

# The Future of the Canadian Auto Industry

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The APRC conducts research and disseminates knowledge about the role of public policy in supporting Canada's globally competitive automotive industry.

<https://automotivepolicy.ca/>

Charlotte Yates and John Holmes *The Future of the Canadian Auto Industry*. Canadian Centre for Policy Alternatives. February 2019.

<https://www.policyalternatives.ca/publications/reports/auto-future>

*“With production and employment falling, Canada’s auto industry is under siege ..... The handful of U.S corporations that overwhelmingly dominate the Canadian auto assembly and parts industries are disinvesting from Canada. At the same time, the U.S. government is hardening its position for automotive free trade with Canada. Because Canada depends heavily on the auto industry for employment and exports, the implications of these trends are alarming”*

Ross Perry. *The Future of Canada’s Auto Industry*.  
Toronto: Lorimer 1982.

# *Key manufacturing sector*



- *126,000 direct jobs*
- *\$9.6 billion in wages*
- *\$18.2 billion in GDP*
- *\$86.5 billion in exports*
- *Driver of technological innovation*

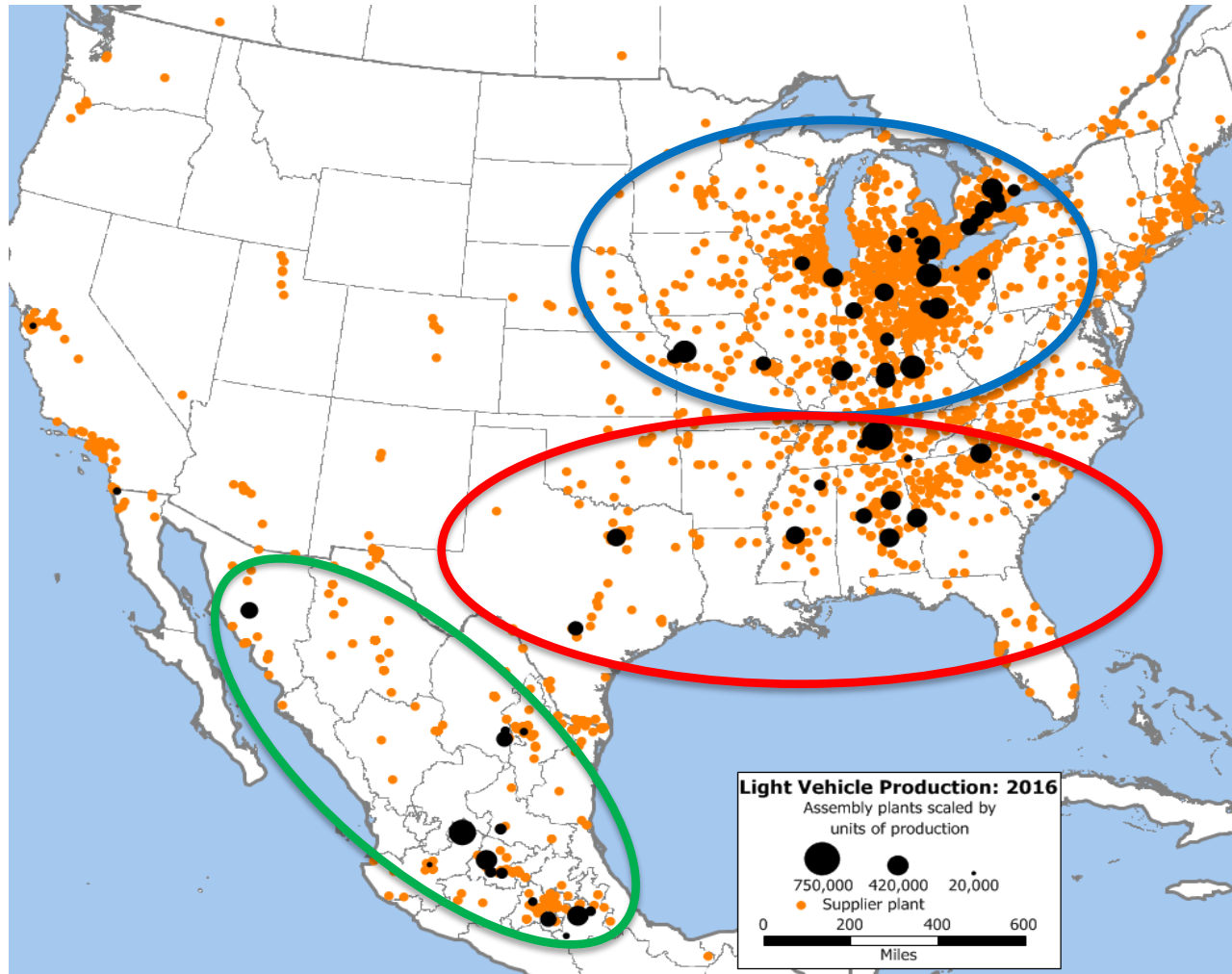
# Canada's automotive industry



- *5 OEMs (Toyota, FCA, GM, Honda, Ford)*
  - *2.2million vehicles (2017); Toyota + Honda = 46% of total*
  - *~ 1.83million exported to US*
- *700+ suppliers*
  - *Canadian-owned global suppliers*
  - *Subsidiaries of Japanese, US, European global suppliers*
  - *Large number of smaller Canadian-owned firms*
  - *World-class tooling industry*
- *Excellent reputation for quality, productivity, skilled labour*
- *Integral part of Great Lakes Auto Region (MI,OH,IN)*

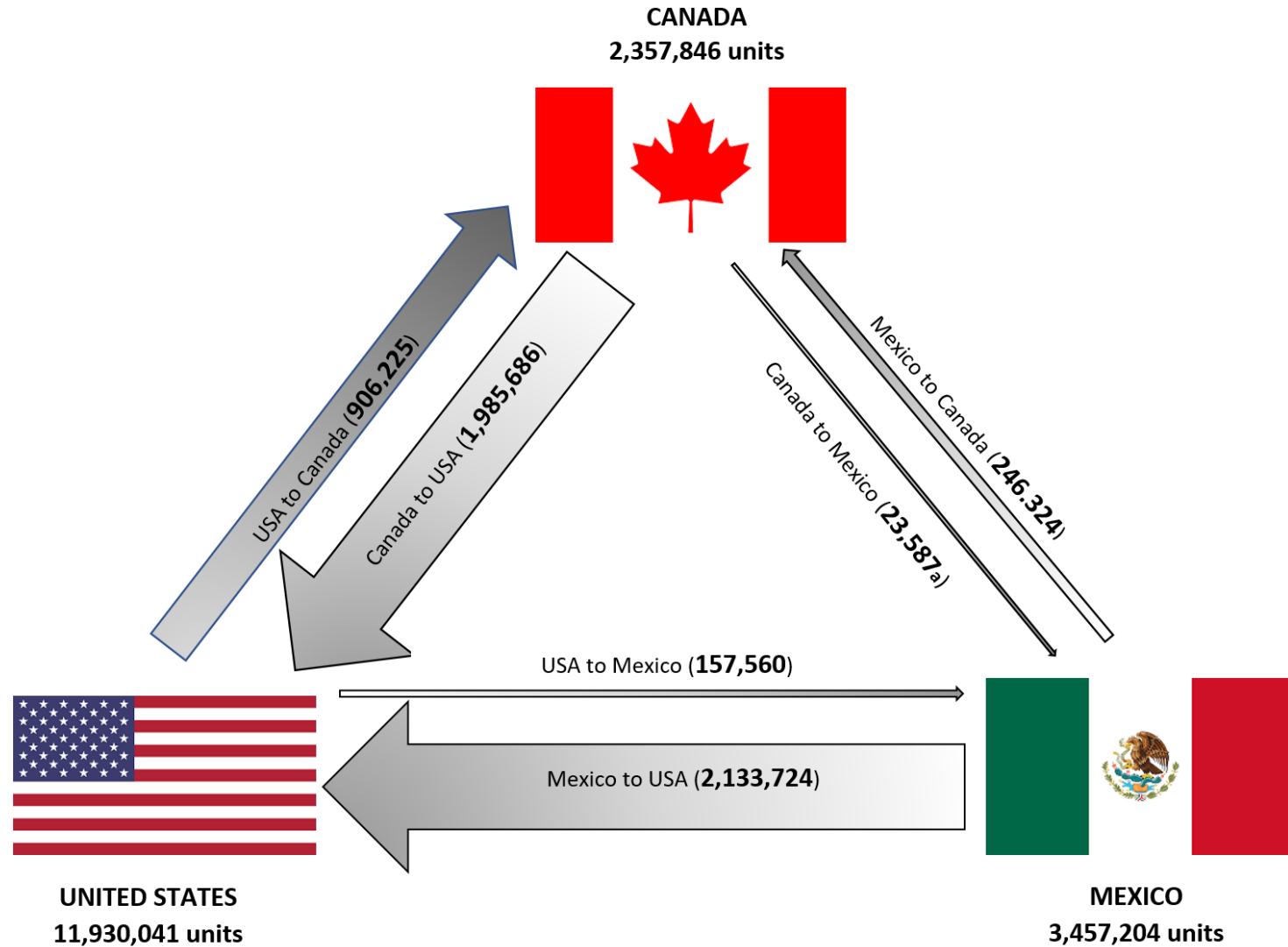


# North American auto industry footprint 2016



Source: Klier and Rubenstein 2018

# NAFTA Vehicle Production and Trade Flows: 2016 (Units)

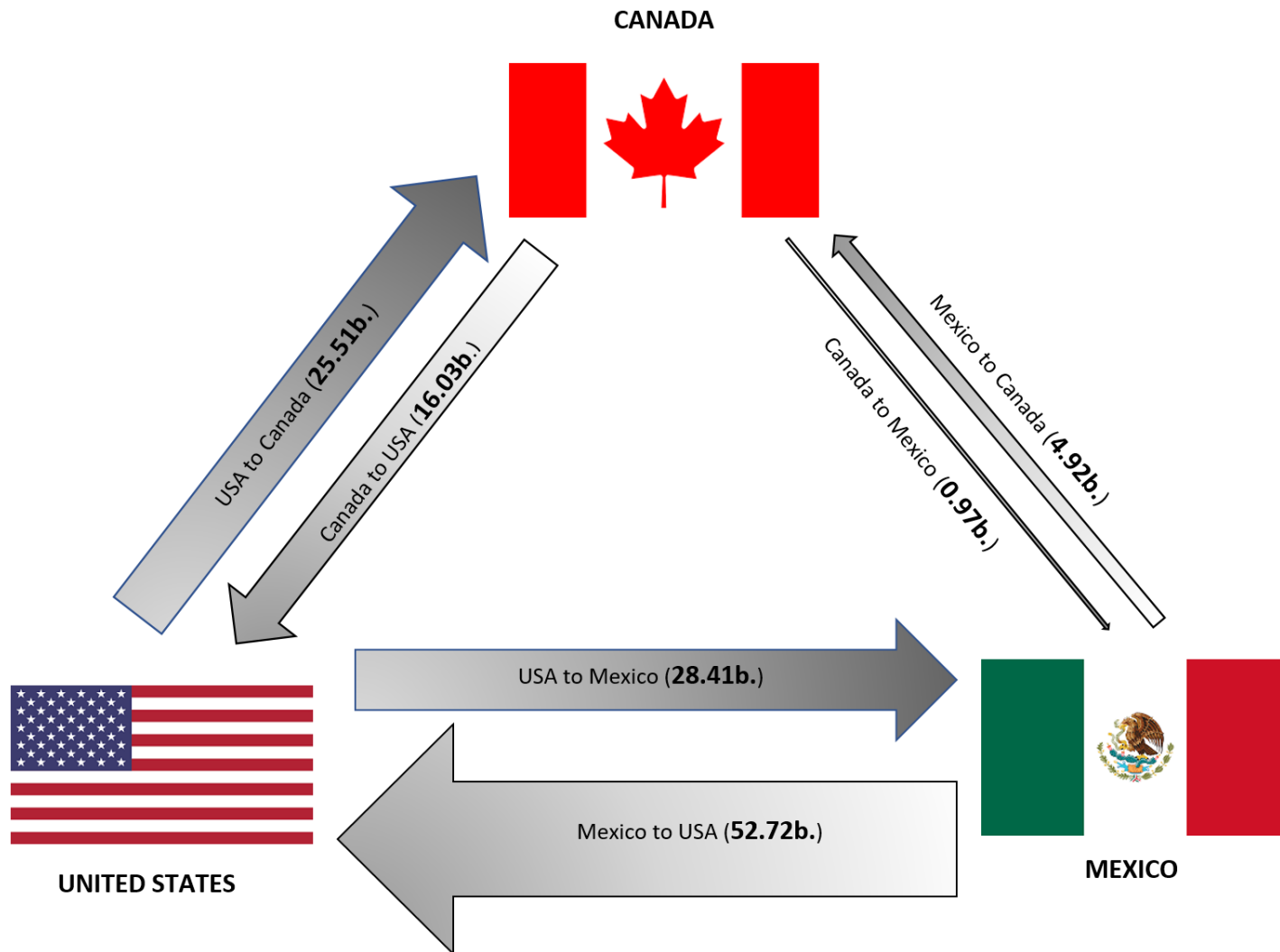


Source: AMIA; USITC; Industry Canada

<sup>a</sup> estimate

# NAFTA Automotive Parts Trade Flows: 2016

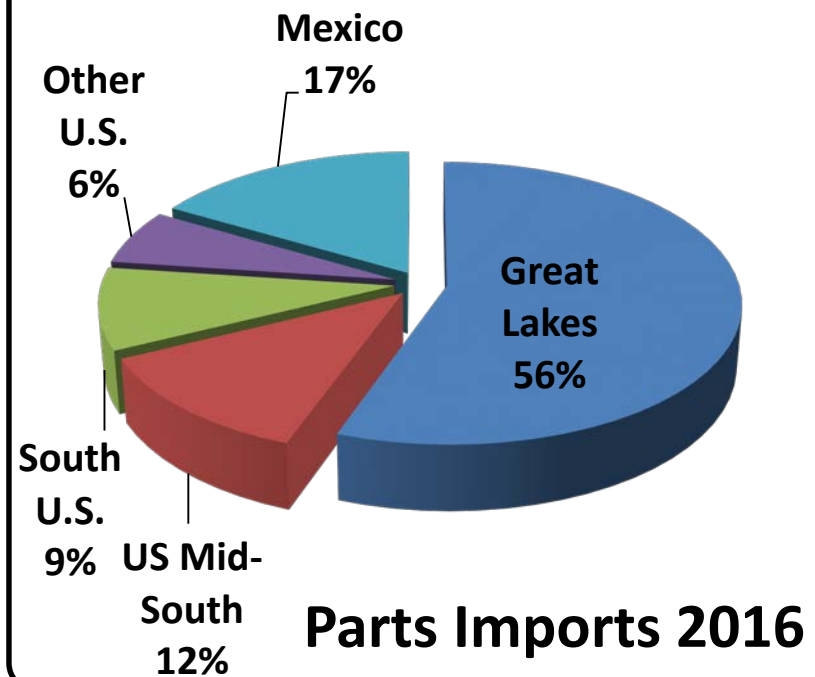
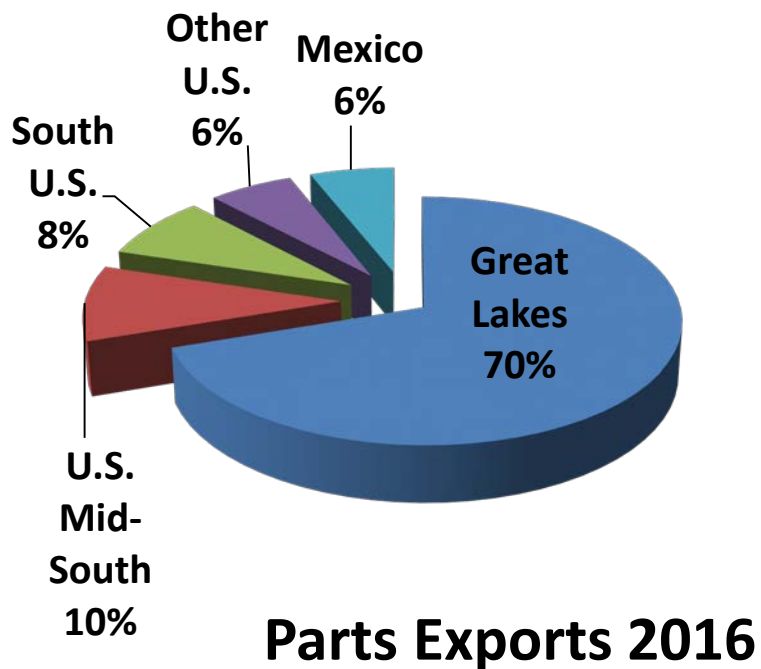
(\$US Billions)



Source: AMIA; USITC; Industry Canada



# Canada automotive parts trade within NAFTA: 2016



Data Source: Industry Canada Strategis Online Trade Data

# *W(h)ither the Canadian industry?*



## Relative Decline since 2000:

- o 1999 produced 3.0m. - 5<sup>th</sup> largest in world
- o 2018 produced 2.02m. – slipped to 12<sup>th</sup> rank
- o 17% NAFTA light vehicle production 2000; 12% in 2018
- o Net loss of 5 assembly plants
- o 2016 Unifor-D-3 Bargaining
- o 2019: GM Oshawa and FCA Windsor



# Challenges going forward



- *Trade agreements*
  - CKFTA, CETA
  - CPTPP
  - NAFTA 2.0 (CUSMA/USMCA/T-MEC)
- *Supplier logistics*
- *Changing demographics and consumer demand*
- *Disruptive technological change*
  - *New propulsion technologies*
  - *Vehicle lightweighting*
  - *Vehicle electrification*
  - *CAV technologies*
- *ACES vehicle of the future*



# NAFTA 2.0 ROOs and RVC



- Increased NAFTA RVC
  - o from 62.5% to 75% for vehicles, engines and transmissions
  - o from 60% to 75% for other “core parts”
  - o From 60% to 70% for “principal parts”
  - o to 65% for “complementary parts”
- Vehicle only qualifies as originating if core parts are originating
- Vehicle only originating if 70% of OEM’s steel and aluminum purchases in previous year originate within NAFTA
- Vehicle only originating if it meets a LVC requirement
  - o 40% value content of car (45% for pickups) must come from plants with a production wage rate of US\$16/hour



# *Potential impact of trade deals*



- CPTPP
  - Increased Japanese vehicle imports
  - Canadian SME suppliers vulnerable
  
- NAFTA 2.0
  - possible increased Canadian parts production
    - impact of LVC on Mexico
    - core parts requirement
  - compliance costs??
  
- 232 tariffs on US imported vehicles and parts??
  - NAFTA 2.0 side letters



# *Threats and opportunities for Canadian supplier industry*

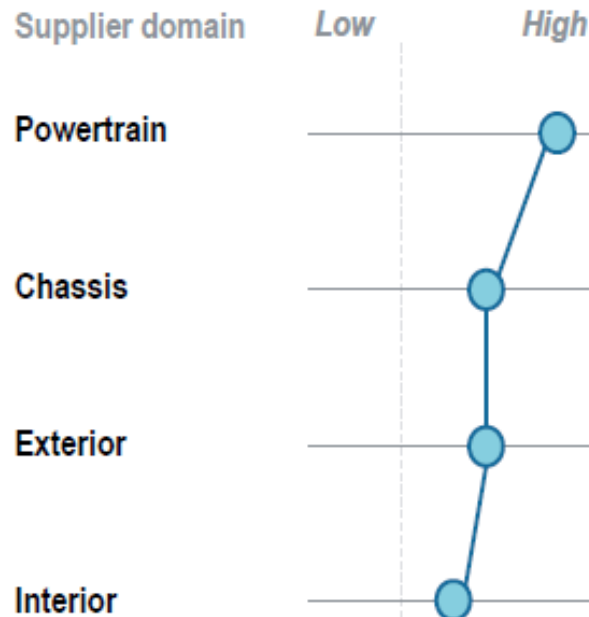


- Current supplier strengths
- Disruptive technologies
  - Climate change related
    - lightweighting
    - propulsion systems
    - vehicle electrification
  - CAV technologies
    - AI strengths
    - non-traditional auto suppliers
- How fast adoption?



# Impact of technology shifts by component domain

## Disruption impact on current business



## Next generation vehicle concept

### Powertrain



- > E-motors and power electronics
- > Battery systems
- > Simple 1-2 step reduction gears

### Chassis



- > Advanced driver assistance systems and autonomous features
- > Adaptive suspensions
- > Active steering and braking systems

### Exterior



- > Shifting material focus and growing importance of multi-material applications
- > Growth of non-structural composites

### Interior



- > New HMI / display technologies
- > Extended Infotainment solutions
- > Increased interior insulation (NVH)
- > Integration of electronics and surfaces

Substantial new requirements for the supply base

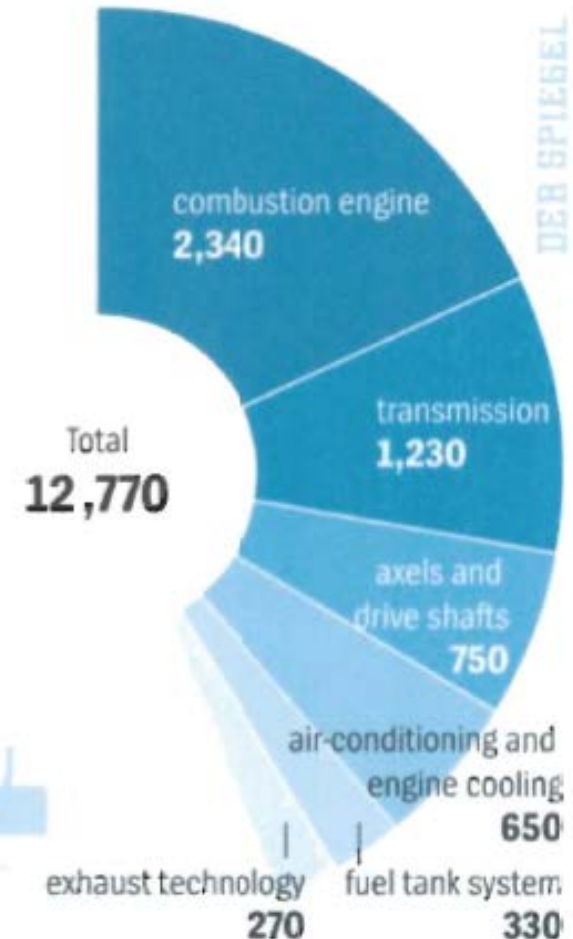
# ICEs to EVs: Impact on component suppliers

## Phase-Out

Average value-creation of conventional car components, in euros

Sources: Merrill Lynch, A.T. Kearney

Reduced components in an e-car





# *Distinct but interrelated areas of focus in the auto Industry*



- Automotive R&D and Product Engineering
  - engineering talent, academic alliances, innovation enablers
  - proximity to OEM headquarters
- Automotive Manufacturing
  - regional competitiveness factors
    - labour, energy, logistics costs; trade agreements; gov't incentives
  - capture and retention of OEM investment crucial
- Canada: important site for auto manufacturing but low levels of R&D and product engineering



# *Canadian automotive policy: a new focus?*



*“innovation must become THE pathway to automotive industry growth in Canada ..... In this period of rapid industry transformation and adoption of new technologies, Canada needs to now invent products others will manufacture – not just manufacture products others have invented.”*

CAPC Submission on a Canada Innovation Strategy, August 31, 2016

- Innovation and R&D
  - o Geography of North American Auto R&D & Product Engineering: S.E. Michigan!
  - o Software and AI niches in Canada
- Manufacturing
  - o Advanced manufacturing technology
  - o Cost competitiveness
  - o Trade policy
- GLR combines R&D and manufacturing

## *In summary....*



- preferential access to US market remains critical
- fortunes of Canadian (Ontario) auto industry tied to resilience of auto R&D and manufacturing in the Great Lakes Region
- disruptive technologies driven by climate concerns will impact parts sector
- policies to support advanced manufacturing and retain OEM footprint



# Thank you

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