

# Green Cars – Low Wages: Changing Value Chains in the Automotive Industry in China

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“In the automobile industry, a constantly diminishing number of workers produces, decade by decade, a growing number of increasingly degraded products which, as they are placed upon the streets and highways, poison and disrupt the entire social atmosphere – while at the same time the cities where motor vehicles are produced become centers of degraded labor on the one hand and permanent unemployment on the other. It is a measure of manner in which capitalist standards have diverged from human standards that this situation is seen as representing a high degree of “economic efficiency”.

Harry Braverman, *Labor and Monopoly Capital*, 1974, p. 141

# Outline

- 1.) Conceptual approach: Changing production networks in the global car industry
- 2.) Existing structure of the Chinese car industry and its model of regulation
- 3.) Disruptive forces: new players and models of regulation
- 4.) Implications for production and work
- 5.) Conclusions

# Post-Fordist car industry under stress

- Structural overcapacity in the wake of the global financial crisis 2008-09; emerging markets as “safety valve”
- China’s “New Normal”: economic and ecological limits of growth
- VW diesel scandal: “Fukushima of the car industry”?
- Disruptive technologies: new energy vehicles, digital driving, new mobility, digital manufacturing
- IT and Internet giants as drivers (Apple, Google, Uber, BAT)
- Financialization of innovation (VC, PE, IPOs)
- New productive models emerging, break with the refurbished Fordism of global carmakers
- Post-Covid 19: intensified competition and restructuring

# The late revenge of Wintelism?

- Rapid emergence of new norms of production and consumption similar to the IT industry in the 1990s
- The Wintel revolution: separation of product innovation from manufacturing (Microsoft, Intel, Cisco, Apple)
- Platform-based mobility-on-demand as norm of consumption
- Global production networks and contract manufacturing (the Foxconn connection)
- Toyotism: resilience of the “assembly-oriented model of innovation and market control” in the auto industry (Borrus/Zysman 1997)
- Will the car industry undergo a similar process of vertical disintegration as IT 30 years ago?

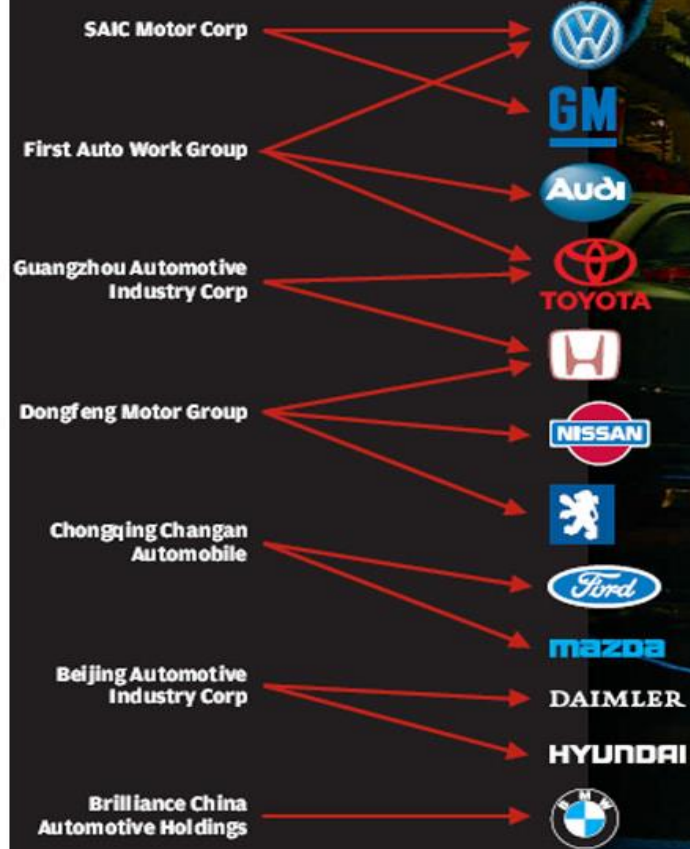
“Uber should be a \$500bn company in 10 years that owns transportation in the way Amazon owns retail and Apple owns personal technology”  
(Bradley Tusk, Uber advisor and shareholder, FT June 15, 2017)

# Joint ventures: refurbished state capitalism and triple alliances

## Start your engines

Fiat's proposed joint venture will give it a foothold in the massive mainland car market after its first attempt failed

Joint ventures between mainland and overseas carmakers



# China auto industry regime of accumulation 2000-2015

- Rapid capital intensification in the wake of restructuring of SOE and market expansion
- State-of-the-art neo-Taylorist production models („flexible standardization“)
- Capacity build up in the wake of enormous demand growth, partly subsidized by state
- Structural overcapacities, „classic“ overaccumulation scenario of the auto sector ahead
- Ecological growth limits have been reached, but no substantial change in the regime of accumulation!
- Outsourcing and new production systems to cope with overcapacities (e.g. VW production system)



# Disruptive forces

- Independent indigenous car makers (private, hybrid, local state-owned)
- Integrated new energy (BYD) and battery producers (CATV, battery makers in PRD)
- MIIT's push for battery-driven NEV (vs. hybrid and fuel cell), "Made in China 2025"
- Digital car start ups, backed by Internet giants and tycoons (NextEV/NIO, LeEco/Faraday)
- New regional centers: Shenzhen, Hangzhou, Fujian
- Network capitalism vs. globalized state capitalism



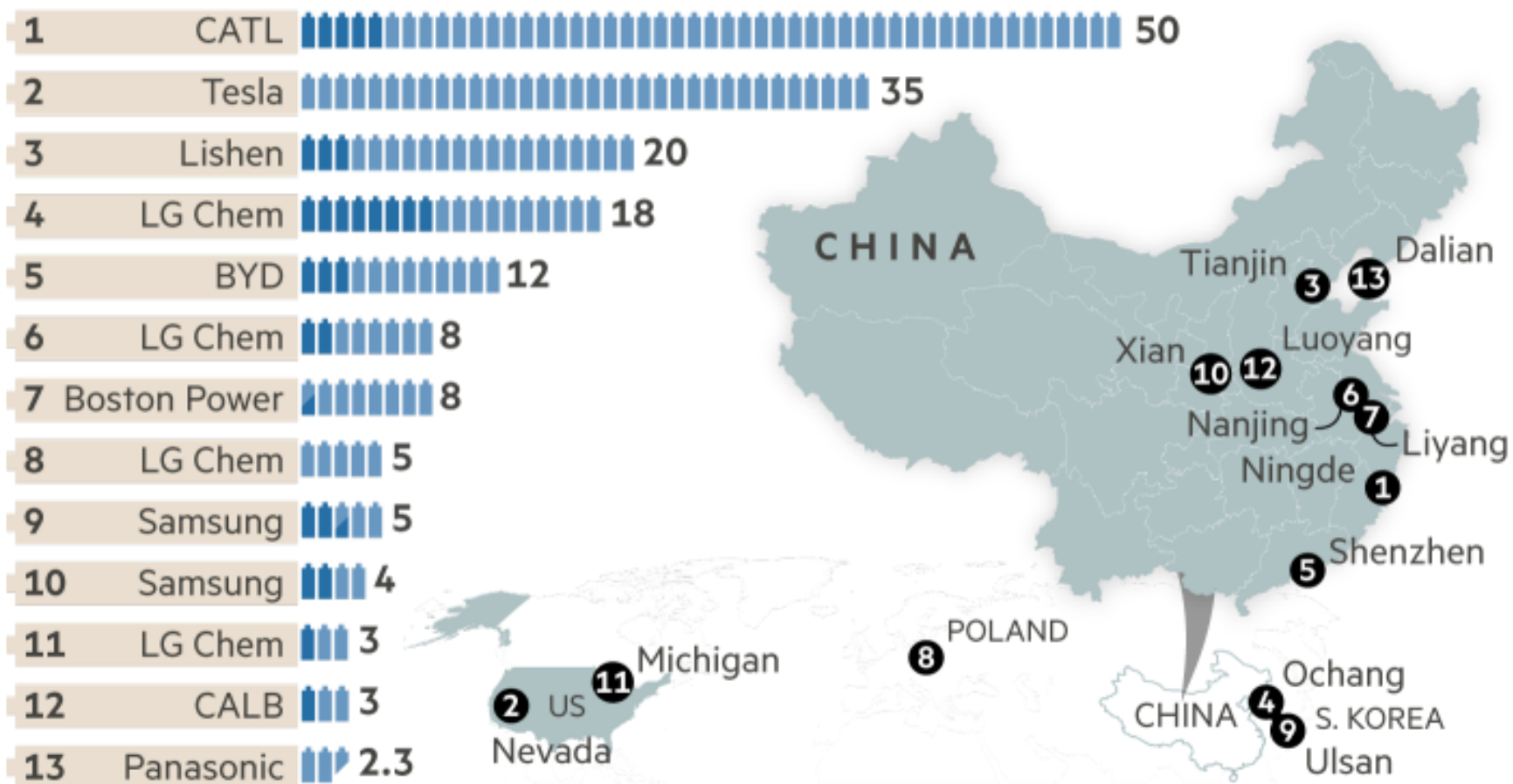
# Key component: LI batteries

- Production infrastructure almost completely in East Asia (Japan, S-Korea, China)
- China has mass production capabilities resulting from IT-battery supply chains
- Vertical integration effects from diverse end markets (solar, grid, house energy systems)
- Potential of flexible specialization, integration with large-scale specialty car production, buses, public transport
- Massive financial support from provincial govts (Fujian, Hubei CSR)
- Structural weakness: high-end battery cell technologies (international acquisitions, e.g. NEV Sweden/CATL)

# Global Li battery manufacturing

A battery\* production boom is set to turbocharge green energy growth

\* Lithium-ion    █ 1 GWh    █ 2016 capacity    █ 2020 forecast



Source: Benchmark Mineral Intelligence

# Key component: digital driving units

- China advanced in 5G internet and artificial intelligence
- BAT as key movers, connected to start ups
- Alliances between BAT and global first-tier suppliers (e.g. Baidu/Conti, Bosch/Alibaba Auto Navi)
- Global suppliers as winners of Wintelization (NIO/Conti)?
- Chinese IT giants as system integrators (digital driving infrastructures, Huawei!)
- **Weakness: China has no globally competitive first-tier car supplier**

# Foxconnization of car manufacturing?

- EV start-ups use contract manufacturing (NIO/JAC)
- Large IT contract manufacturers as potential mass producers for DV and NEV components
- Devaluation of traditional mechanical skills in the auto industry
- Penetration of high-tech, low-wage manufacturing practices into car making
- Chinese NEV and component makers rely on low-wage, de-skilled work models similar to IT manufacturers
- The low-wage nature of the traditional car supply industry in China

# Post Covid-19

- Restructuring massively accelerated
- Global car makers/JV restructure plants and push mass production
- Race for the luxury market (Tesla, NIO, Xpeng)
- New alliances for contract manufacturing (Foxconn EV platform, alliance with Geely)
- Alliances global OEM/global EMS (Stellantis/Foxconn)
- Chinese IT giants entering the field (Huawei, Xiaomi)

# Policy challenges

- Resilience of the joint venture model
- European carmakers: preserving JV privileges and expanding mass production of NEV
- Limited options of vertical re-integration (batteries!)
- Controlling state capitalism: viable regulatory state, separate from government interests as shareholder
- Controlling network capitalism: creating standards for future mobility
- Industrial policy: promoting national standards and diversity at local level (flexible specialization!)
- Labor standards and collective bargaining at car suppliers, NEV makers, and component producers

谢谢大家！