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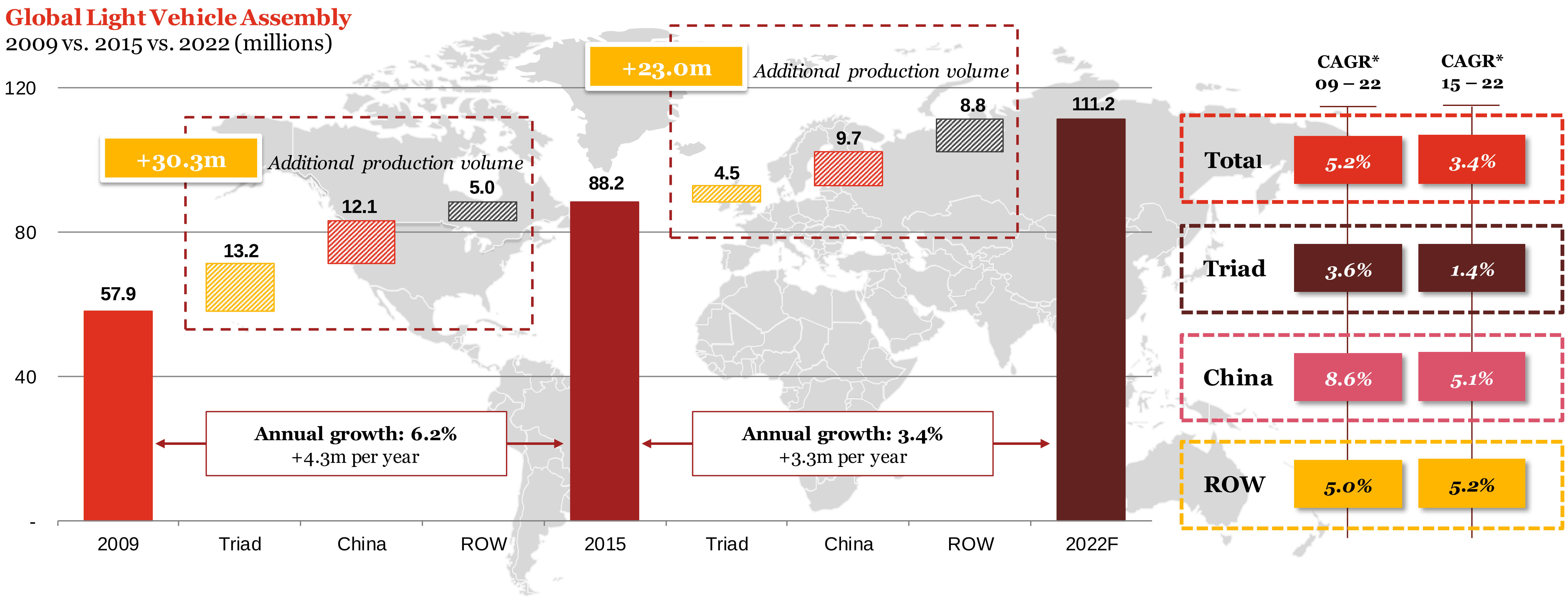
Global Industry Trends & China Market Update

December 2016
Autofacts Seminar

pwc

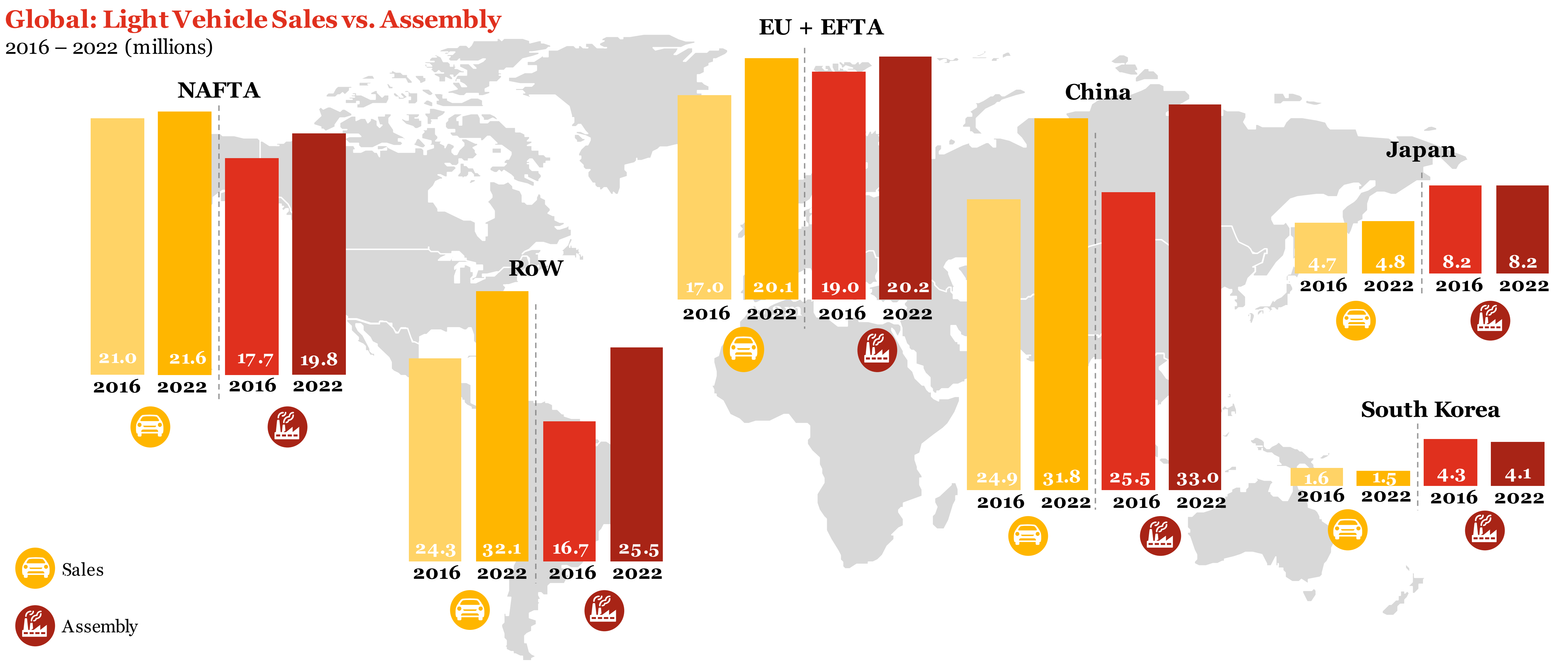
Growth of a Global Industry

The global automotive industry is a growth industry and China continues to be the most important growth driver



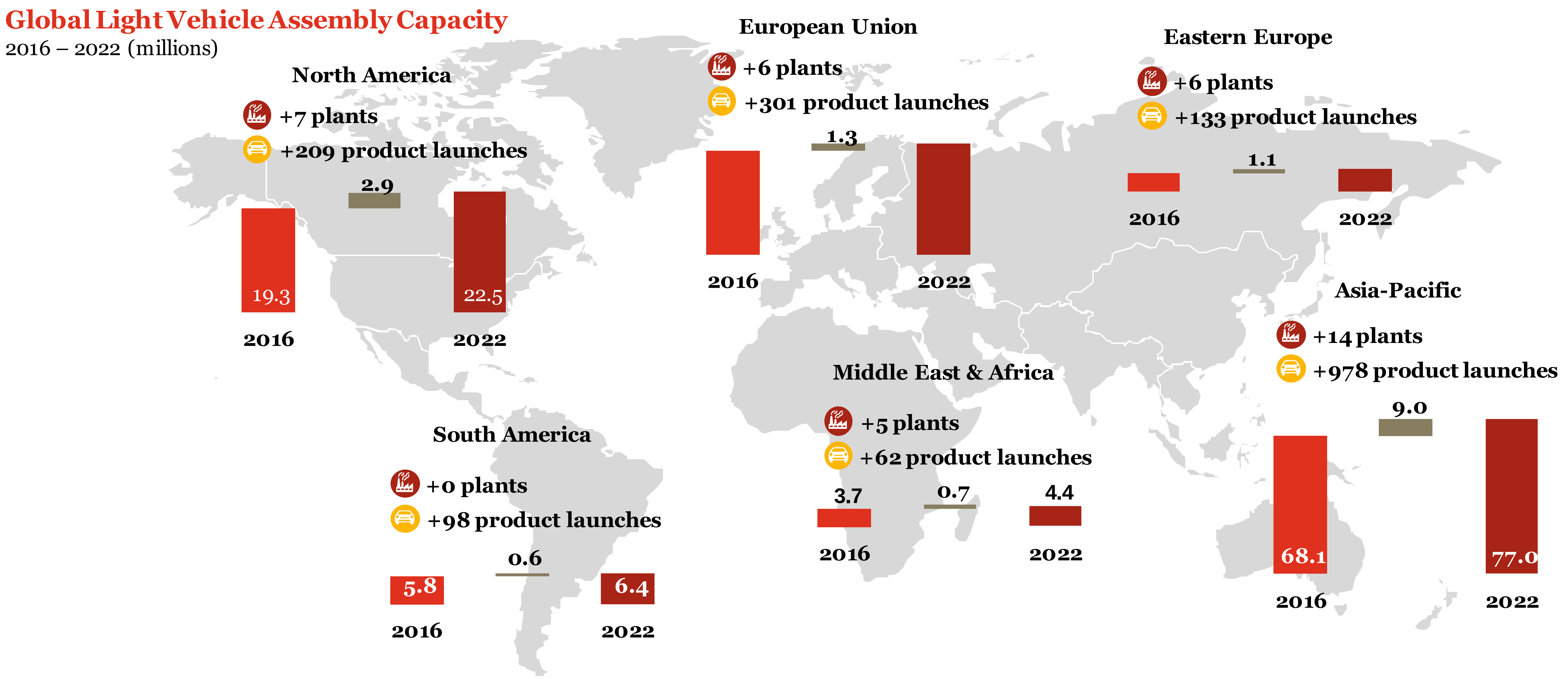
Source: Autofacts 2016 Q4 Forecast Release   Triad = EU, NAFTA, Japan   *Compound Annual Growth Rate

Growth in global vehicle assembly follows demand, but also leverages location factors and free trade agreements



Source: Autofacts Analysis, Autofacts 2016 Q4 Forecast Release

Global production capacity is growing almost exclusively in Asia-Pacific



Source: Autofacts 2016 Q4 Forecast Release

Question

> *Who will be the leading global OEM by assembly volume by 2022?*

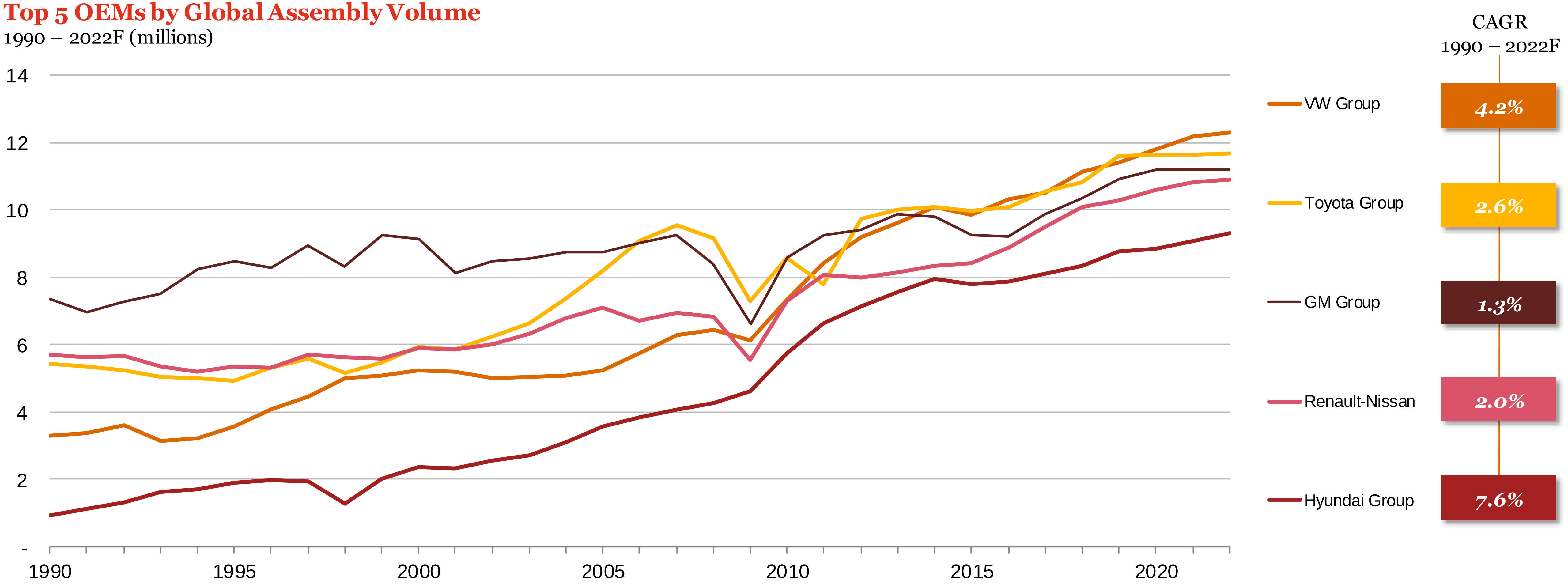
- **a** GM
- **b** VW
- **c** Toyota

?

Top Five OEMS all forecast to capitalise on global demand growth

Top 5 OEMs by Global Assembly Volume

1990 – 2022F (millions)



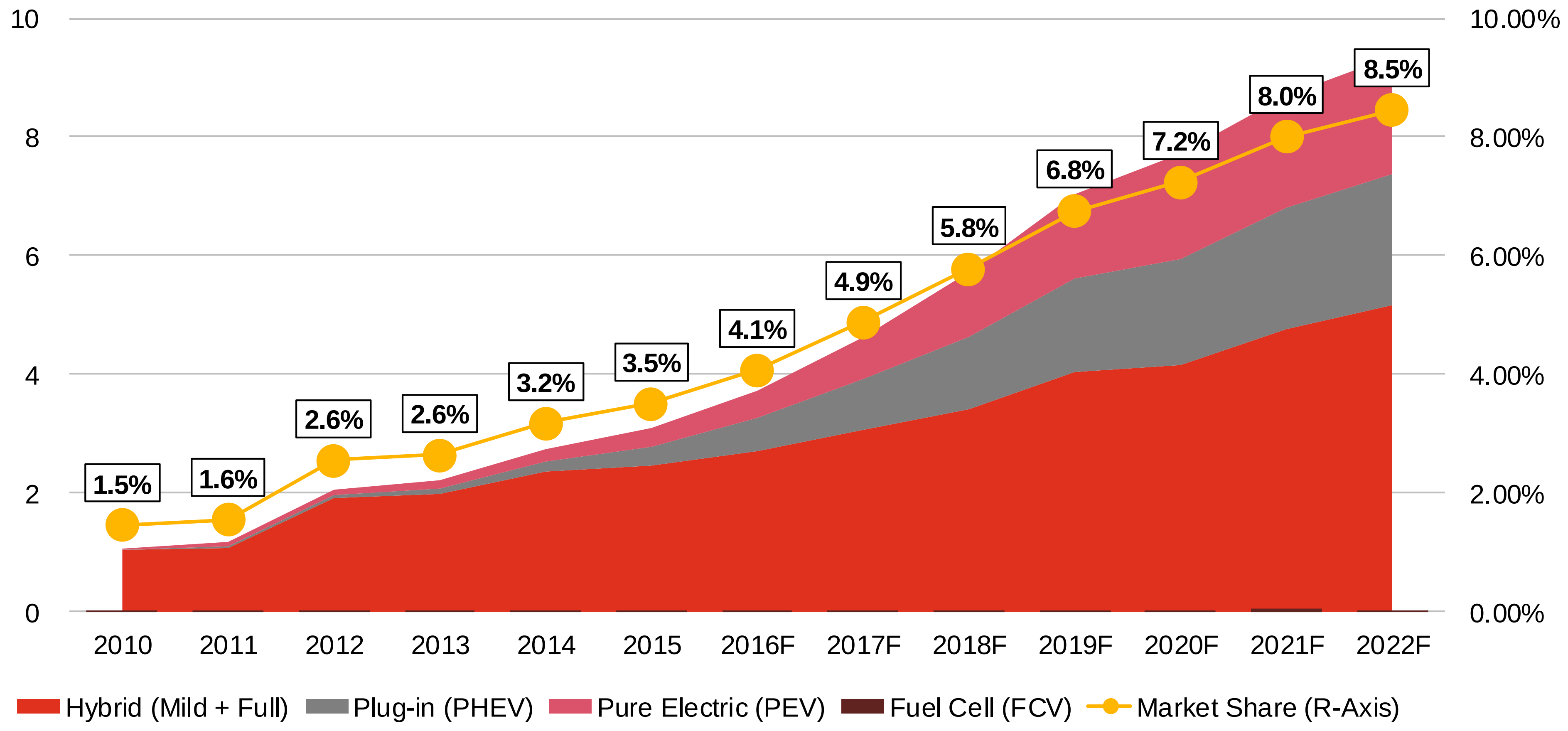
Source: Autofacts 2016 Q4 Forecast Release

Strict fuel economy limits in all major global markets are expected to drive a significant increase in alternative fuel vehicle production

Looming emission standards, particularly in Europe, are expected to drive a significant increase in alternative fuel vehicle production as manufacturers fight low oil prices and waning consumer demand for fuel efficient products.

Alternative Fuel Vehicles

2010 – 2022F (millions)



Source: Autofacts 2016 Q4 Forecast Release *Includes mild & full hybrid

China Automotive market 2016 and beyond

Economy outlook – A slow but sustainable growth will be the trend in the following few years. Challenge will be coexist with opportunities.

Industries upgrade

Expanding Service Industry

Potential Domestic Consumption

Acceleration in Urbanization

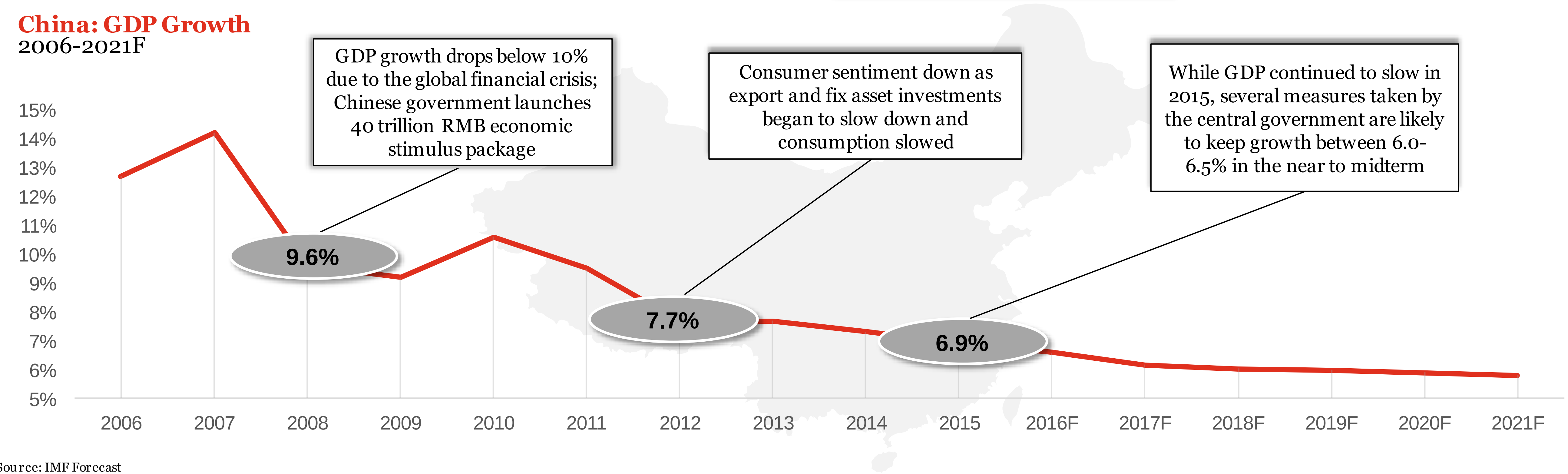
Credit and Corporate Debts

Excess capacity

Housing Bust Risk

Lack of Technology Innovation

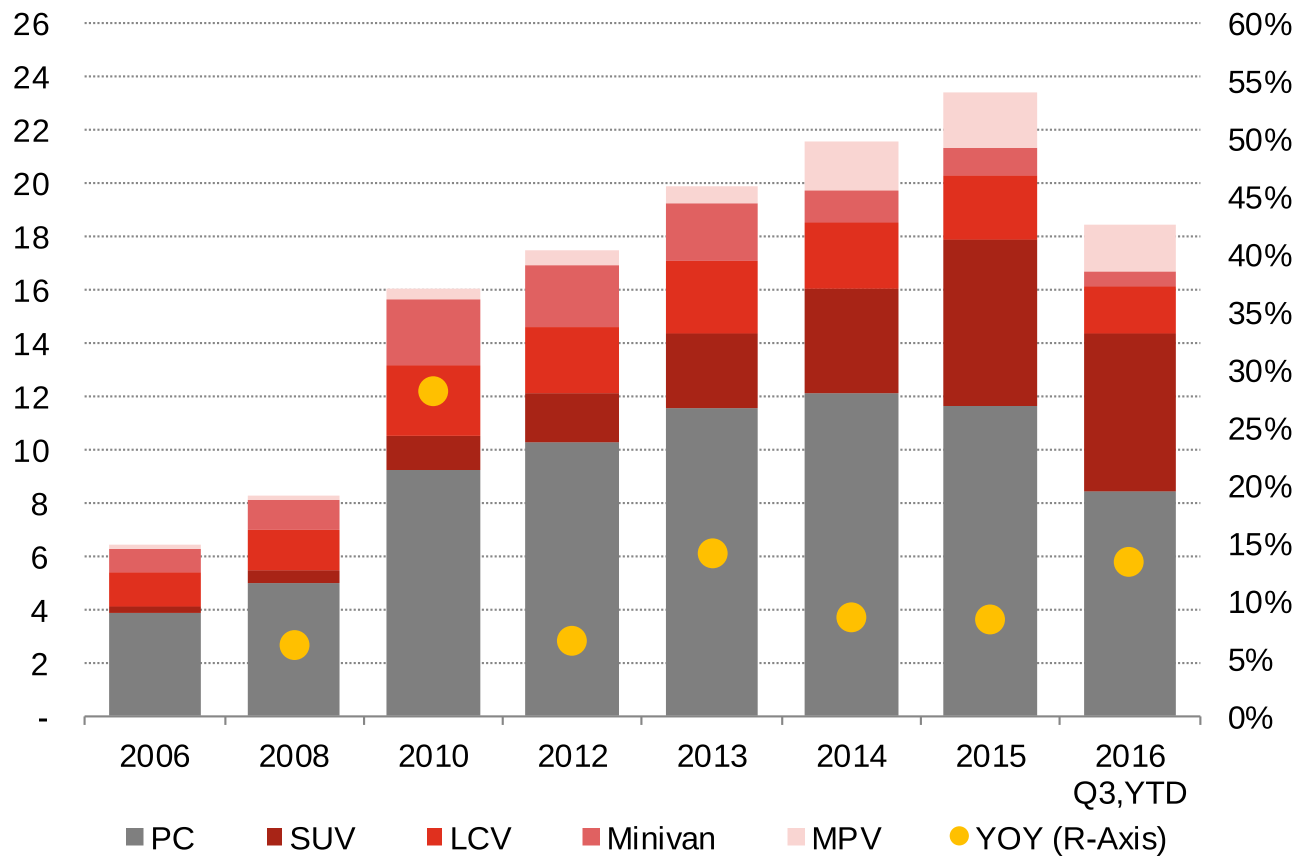
China: GDP Growth
2006-2021F



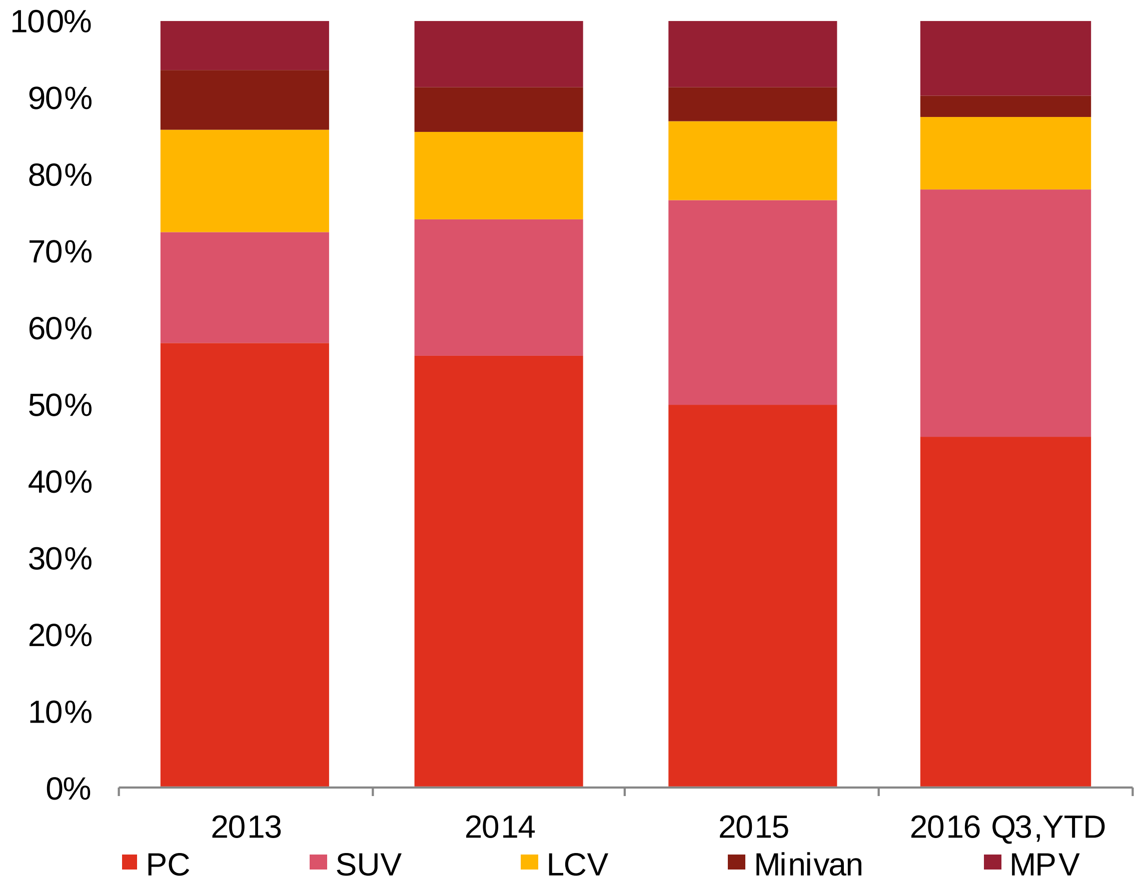
Source: IMF Forecast

Driven by SUVs， the YOY sales growth reach 13.3% by September.Passenger car was up 2.8%, SUV increased 45.1%, MPV was up 23.4%, minivan was down 31.5% and LCV almost have no changes in the volume

China: Light Vehicles Sales by Segment
2004 – 2016 (Millions)



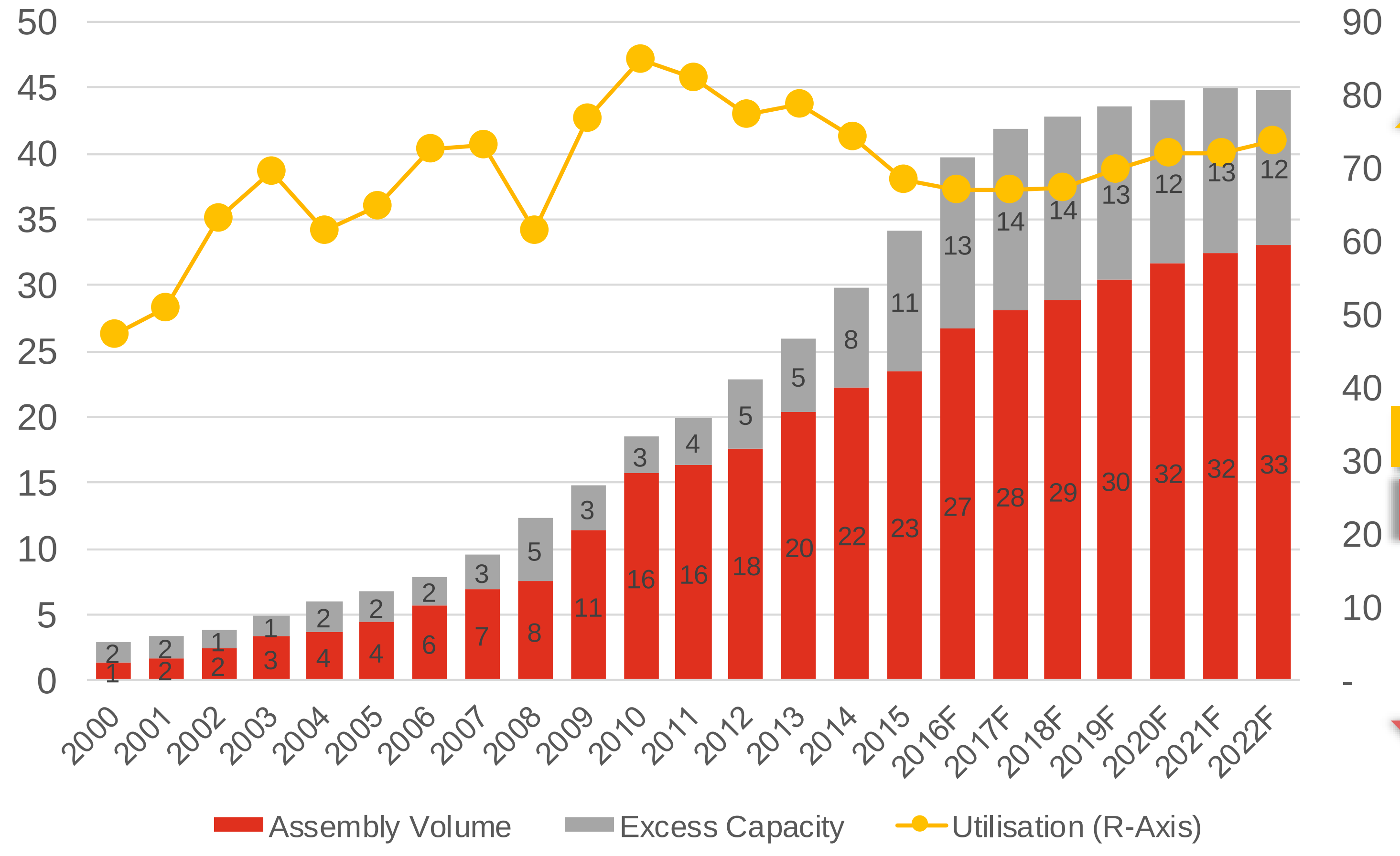
China: Sales by Segment
2013 – 2016 (% Share)



Source: CBU

Autofacts expects 13.9 % growth in 2016 due to continuous tax stimulus and ~5.1% cagr growth between 2015 and 2022

China : Light Vehicle Assembly
2000 – 2022 (Millions)



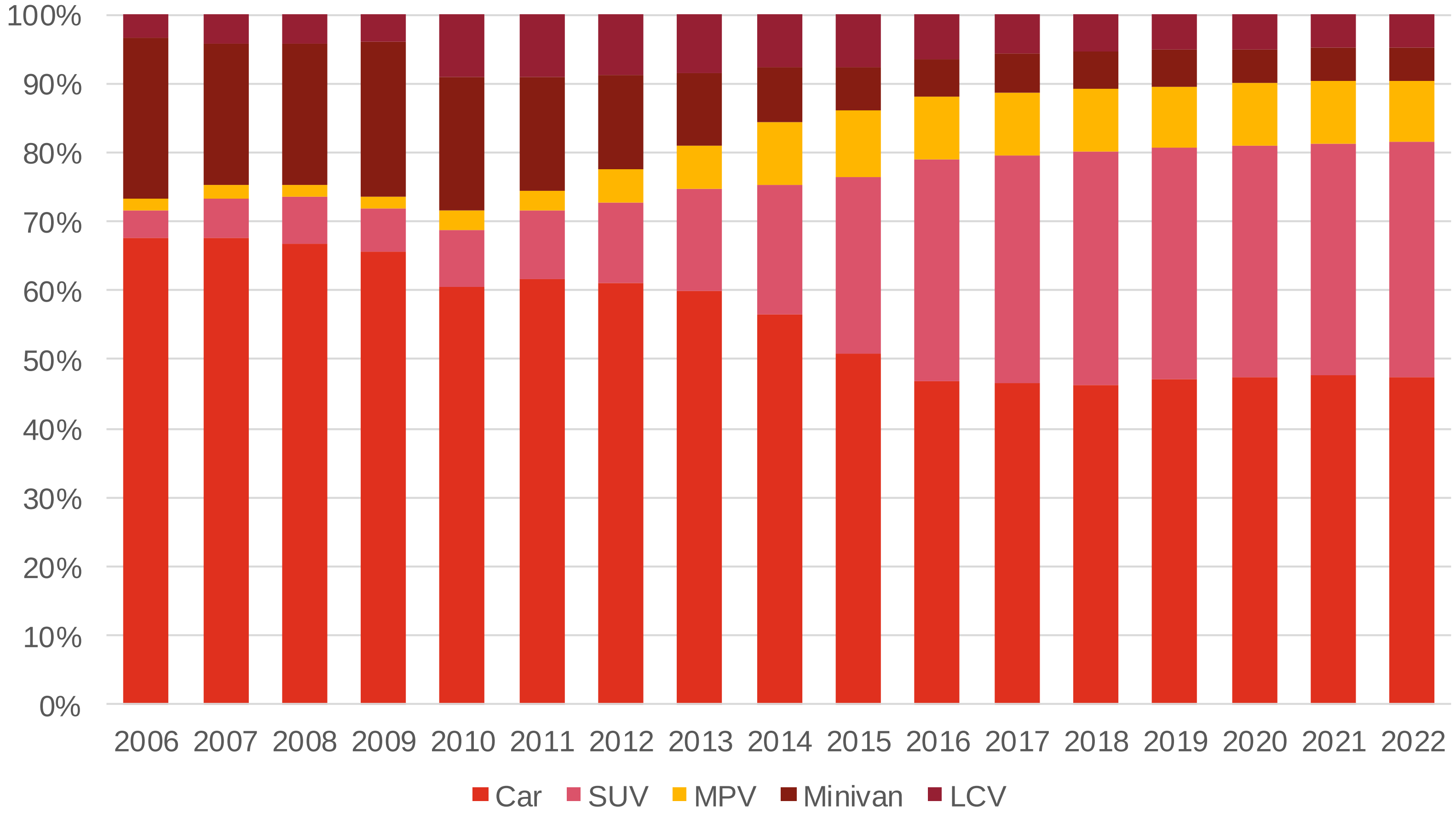
Source: Autofacts Forecast

- The integration in automobile industry do benefits to solve the problems in excess capacity for the domestic brands.
- Tier 2 and Tier 3 cities have unlimited potency to be developed . Also, the demands for the premium vehicles in tier 1 cities is another profitable market.
- NEV is still booming the automotive market with a dramatically growth thanks to a series of favour policies.

- Tax cut for vehicles below 1.6L will be expired by the end of 2016 taking the knock for overall market.
- OEMs are facing technology difficulties in stricter emission reduction standard.
- Uncertainty in China macro economy influence the purchasing power directly

2006-2022 Product structure evolvement underlines trends of demographic structure changes and consumption upgrade

China: Assembly by segment
2006-2022F



Source: Autofacts 2016 Q4 Forecast Release

PwC Insights

- With the stabilized demands and Product offering, the phenomenal growth of SUV will moderate, but growth rate is still expected to top all segments.
- Passenger car will keep the leading positioning in volume. An increasing numbers of variant models will be launched into the market to add its practicability. 41% of the domestic assembled vehicles is expected to be sedan by 2022.
- Despte its past growth, OEMs are still lacking confidence in MPV sector
- LCV will witness a decrease period since 2016 to 2022 and the CAGR figure is negative (-2.2%).

New dynamics to appear when the market turn matured and competition landscape changes

1 Growth moderated

- Market will continue the slowdown however some segments will grow higher
- Consumption upgrade favored segments: middle sized and large car, SUV, MPV, luxury cars will enjoy higher growth
- Government backed NEV sector will continue hyper growth in short term, however, with a clear schedule of exist of policy stimulus, sector growth remains uncertainty

2 Consolidation expected

- At present, this industry suffers from excess capacity, especially in large state-owned enterprises and small and medium-sized companies.
- Since automobile industry will be integrated, it will be hard to survive for some weak small and medium sized automobile companies.
- The efficiency of automobile industry could be raised by eliminating excess capacity and effective integration.

3 Aftermarket to be take off

- The Chinese market begins to reflect some dynamics in matured market: the take off of after-market, opportunities will appear in such fields as automobile finance, second-hand car, maintenance, and automobile E-commerce.
- Further development of after-market requires a set of optimizing mechanism for the whole industry

4 New Business generated

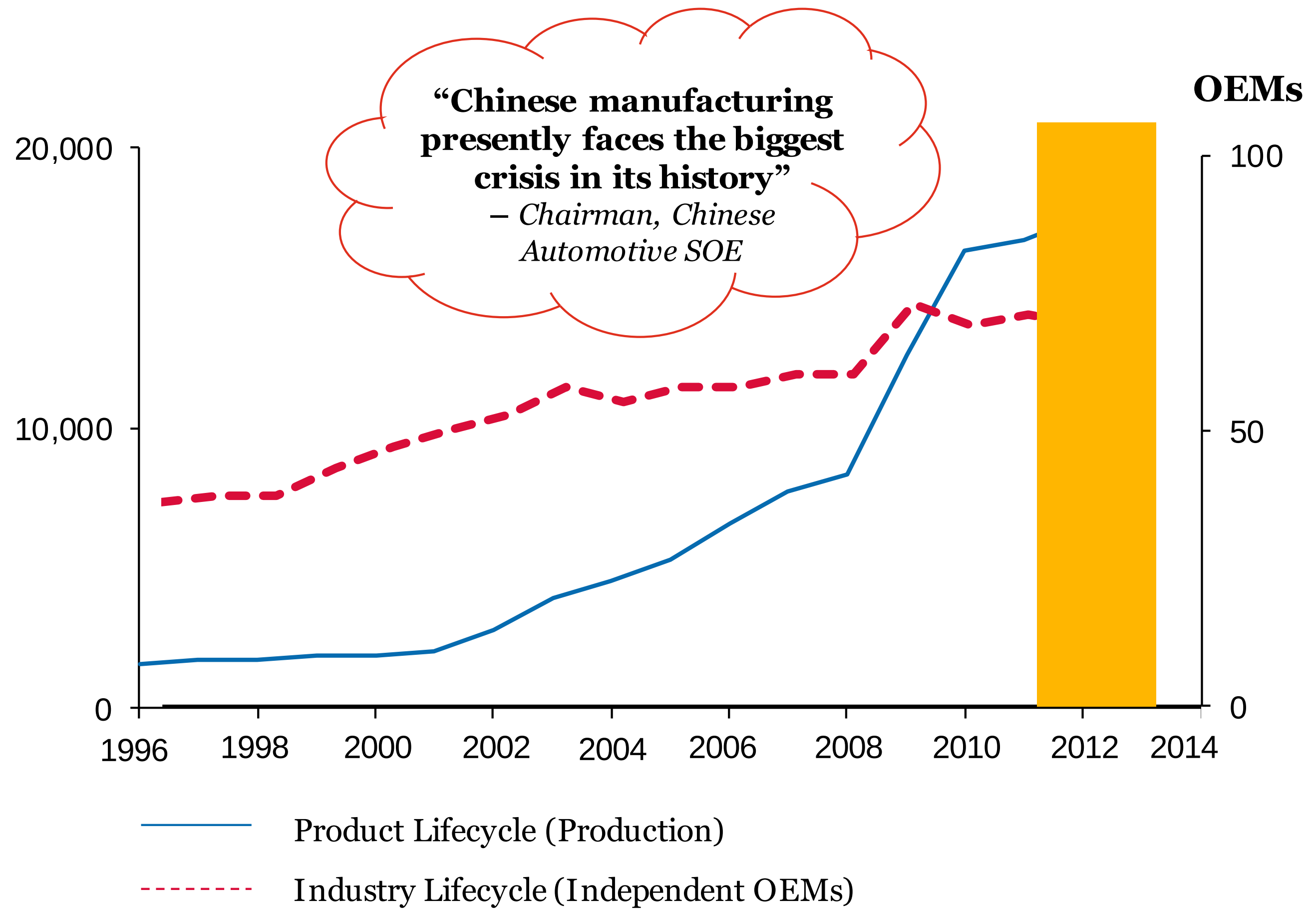
- Consumers' shift from car ownership to car utilizing will fundamentally change the industry, breeding a series of new business, car sharing, Intelligent drive, and car connection

Source : PwC Analysis

The Chinese automotive industry is at a major inflection point

China: Industry Dynamics

1996 -2014 (Thousands)



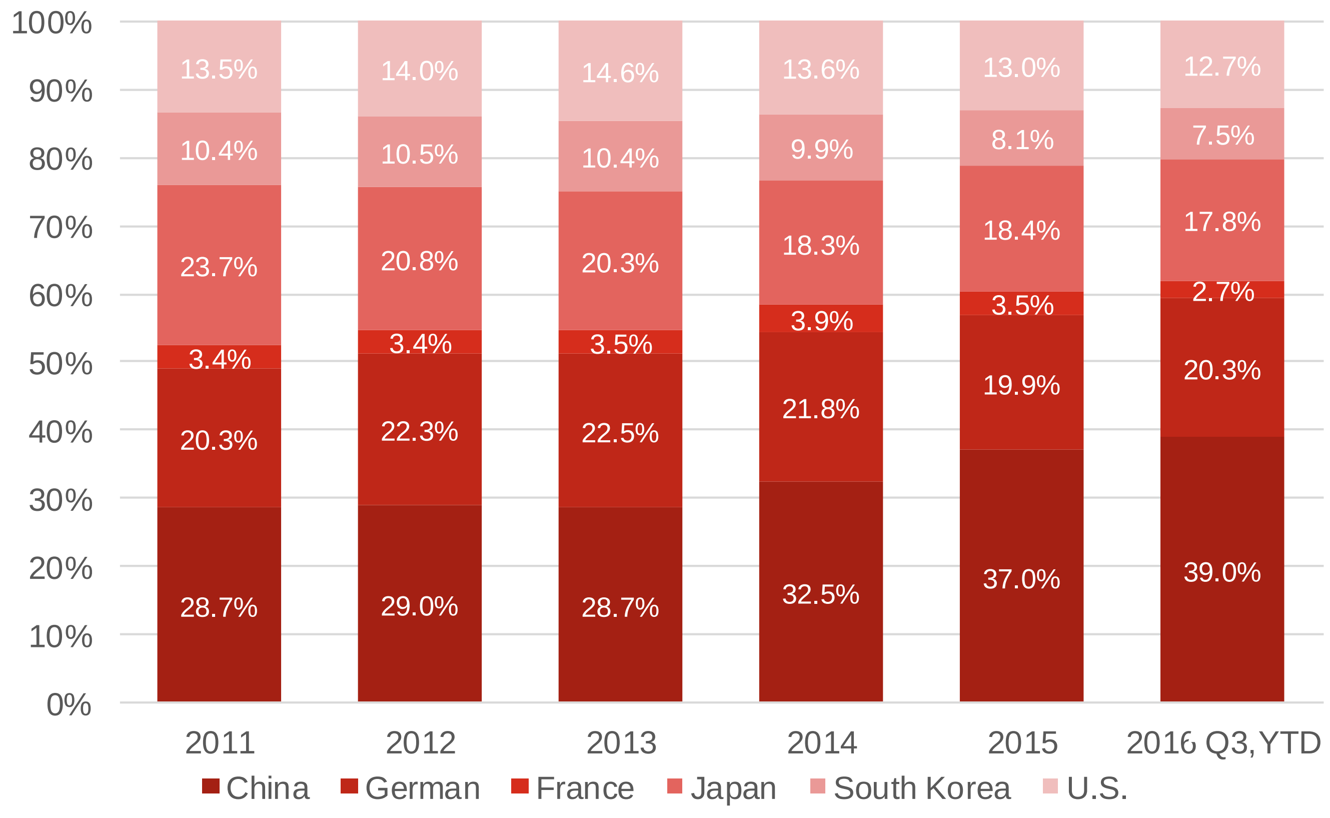
Source: Global Insight, Literature Research, PwC Strategy& analysis

PwC Insights

- Annual sales expected to slow down from 21% CAGR (2004-2014) to ~6% CAGR in the next decade (2015-2025)
- The product and industry lifecycles are beginning to decouple, suggesting that an (orderly) shake-out may be imminent
- Competitive dynamics will start to resemble those elsewhere
  - Emergence of used vehicles and lease/ finance
  - Price and margin pressure
  - High level of overcapacity

Competition Landscape: Market Share Gained by Chinese OEMs

China : Market share by brand origin
2011-2016Q3



Source: CBU

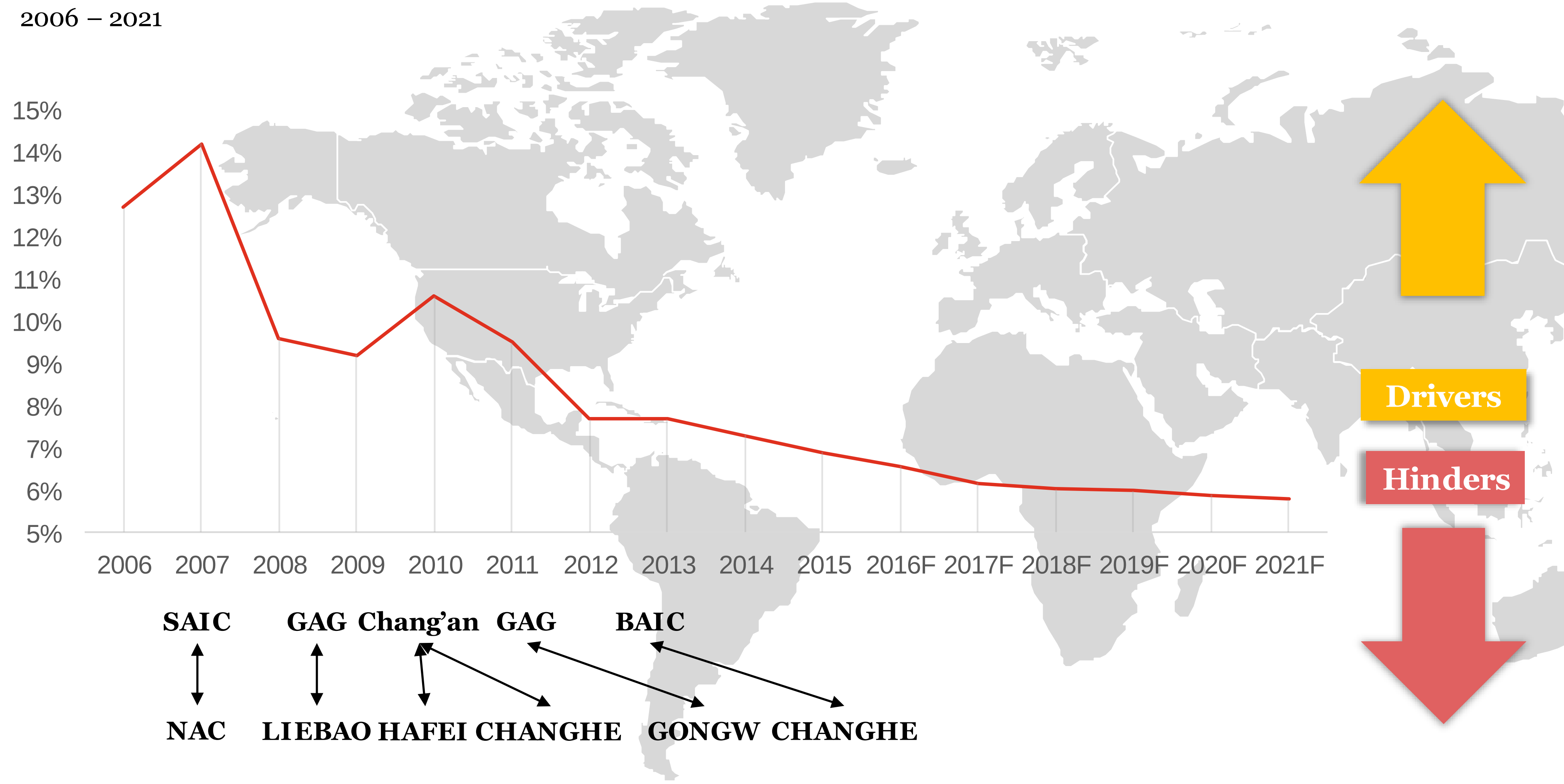
PwC Insights

- The diesel emission turmoil cause the loss of the market share of Germany brands in 2015 .However ,the effect has gradually passed.
- The development of domestic brands were impressive thanks to the improved manufacturing technology and comprehensive product profile
- The deep anti Japanese sentiment in China continues to negatively impacts Japanese vehicles' growth in the Chinese market..
- Korean brands lack premium products which do harm to the brand image.
- The market share of U.S brands are stable. Also , U.S automakers are investing more in Turbo charged engine to get rid of impression of large displacement and high fuel consumption

Competition Landscape: Industry Consolidation Slowed

China : GDP Growth

2006 – 2021



- Due to the shell companies problems, small automakers will be closed or acquired.
- The inefficient capacities is required to be eliminated.
- As for the tier1 automakers, integration is one of the most efficient method for domestic brands to expand their capacity, product line and company scale

- The local government is possible to protect the development of local automakers
- The integration of corporate culture is one of the key factor influencing the result of M&A

Source: Autofacts 2016 Q4 Forecast Release

Competition Landscape: New Entrants to the Market

Traditional Value Chain Player

Wangxiang & SAIC/BMW

- Automotive Parts
- Battery
- Wind Power Generation
- Natural Gas Generation
- Cooperating with SAIC for NEV buses and BMW with Karma PV

Do-Fluoride & HongXing

- Inorganic Fluoride
- Fluorine Electronic Chemicals
- Lithium Battery
- Nanometallic Materials
- Acquiring with Hongxing Auto for BEV development

Jiangte Motor & Joylong Auto

- Electric Motor
- Lithium Energy Products
- Minerals and Highly Processed Products
- Acquiring Joylong Auto for electric vehicles development

Breakthrough Value Chain Player

LeTV: LeEco & LeSEE

- Leading Chinese Video website
- LeSEE Plant will be founded in Zhejiang Qingde with 400k capacity
- Cooperating with BAIC and Aston Marin for R&D
- LeTV became a shareholder for Yidao for car sharing service

Chehejia

- Startup founded by automotive experts from internet companies
- The plants is constructing and the capacity is expected to be 200,000 units per year by the end of 2017. Also, they will built a battery plants

Tecent & Foxconn & Harmony Auto: Future Mobility

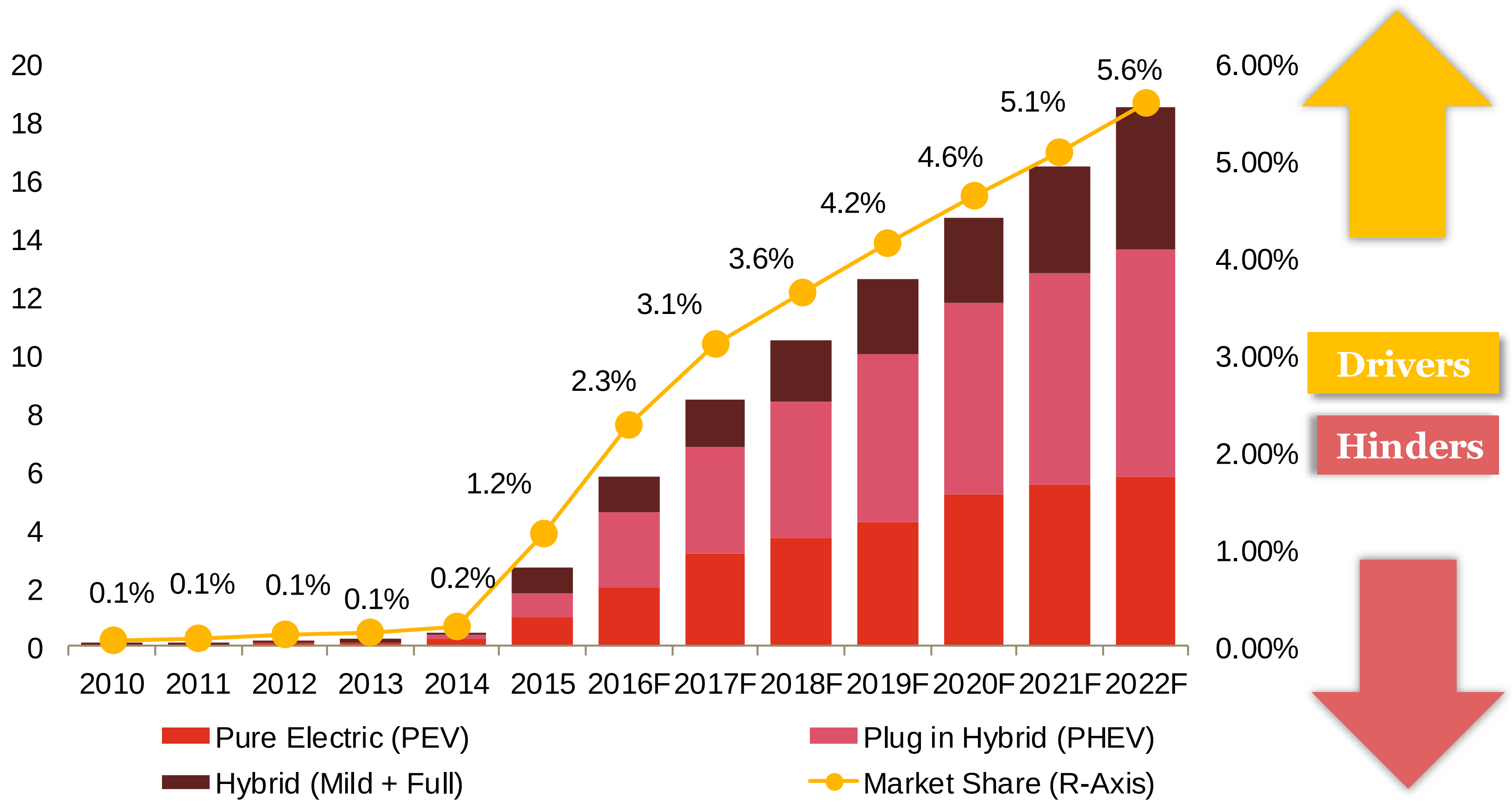
- Leading Chinese hi-tech company
- Integrating with different industry (Internet & manufacturing & Automotive Dealer)

Source : PwC Analysis

Topics: China NEV Market

Assembly forecast - Alternative energy vehicles

Assembly forecast - Alternative energy vehicles
2010 -2022F (Thousands)



Source: Autofacts 2016 Q4 Forecast Release

- Chinese government announced that new automakers who is expected to produce fuel consumption vehicles will not allowed to be founded in principle. It is a good news for the development of alternative energy vehicles.
- Separate NEV license plates are issued to stimulate the NEV growth, especially in combustion plate restriction cities.
- Policy in carbon emission restriction and carbon emission trading accelerate the process of the transformation for NEVs

- A large number of automakers are involved in the new energy subsidy cheating scandal which will effect the policy of NEV subsidy. NEV subsidies will gradually phase down by 2021.
- Battery technology including battery range, life and charging period still needs to be improved progressively.
- The establishment of charging station hasn't been popularized yet which will effect customers' confidence in purchasing NEVs.

Policy update: National and regional regulations with impact on other key drivers and NEVs sales volumes

"Push"		Impact
Subsidy	• National: 25 ~ 55k RMB range depending subsidy, expected pay-out until 2020 • Regional: additional benefits on same level like national programs	R
Tax regimes	• VAT exemption (2014-2017) • Exemption/ reduction of "Vehicle & Vessel Tax" • Consumption Tax omitted for BEV	R
City restrictions/ Licensing	• NEV as exception from licensing restrictions (e.g. Shanghai, Beijing) • Planned exemption from toll and parking fees	R
Infrastructure	• Dedicated NEV parking space in new buildings • Subsidy for charging stations	I
Energy costs	• Reduced electricity tariffs for NEV	I
Emission quota trade	• The policy will be carried out in 2017 • Selling quota is one of the capital source for NEVs manufacturers	R

"Pull"		Impact
Fleet consumption	• Phase III: 6.9l/100km • Phase IV: 5.0l/100km • Phase V: ~4.0l/100km	R
NEV Demo Cities	• 40 Cluster-regions / 88 demo cities • NEV target for 2015 in demo cities: ~330k vehicles	I
Charging Standards	• Application of national charging standards from 2015 on (AC/DC)	I
Mandatory NEV share for Officials	• Mandatory NEV-quota for newly purchased vehicles of officials: ≥30% (2014-2016)	R
Penalties	• Penalties phase III: "Name and Shame list", no new projects approved • Mandatory NEV production quota (ZEV) currently in discussion	R

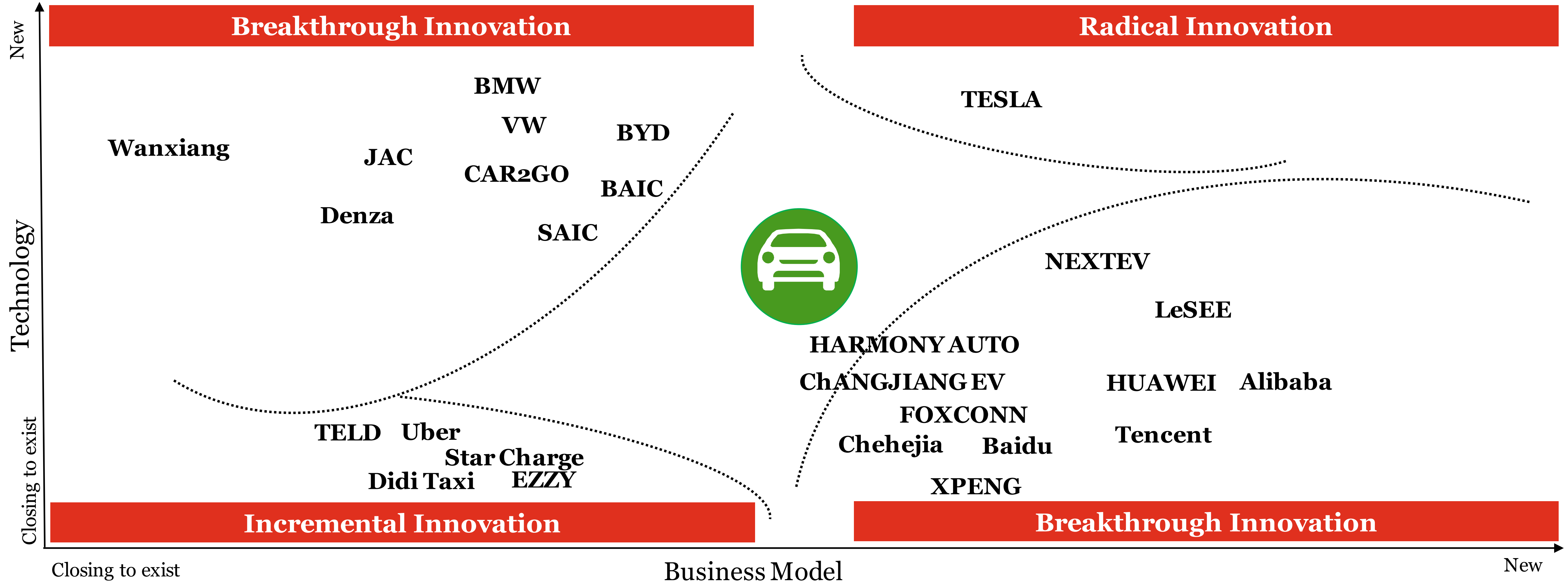
NEV-target of the Chinese Government: 5 million cars until 2020

R: Regulation *I: Infrastructure*

Source : PwC Analysis

In NEV race: Who's doing what, and how

Illustrative



Source : PwC Analysis

Thank you for your attention!