first company to make iPhones, when it launched production of the iPhone SE in Bengaluru.

Around the same time, investment officials in neighbouring Tamil Nadu were making regular visits to Taipei to lure Apple's Taiwanese suppliers. This paid off in 2019 when Foxconn began assembling iPhones at its plant in Sriperumbudur, a town in Tamil Nadu, which had been used for Chinese smartphones, such as Xiaomi and Oppo.

Foxconn is preparing for mass production of Apple's latest smartphone, the iPhone 16 Pro, an indication of how far its relationship with India has developed © Karen Dias/Bloomberg

In 2020, Tata entered the field by making housings, or the backs of phones, at a factory in Hosur, Tamil Nadu, near the Karnataka border. In the run-up to Apple opening its first two Indian stores in Delhi and Mumbai in 2023, Tata emerged as a key local partner. Tata's Croma retail brand is the main reseller of Apple products, a relationship that the conglomerate is now leveraging in its push to become an end-to-end iPhone contractor.

More recently, Tata has bought Wistron's Bengaluru plant and Pegatron's facility in Tamil Nadu, where it secured a 60 per cent controlling stake for an undisclosed amount last month.

But Tata's ambitions extend to semiconductors, and the Indian conglomerate is building an $11bn chip "fab" in the western state of Gujarat, a joint venture with Taiwan's Powerchip Semiconductor Manufacturing Corporation, as well as a chip manufacturing and packaging facility in Assam, a state in the north-east.

Some of Tata's chips may be destined for iPhones in future, according to industry participants and analysts. "Tata Electronics hopes to get the bulk of [Apple's] business in India — not only in terms of phones, but other electronics," says an Indian official with direct knowledge of the matter, who like others, asked not to be named.

"Tata is trying to get as much skin in the game as possible with Apple," says Neil Shah, a Mumbai-based analyst and co-founder of Counterpoint Research. "There is a trust factor with Tata and in India overall."

And with Tata now "going full throttle", Shah predicts India's contribution to global iPhone output, which he says has been growing 27 per cent annually, will cross the 20 per cent contribution milestone this year.

But regardless of the progress made so far, India's dream of getting more business from Apple still faces obstacles.

Much of what Indians call iPhone production is still largely a screwdriver operation, involving the assembly of imported parts. Indian officials know that luring more suppliers is critical to Apple's future in the country.

Some suppliers are starting to make the shift. Last year, US smartphone glassmaker Corning partnered with India's Optiemus Infracom to build manufacturing facility Bharat Innovative Glass Technologies, known as BIG Tech, in Tamil Nadu, set to come online in the second half of this year. While Corning did not mention its future customers, officials in India tell the FT it will be supplying Apple.

In 2019, Foxconn began assembling iPhones at its plant in Sriperumbudur, a town in Tamil Nadu, which had been used for Chinese smartphones, such as Xiaomi and Oppo © Palani Kumar/Reuters

US manufacturer Jabil, another Apple supplier, in September announced an MOU with Tamil Nadu for an expansion of its facility in Tiruchirappalli. Finnish company Salcomp, which produces chargers, displays and other smartphone components for Apple, also has a base in Tamil Nadu.

A plant in Hyderabad set up by Foxconn Interconnect Technology, a unit of the Taiwanese group, will soon start making AirPod earphones in India for the first time, according to industry officials.

Yet the process of moving from China to India remains "difficult and expensive", says a manager at a China-based Apple supply chain partner. The political tension between the two Asian giants makes the shift even more complex.

"China is in a tough spot: everybody keeps talking about companies moving supply chains away from there," says Mary Lovely, a China trade expert at the Peterson Institute. "But they have weak domestic demand and an employment problem, so seeing the equipment being rolled offshore is not something they are going to see as a positive development."

After deadly border clashes between Indian and Chinese troops in 2020, New Delhi responded by banning TikTok and dozens of other Chinese apps as well as imposing draconian restrictions on Chinese foreign direct investment.

Then the Indian authorities made it a requirement for foreign companies from bordering countries to get approval from a government committee before proceeding with any investment.

Though the edict did not name China, EV maker BYD and Apple supplier Luxshare are among the Chinese companies that failed to secure India's blessing to build plants, government officials told the FT last year.

Indian restrictions on granting visas to Chinese citizens also slowed some of Foxconn's and Apple's progress last year, industry officials acknowledge.

But such measures hurt India's ambitions too. Many of the specialised machines used in iPhone assembly plants are programmed in Mandarin, for example, requiring Chinese or Taiwanese employees to be flown in to set them up or fix them if they break. Last year, a visa backlog for Chinese citizens prevented engineers from entering India, which affected Apple and some of its suppliers.

In response, Indian business lobbies pressed the government to relent, and officials tell the FT that visas for Chinese citizens are now more readily available — at least for industries the Modi government is targeting with its PLI schemes.

China is in a tough spot: everybody keeps talking about companies moving supply chains away from there

Another barrier for India in building a successful supply chain is access to reliable labour. Women form the backbone of Apple's manufacturing and assembly operations in China and other Asian markets such as Vietnam. In India, officials say there is a challenge to overcome societal pressures that prevent women from working and to create safe conditions as the country grapples with a rise in gender-based violence.

Tamil Nadu is promoting itself as the best place to employ women in India. The state already has high female education and employment, and thanks to policies such as dedicated bus transport schemes to support safer commuting, it accounts for around 42 per cent of all factory jobs held by women in India.

The state, as well as Foxconn and Tata, is also investing in hostels in Tamil Nadu's two main industrial clusters serving Apple. This is seen as an essential piece of the puzzle for employing qualified women in numbers.

Privately, Indian officials acknowledge how much work they need to do to build a viable supply base with enough scale to support manufacturing of components when the market is still small.

The iPhone 15 was India's top-selling smartphone model in the December quarter, and Apple now claims a 23 per cent share of the market's revenue, ahead of rival Samsung's 22 per cent, according to Counterpoint Research. Yet India remains a relatively small consumer market for Apple, selling less than a quarter of the number of iPhones it sold in China last year, according to independent estimates.

When asked about Apple's plans for India on the company's most recent earnings call, Cook simply noted that the business needed certain "economies of scale" to manufacture for both domestic and export markets.

But he added that the Indian smartphone market showed "a lot of upside".

On the ground, the signs of how far India has come are clear. Bank of America's Mohan points specifically to the manufacturing of the iPhone 16 Pro: "The fact that India is now making Apple's most advanced iPhone model is testament to the fact that they have been able to ramp successfully."

Additional reporting by Ryan McMorrow and Wenjie Ding in Beijing

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Batteries

Europe risks becoming ‘assembly plant’ for Chinese battery makers

Bloc needs a regulatory framework to ensure skills transfer from Asian companies, warns report

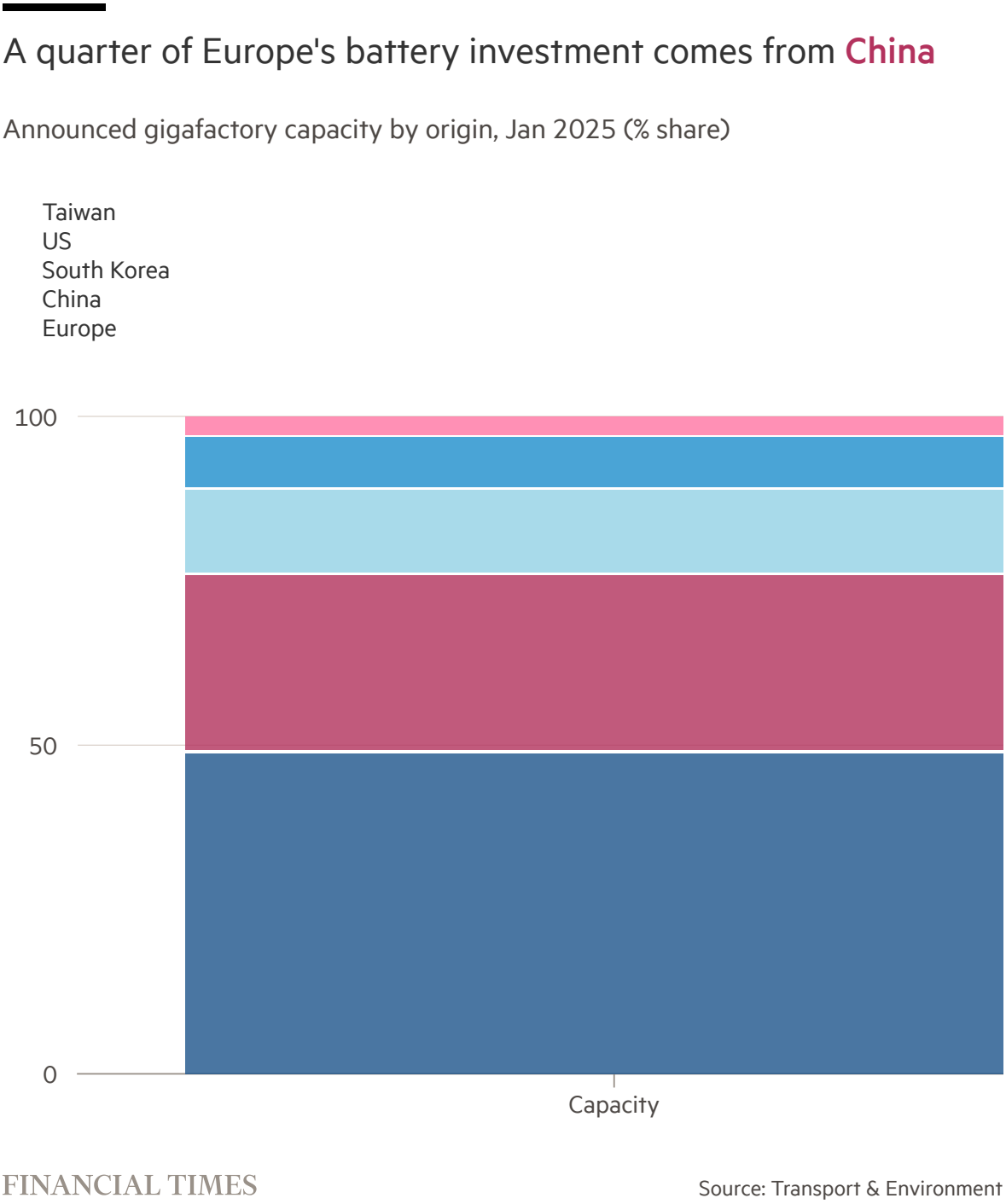
Ian Johnston in Paris and **Kana Inagaki** in Tokyo YESTERDAY

Europe risks becoming “an assembly plant” for Chinese battery manufacturers unless the continent puts in place regulations that ensure technology and skills transfer in return for state aid, according to a new study.

Transport & Environment, an environmental campaign group, has warned that current partnerships between Chinese battery makers and European car companies were too focused on securing short-term battery supplies without any regulatory framework for knowledge sharing, leading to geopolitical and security risks down the road.

“We can spend another 10 or 15 years trying and failing with companies like Northvolt,” Julia Poliscanova, senior director at T&E, said. “Or we can [benefit from] where there is expertise and use it to catch up quickly, just like the Chinese actually did in the last 20 years.”

The warning comes as Europe is scrambling to recraft its strategy to reduce its reliance on China by building local supply chains for green technologies. Its ambitions took a hit with the recent collapse of Northvolt, the continent’s biggest battery hope.



To fill the gap, more European carmakers are partnering with Chinese battery makers to ensure battery supplies for the aggressive rollout of electric cars to meet tougher emissions rules.

In December, Stellantis said it would build a €4.1bn lithium battery factory in Spain with China’s CATL, the world’s largest battery maker. According to the Spanish government, the project had received almost €300mn in state aid. But no conditions on technology or skills transfer were set.

Stellantis said it would not comment on its contract with CATL.

Volkswagen is also collaborating with China's Gotion High-tech for its battery plant in Salzgitter. The German carmaker became Gotion's largest shareholder when its Chinese subsidiary invested €1.1bn in 2020, but there appears to be little intellectual property or knowledge transfer, according to T&E's study.

Volkswagen said there was "considerable knowledge transfer" between the partners, including shared and separate IPs as well as staff exchanges.

"Without more European requirements, we just won't learn. We'll just be an assembly plant," Poliscanova added.

The Gotion High-tech booth at the China International Supply Chain Expo in Beijing in November. VW is collaborating with the Chinese group for its battery plant in Salzgitter © Zhao Wenyu/China News Service/VCG/Reuters

More than 90 per cent of electric vehicle and storage batteries are produced by South Korean and Chinese companies, while a further 40 per cent of confirmed battery gigafactories are provided by the same Asian players, according to the campaign group.

US carmakers have opted to partner with Korean battery makers, with Ford, which also has a partnership with China's CATL, striking a joint venture with SK. General Motors has paired up with Samsung SDI. In cases where they have partnered with Chinese manufacturers such as BYD, Washington has set requirements for skills transfer and control over the tie-ups.

Brussels now wants Chinese companies to transfer intellectual property to European businesses in return for EU subsidies and is reviewing its regulations. But the requirements being considered are at a much smaller scale compared with the ones enforced in China as well as in the US.

A Volkswagen ID. Buzz self-driving autonomous battery electric van on display at the AutoSalon motor show in Brussels in January © Sjoerd van der Wal/Getty Images

The warning comes at the very moment that European companies are trying to catch up with Asian companies, but are facing a slowdown in demand for EVs in the region and a squeeze on funding.

Yann Vincent, chief executive of French battery maker Automotive Cells Company, told the Financial Times that the Stellantis, Mercedes-Benz and TotalEnergies-backed joint venture, recently paused plans to expand its manufacturing footprint from its Dunkirk base to factories in Germany and Italy because of a slowdown in the EV market.

This meant that €4bn of project financing agreed for the expansion was no longer available, and the company instead agreed a €845mn bank loan guaranteed by Mercedes and Stellantis to continue to develop its Dunkirk based sites.

“We saw that the market was slowing down and so we had to be careful with massive investments,” said Vincent.

Benoit Lemaignan, chief executive of another French battery start-up Verkor, said that the slowdown in EV demand had also made financing more difficult.

To respond to financing pressures in the industry, ACC is considering developing a low-cost battery that would be based on lithium-iron-phosphate technology, a cheaper but less dense battery similar to the technology developed by CATL. However, Vincent warned there was “no certainty on whether it would be possible”.

Workers produce structural components of power batteries for new energy vehicles at a production workshop of an intelligent manufacturing enterprise in Qingkou Automobile Industrial Park in Fuzhou, China © Costfoto/NurPhoto/Getty Images

Chinese pioneers are far ahead in this sector of the industry, and Northvolt and other European companies have so far focused on nickel-manganese-cobalt batteries, which are expensive but require less frequent charging.

Another main challenge for European companies was the production of batteries at scale, according to Marc Alochet, a former car sector engineer and researcher at France’s École Polytechnique.

He supported the prospect of skills transfers across the “entire value chain” of battery development, pointing out that China had demanded transfers from European carmakers manufacturing in the country at the beginning of the century.

“The delay is very significant but that would help allow [European companies] to accelerate their ramp-up,” he added.

Opinion **Business Insight**

BYD's strategy shift is bad news for global automakers

The Chinese company is undercutting rivals by making advanced driver assistance systems a standard feature at no extra cost

JUNE YOON

BYD's first electric vehicle factory in south-east Asia. Safety sells but can it still be sold when the Chinese company is challenging the pricing strategy that rivals have relied on? © Chalinee Thirasupa/Reuters

June Yoon AN HOUR AGO

There was a time when seatbelts in cars were optional. Airbags, too, were once considered a luxury, reserved for high-end models. Now, we wouldn't think of driving without them.

Safety, once a premium feature, evolved into a necessity — an industry standard that automakers could no longer charge extra for. The same shift may be under way for self-driving technology, and one company is forcing the industry's hand. BYD, the world's largest electric vehicle maker, is making advanced driver assistance systems a standard feature across most of its line-up — at no additional cost.

For years, carmakers have looked to driver assistance software as the key to offsetting declining hardware margins. This held promise as a cash cow, much like tech companies monetise cloud services, a high-margin add-on that would generate billions in new revenue. Tesla, for example, charges $8,000 for its driver assistance software in the US as of April. Mercedes-Benz and GM are among many carmakers banking on monetising assisted driving technology.

There are inherent risks to self-driving software, from technology failures to potential cyber security threats. But unlike fully autonomous vehicles, which remain controversial and unproven at scale, advanced driver assistance systems — which enhance rather than replace human control — have already demonstrated their value.

Studies suggest that these systems, which include highway and traffic assist systems, automatic emergency braking and forward collision warnings, could significantly improve road safety. Research from the Insurance Institute for Highway Safety has shown that cars with these features can reduce rear-end collision involvement rates by up to 50 per cent. Wider adoption could reduce accident frequency by around a quarter, according to research in the UK, while the most common types of accidents would be reduced by 29 per cent with full deployment.

Assuming a conservative 30 per cent adoption rate and a $5,000 fee per vehicle, a carmaker selling 10mn cars annually could potentially generate $15bn in revenue a year from self-driving features alone. Some carmakers have introduced subscription models: Tesla, for example, charges $99 a month, which helps generate recurring revenue long after a car is sold. Scale that adoption further — as technology advances and consumer scepticism declines — and the financial potential becomes even more compelling. That explains why automakers have been so eager to monetise the technology. Safety sells. The question now is: can it still be sold?

BYD is making that question harder to answer. By including advanced driver assistance systems as standard across its line-up — even on its $9,500 Seagull EV — BYD is challenging the pricing strategy that rivals have relied on.

Automakers will find it increasingly difficult to justify charging for software in markets where BYD is offering it as standard. The longer-term consequences could be even more disruptive. If BYD's move forces rivals to slash software prices — or abandon paid models entirely — the industry's vision of AI-powered, high-margin profits may never fully materialise.

Not all markets will be affected equally. In the US, where tech rivalry with China is intensifying and BYD has little presence, restrictions on its driving software — justified on national security grounds — are likely. Such measures would effectively shield automakers' software-driven sales in the US from immediate disruption.

But that would only delay the inevitable. BYD's global expansion is already gaining momentum. In the UK, BYD outsold Tesla in January, with sales growing sixfold from the previous year, while Tesla's fell 8 per cent. In Singapore, BYD has overtaken Toyota as the best-selling car brand in the city-state, a feat given this includes both EVs and petrol cars. In Brazil, the story is much the same with sales growing fourfold last year.

Now, with each new market it enters, BYD won't just be selling more cars, it could start to redefine industry expectations. History suggests that once a technology becomes indispensable, the premium disappears. Power windows, anti-lock brakes, rear-view cameras — all were once luxury features that have become standard. Once consumers get used to something as standard, there is no turning back. Just like seatbelts.

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Sovereign bonds

Bond investors brace for Europe's defence spending 'bazooka'

Sovereign debt yield curves at their steepest in more than two years as investors anticipate more supply

British soldiers taking part in a Nato training exercise in Romania on Monday. European defence shares surged this week as investors anticipated greater defence spending © Getty Images

Ian Smith, Senior Markets Correspondent YESTERDAY

Europe's plan to spend more on its defence has fuelled a rise in countries' long-term borrowing costs, investors say, adding to expectations that they will increase debt issuance.

Long-term borrowing costs for big economies such as Germany and the UK have been rising in recent months, driven partly by expectations of more sovereign debt supply.

Bets on increased defence spending have provided the latest catalyst, as US President Donald Trump pushes to end the Ukraine war and warns the region that it has been underpaying for its security. Yield curves on European sovereign debt have reached their steepest in two years this month, as long-term borrowing costs rise faster than short-term yields — a proxy for supply expectations.

"Higher deficits are coming, with the need to grow defence spending," said Mark Dowding, chief investment officer for fixed income at RBC BlueBay Asset Management.

That, he said, was mixing with inflation risks and an "uncertainty premium" brought in with the new US administration to push up long-term borrowing costs.

Germany's yield curve steepens

Ten-year bund yield minus two-year bund yield, percentage points

Source: LSEG

RBC BlueBay has bet on steeper yield curves in Europe and the US this year, a popular bet for asset managers.

Germany's 10-year bond yield has climbed above 2.5 per cent, from just above 2 per cent at the start of December. Its spread over two-year yields has reached close to 0.4 percentage points, the biggest gap since late 2022. Anticipation of growing defence spending has piled on top of speculation in markets that the country will reform its constitutional "debt brake" and increase borrowing to back a fiscal stimulus package, following elections on Sunday.

"Although Germany has a low fiscal deficit, pressure to move wider on the long end comes as an increase in defence spending and uncertainty on the release of the debt brake portend more borrowing and wider deficits," said Mitch Reznick, a fund manager at Federated Hermes, which is also running steepener trades on European debt.

The recent rise in long-term borrowing costs reflects "primarily the risk that the EU will need to announce a spending bazooka to meet its defence commitments", said Pooja Kumra, a rates strategist at TD Securities.

Defence shares have surged this week, as investors moved to anticipate greater defence spending. But there is not yet clarity on the extent of the extra spending or how it will be funded.

The EU said last week it would temporarily ease its fiscal rules to allow countries to spend more on their defence. The UK has promised to set out a "pathway" to increase defence spending from 2.3 per cent to 2.5 per cent of GDP, but a move to loosen fiscal rules only established in October might be poorly received by investors.

"It's another upward source of funding pressure on debt-to-GDP [ratios]," said Frank Gill, sector lead for European sovereigns at rating agency S&P. The EU, he said, needed a financing "initiative quickly to show that they are serious about increasing defence spending at the European level".

Some form of joint debt issuance by European governments, potentially including the UK and Norway, is one of the options under consideration by officials.

Additional reporting by Paola Tamma in Brussels
