

McKinsey Global Institute
McKinsey Global Automotive Practice



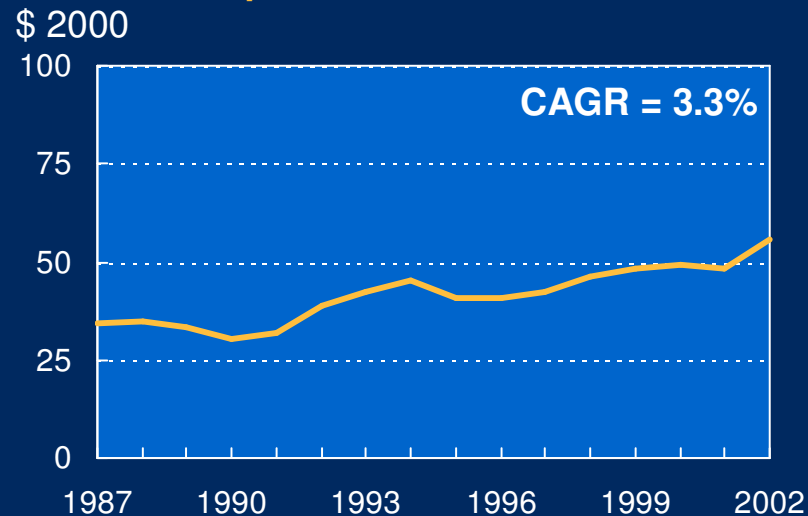
Increasing Global Competition and Labor Productivity: Lessons from the US Auto Industry

Martin N. Baily, Senior Advisor
Diana Farrell, Director

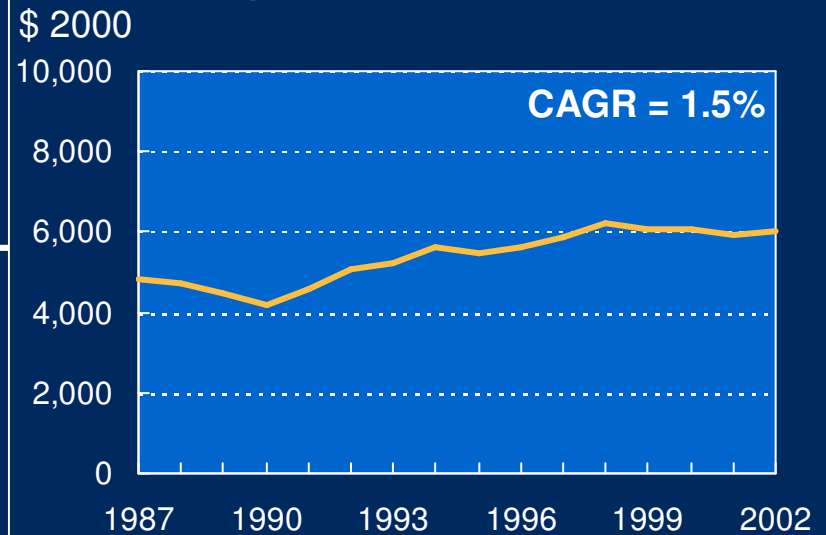
**Presentation for Chicago Federal Reserve Board
Auto Supplier Conference
April 18, 2006**

LABOR PRODUCTIVITY GROWTH DRIVEN BY INCREASE IN VALUE ADDED AND REDUCTION IN HOURS PER VEHICLE

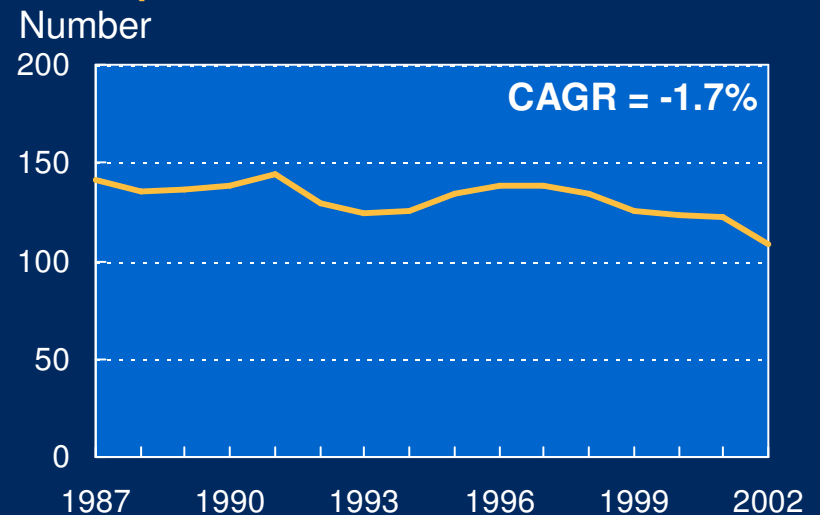
Value added per hour, US automotive sector*



Value added per vehicle



Hours per vehicle

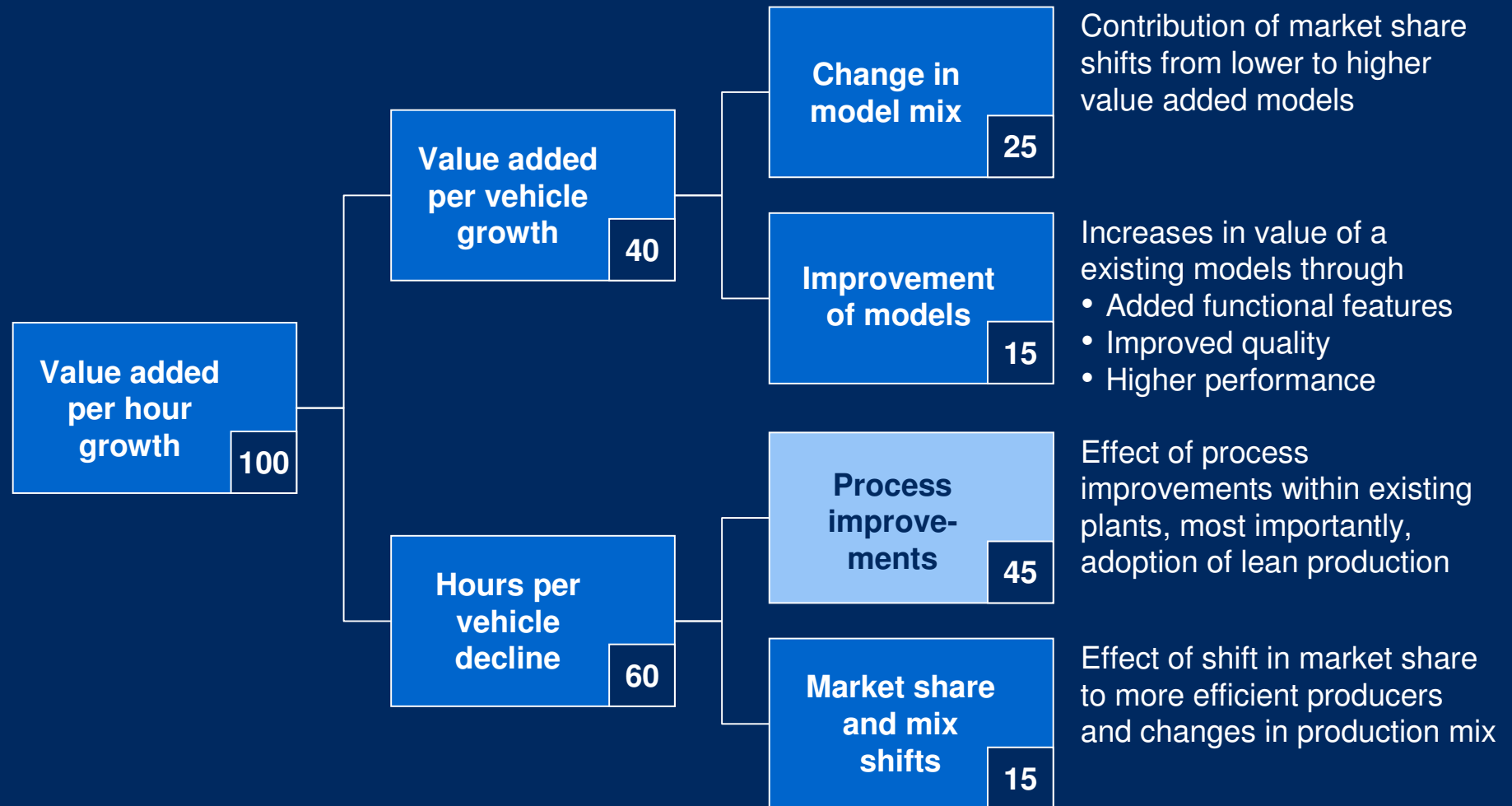


* Includes assembly; parts manufacturing for new vehicles
Source: BEA; BLS; MGI

PROCESS IMPROVEMENTS WERE LARGEST CONTRIBUTOR TO AUTO SECTOR PRODUCTIVITY GROWTH

Contributions to productivity growth*

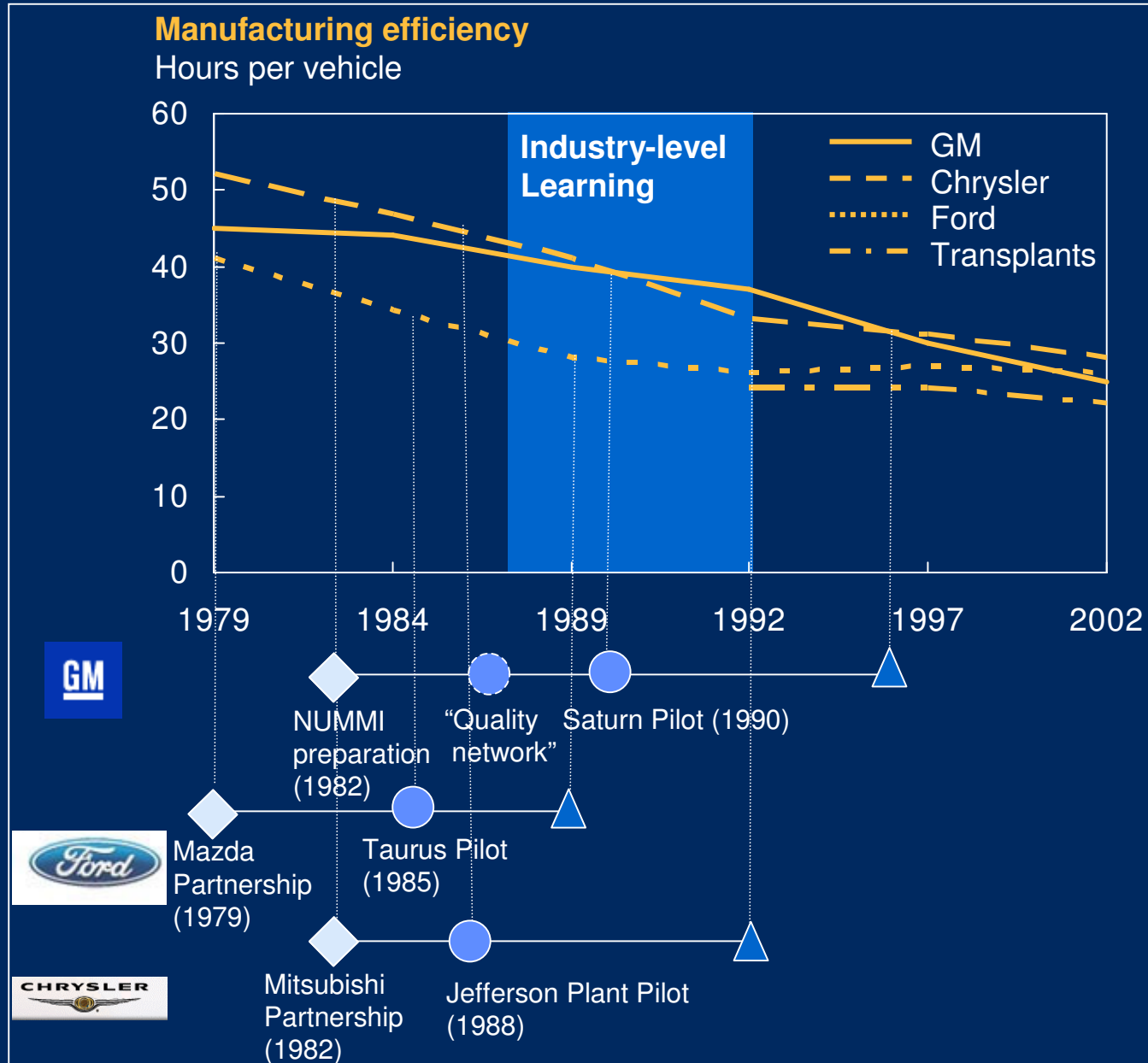
Index, 100 = 1987-2002 growth in value added per hour



* Contributions rounded to nearest five percentage points

Source: MGI

BIG THREE TOOK 10-15 YEARS TO MATCH TRANSPLANTS' EFFICIENCY



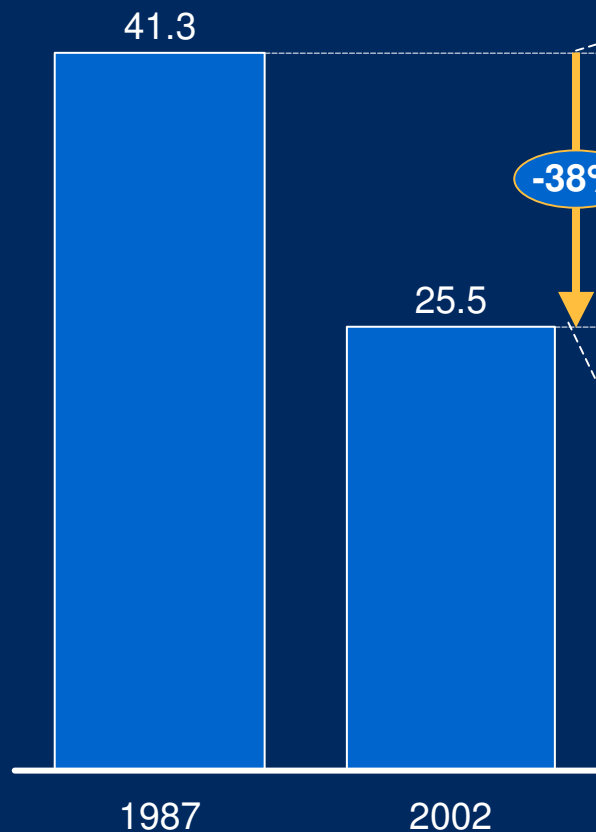
- ◆ **Learn**
Opened a "learning window"
- **Adopt**
Started production at a lean-production pilot plant
- ▲ **Penetrate**
Closed the performance gap to within 25% of the best practice

Source: Harbour Report, Literature search, MGI

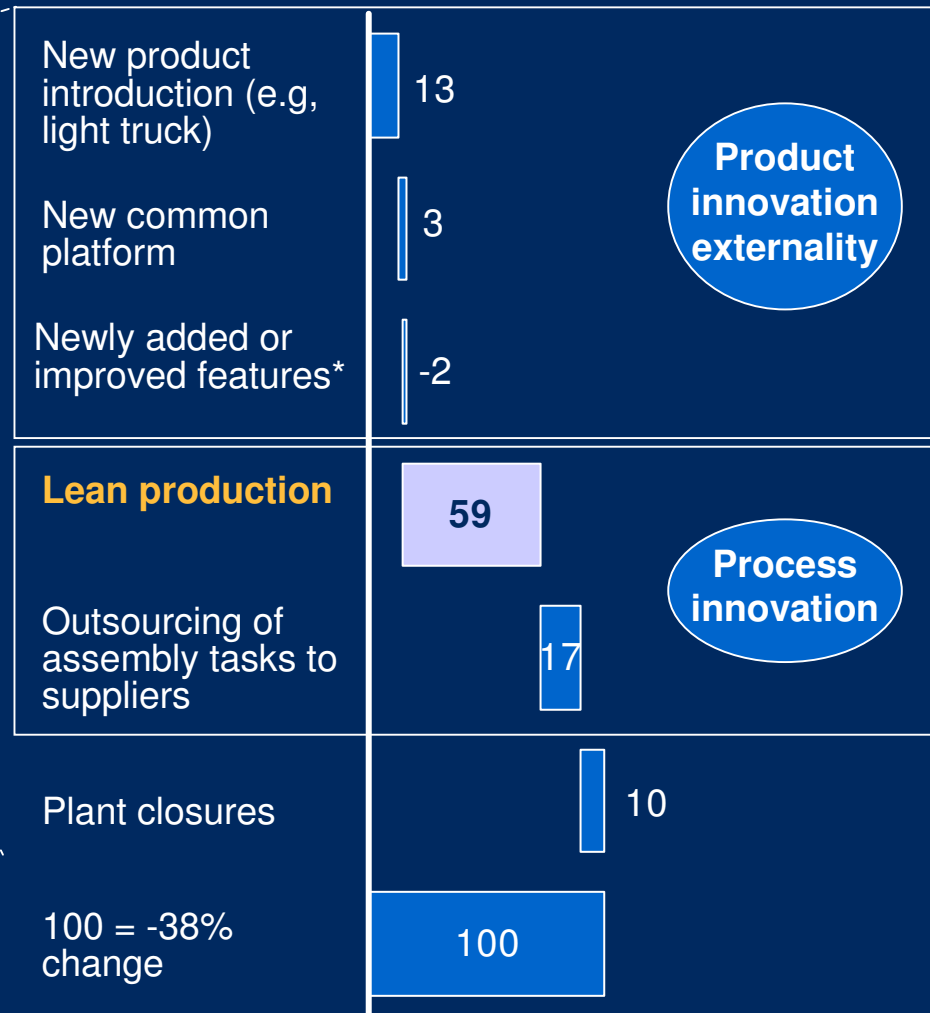
LEAN PRODUCTION MADE LARGEST CONTRIBUTION TO GREATER OEM EFFICIENCY

GM U.S. EXAMPLE

Efficiency of GM US assembly plants
Hours per vehicle



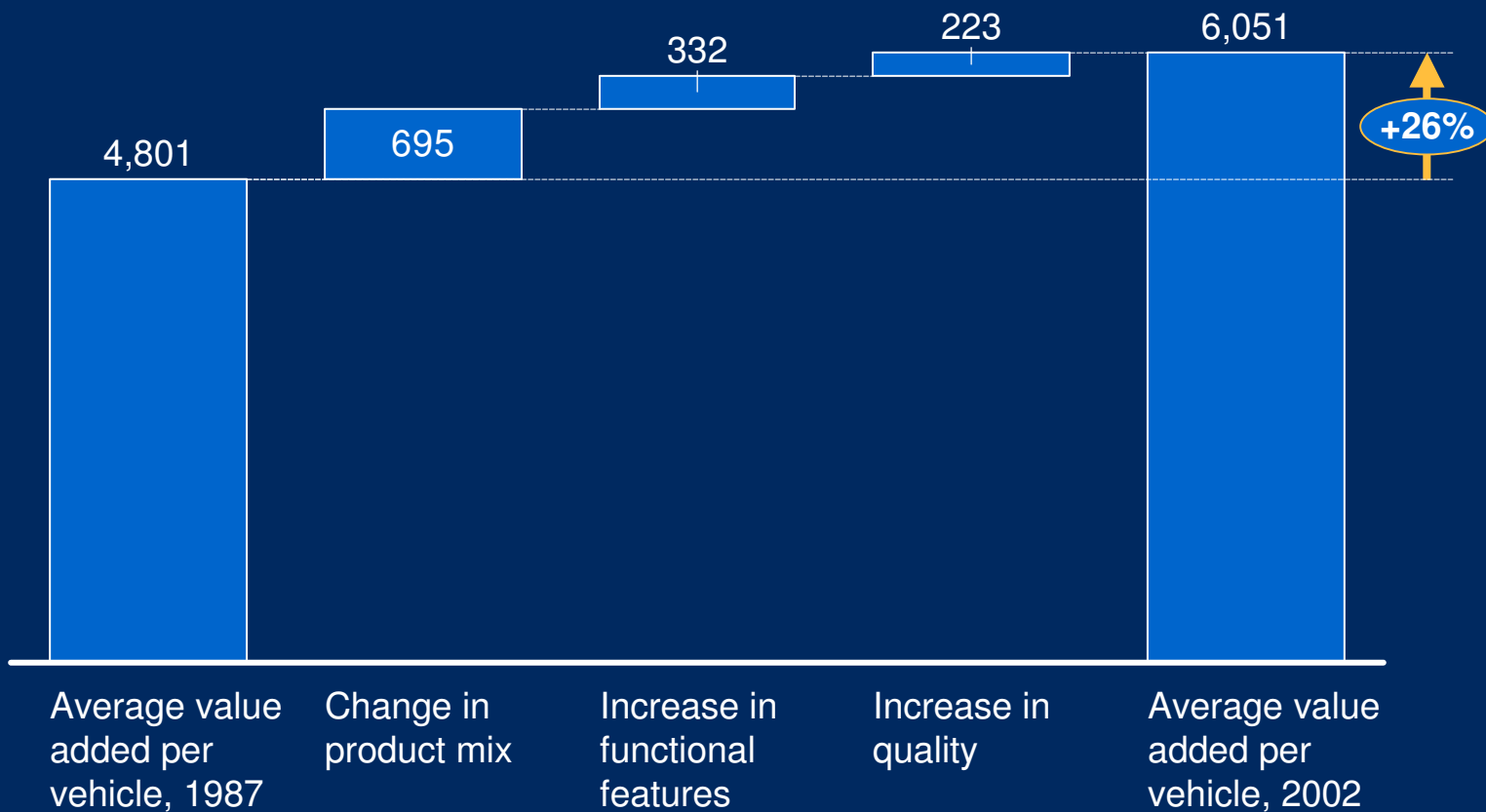
Contribution to efficiency improvements
Percent



* Estimated as the residual
Source: Harbour, MGI

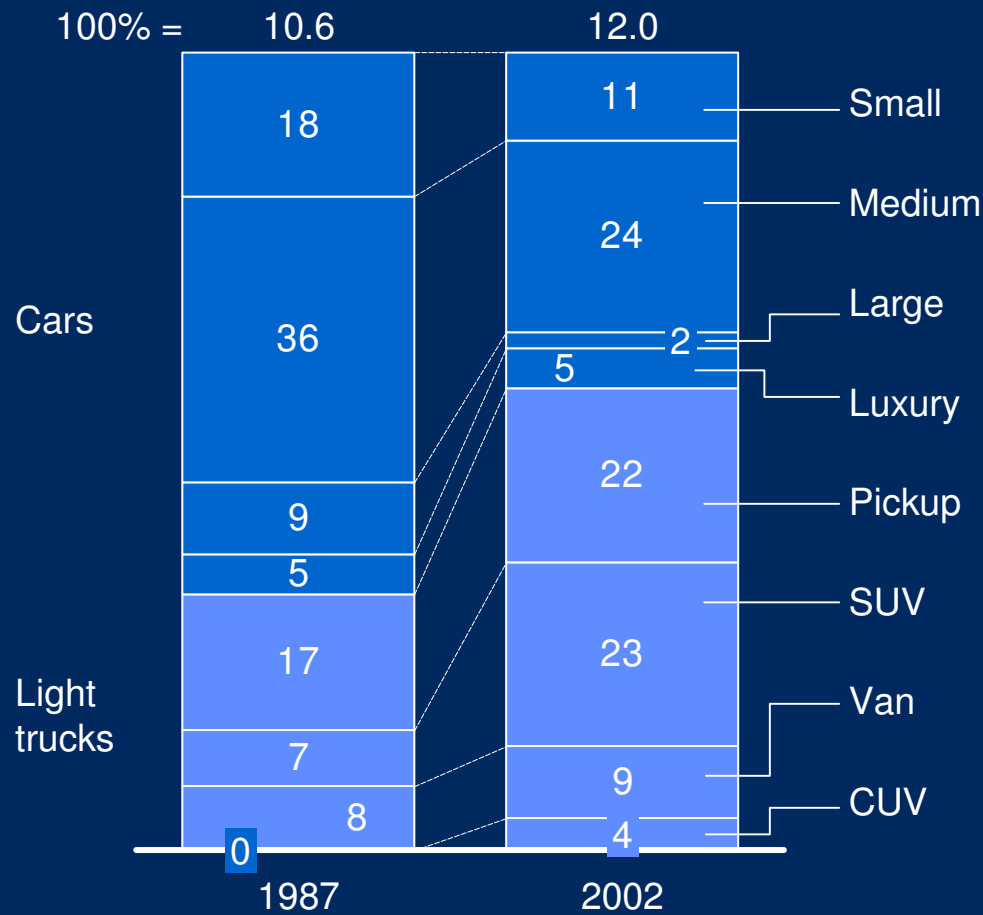
VALUE ADDED PER VEHICLE INCREASED 26 PERCENT BETWEEN 1987 AND 2002

Increase in value added per vehicle, 1987-2002
US-based OEMs and suppliers, \$ 2000

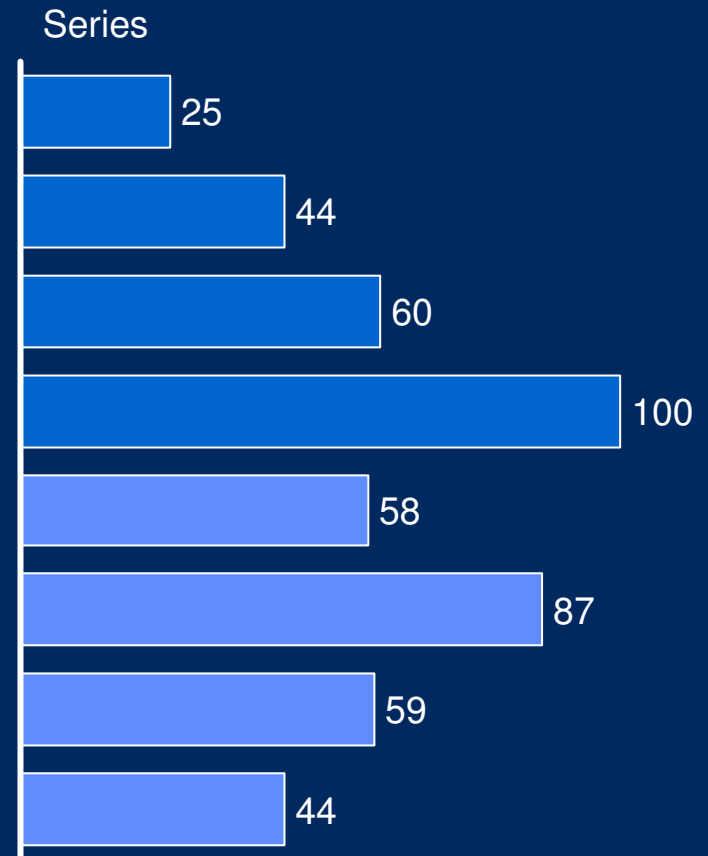


SHIFT TO LIGHT TRUCKS RAISED AVERAGE VALUE ADDED PER VEHICLE

Change in production mix
Million units

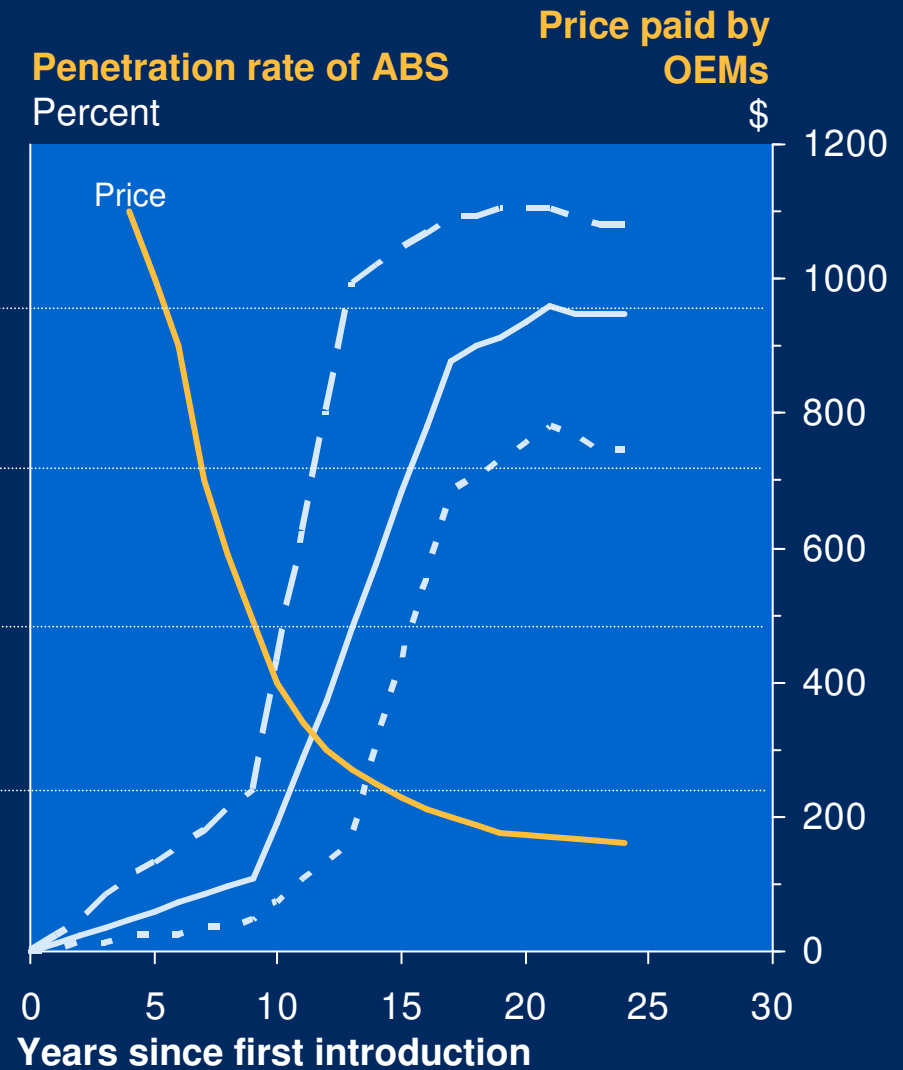
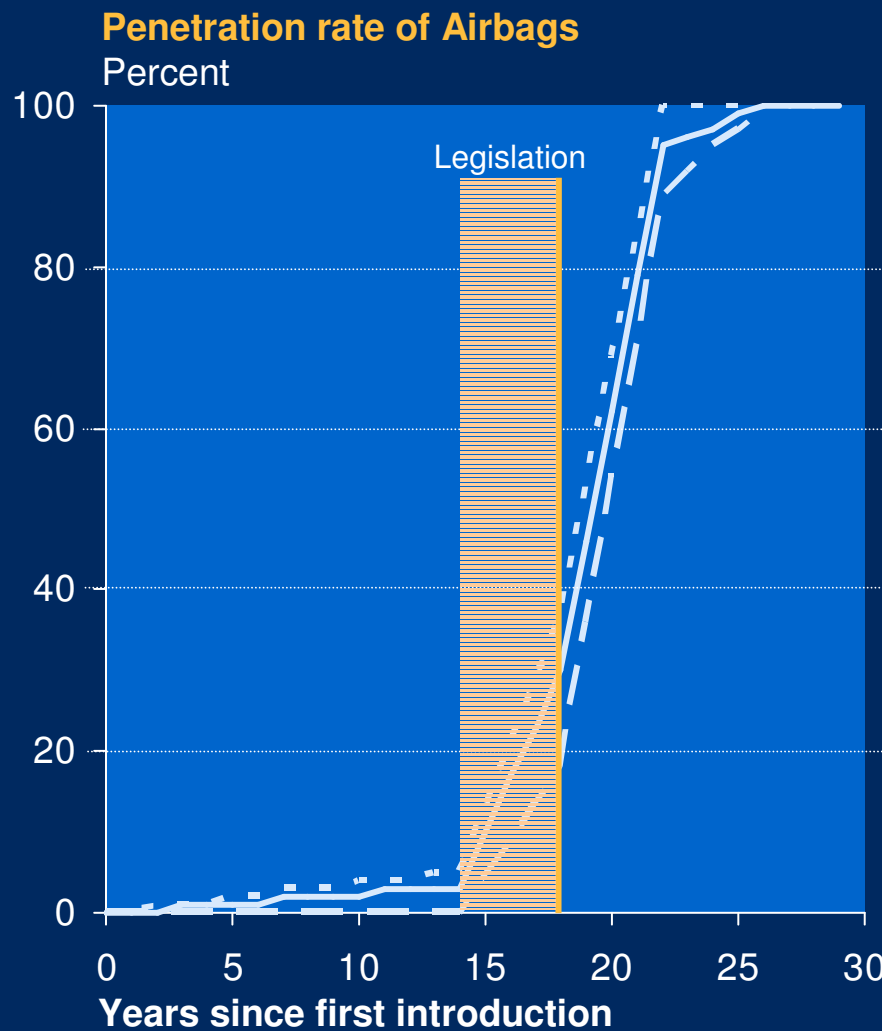


Relative VA per vehicle in base year*
100 = Luxury cars



REGULATION EXPANDED MARKET FOR AIRBAGS; ABS MARKET GREW AS PRICES FELL AND DEMAND ROSE

- Light vehicles
- - - Light trucks
- Cars



INCREASE IN VEHICLE DEPENDABILITY ALSO RAISE AVERAGE VALUE ADDED

Product innovation

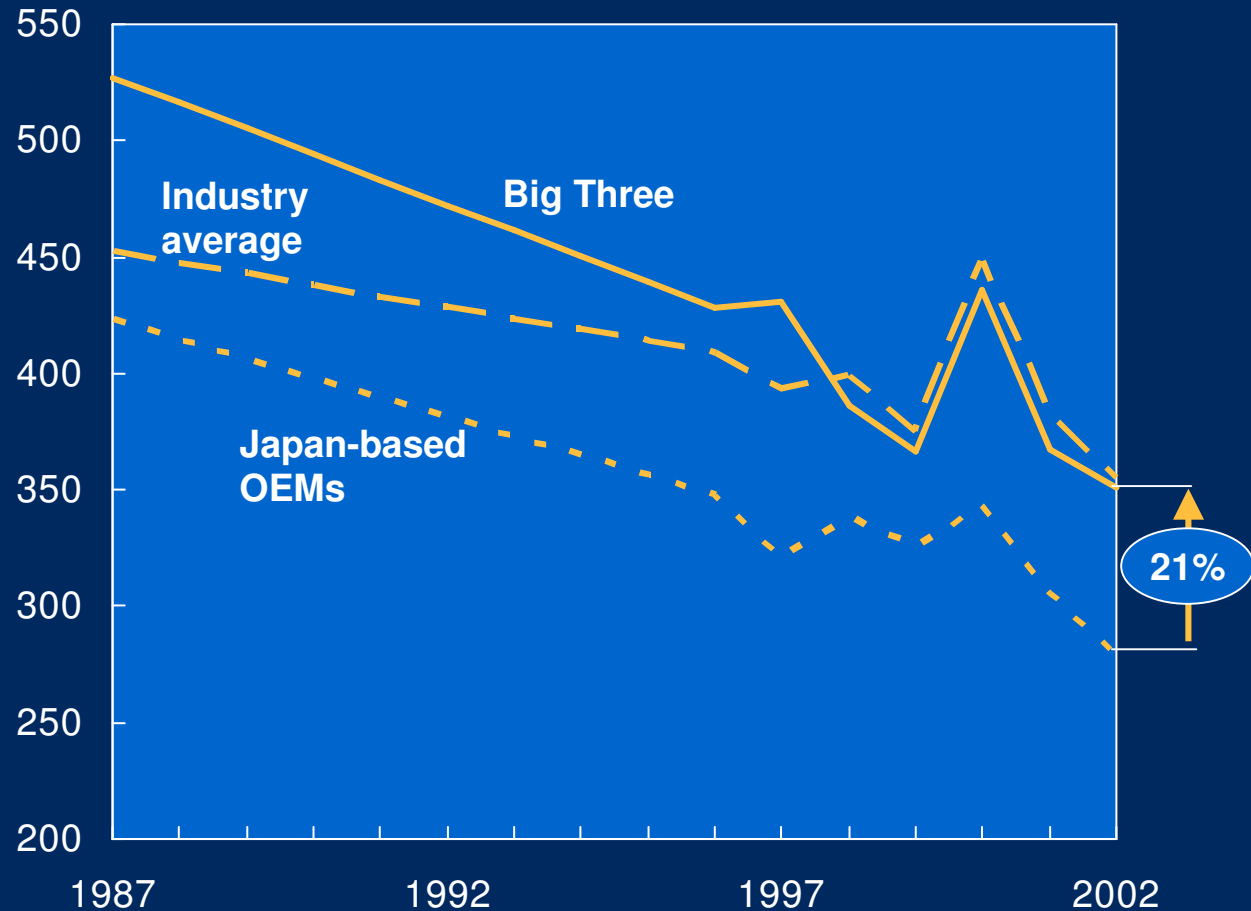
- Better materials
- Advanced features
- Better designs

Process innovation

- Fewer assembly errors

Improvement in vehicle dependability

Score point*

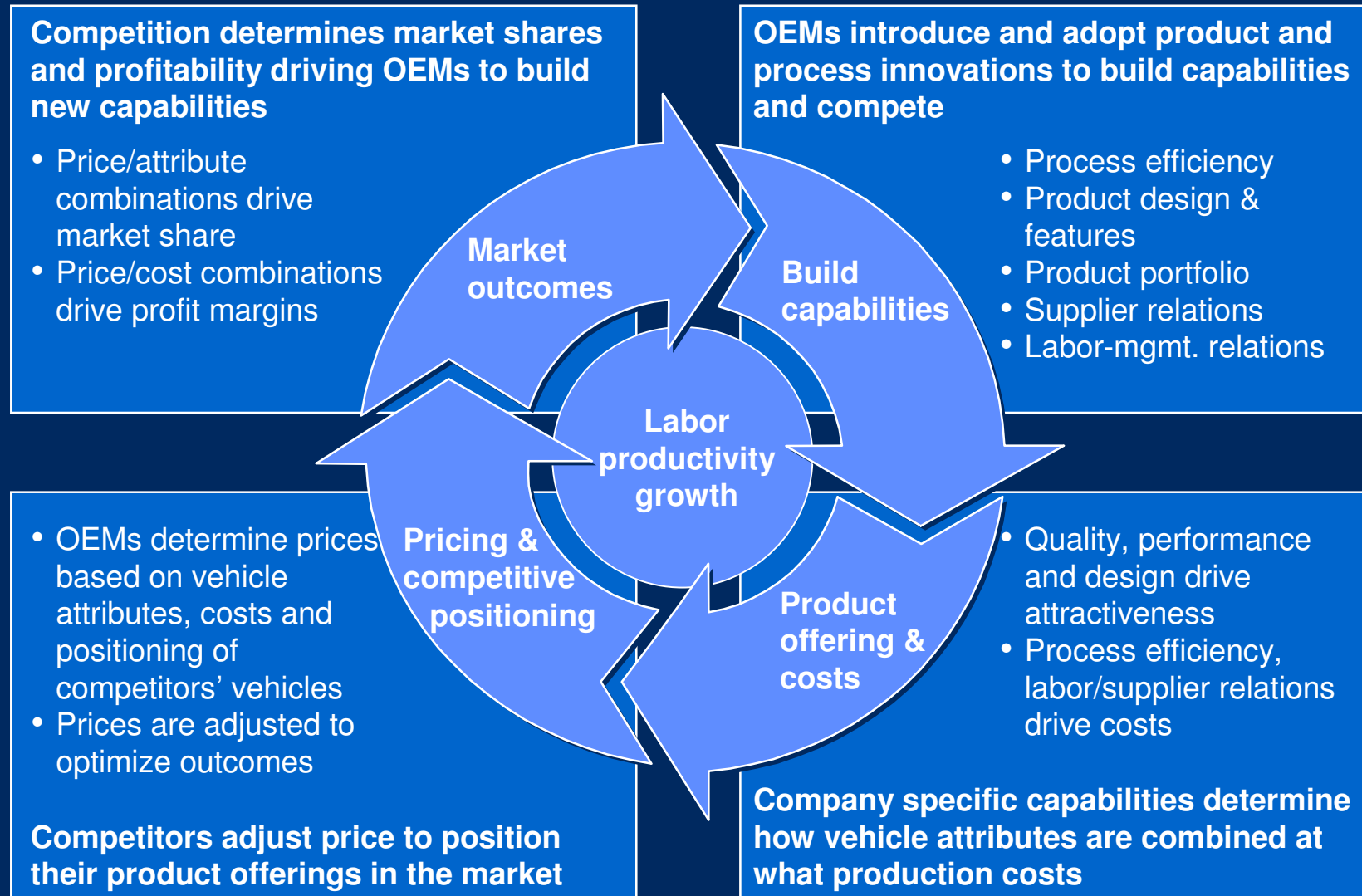


* Includes initial quality and durability. Scores before 1996 were estimated based on improvement ratio from 1997-2002

** Models considered for price elasticity estimation were: Upper small cars (Ford Taurus, GM Impala, GM Grand Prix, Toyota Camry) and middle SUV (Ford Explorer, Chrysler Jeep Grand Cherokee, GM Blazer, Toyota 4 Runner)

Source: JD Power, Ward Automotive Yearbook, MGI

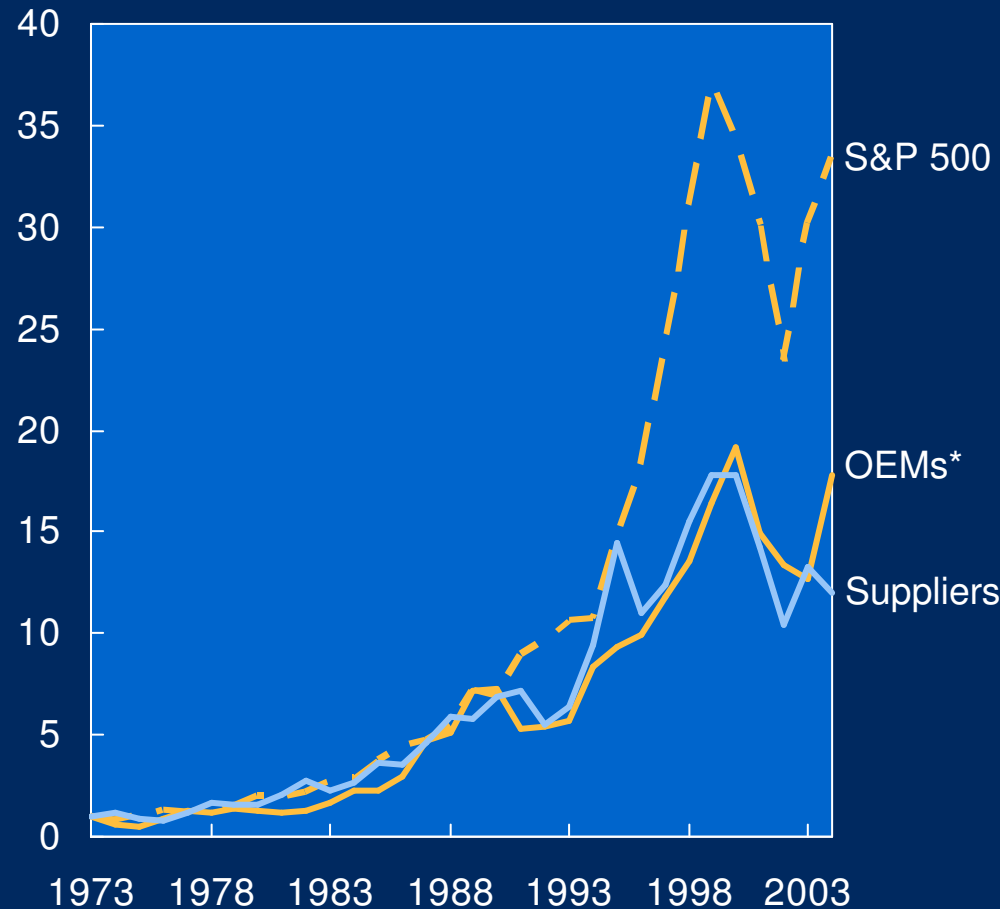
HOW GLOBAL COMPETITIVE PRESSURE DRIVES PRODUCTIVITY GROWTH



RETURNS IN THE AUTO INDUSTRY HAVE TRAILED BENCHMARKS FOR CONSIDERABLE TIME AND PERFORMANCE IS EXPECTED TO WORSEN

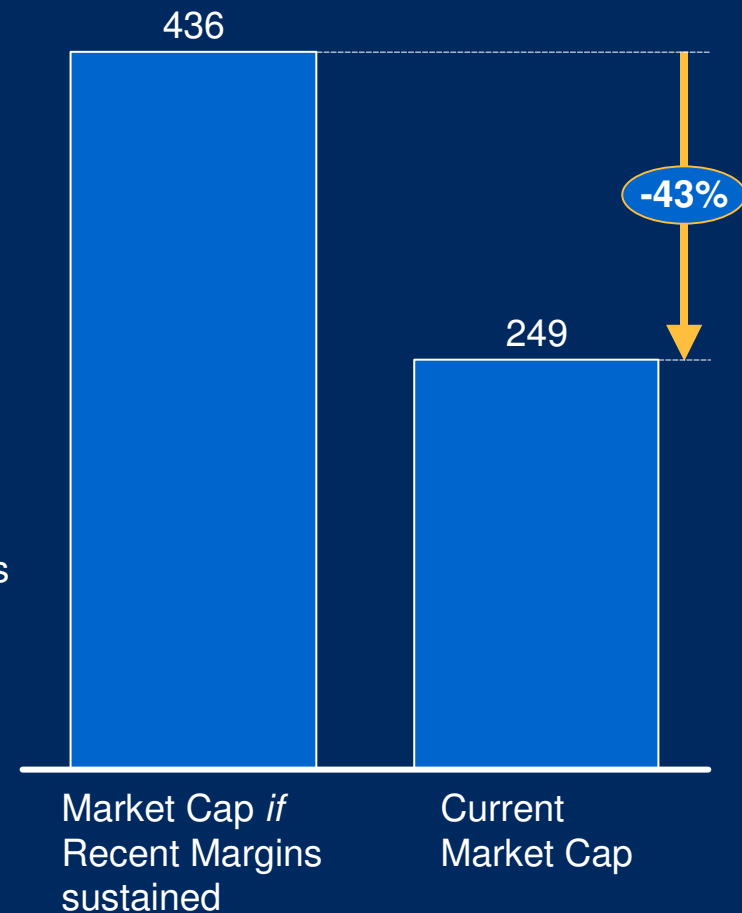
Value of \$1 invested in 1973

Percent



Automotive sector market capitalization**

\$ Billions

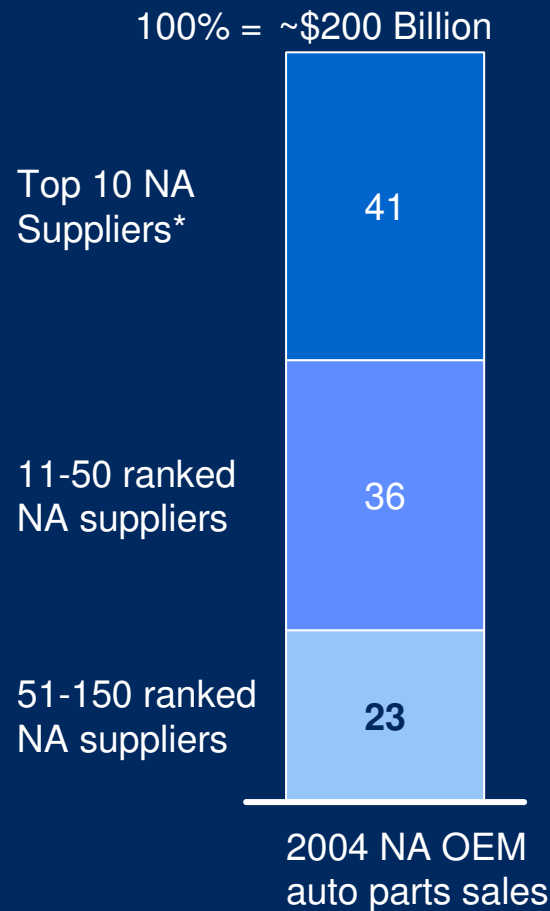


* Renault, PSA, Nissan, Toyota, GM, VW, DCX

** Discount estimates Based on Renault, PSA, Nissan, Toyota, GM, VW, DCX; Ford's historical margins has been negative; markets expect these margins to turn positive in the long-run

Source: Compustat; Datastream; McKinsey Corporate Performance Center analysis

SUPPLIERS ARE IN UPHEAVAL WITH BANKRUPTCY DRIVING RESTRUCTURING



Suppliers with below investment grade ratings

- Visteon (2)
- TRW Automotive (9)

- ArvinMeritor (13)
- Goodyear (16)
- Metaldyne (29)
- Dura (35)
- Tenneco Automotive (36)
- Plastech (49)

Suppliers currently in bankruptcy

- Delphi (1)
- Dana (7)

- Collins & Aikman (11)
- Tower Automotive Inc (21)
- Federal-Mogul (44)
- Meridian Auto. (48)

~40% of the 25 suppliers in the Top-50 that have a NA focus are facing severe financial challenges

* Top suppliers > \$4 billion in parts sales to NA OEMs, ranks 11-50 ~\$1B - \$4B, ranks 51-150 ~\$0.2B - \$1B; NA focus implies >50% of revenues are in NA

NOTE: Numbers in brackets is the supplier ranking based on 2004 NA OEM auto parts sales

Source: Automotive News Top 150 NA suppliers (2004); www.bankruptcydata.com

BIG THREE GAINS IN PRODUCTIVITY HAVE NOT BEEN SUFFICIENT TO TURN AROUND OVERALL PERFORMANCE

Outcome

Productivity

- Gap in assembly hours per vehicle has been largely eliminated
- Big Three own some of the most efficient plants
- Quality metrics gap has narrowed but difference in perceived quality still exists

Legacy costs

- Health care and pension costs remain much higher than competitors and will continue to be a drag on financial performance

Product mix

- No remaining safe havens for products
- SUVs dominated by Big Three however in decline and no longer provide major source of profits
- Detroit late to game in car-based models (e.g., crossovers) and lag in many car segments

Suppliers

- Domestic supply base over squeezed and are in bad shape increasing quality risk and hobbling innovation
- High dependency between Big Three and their suppliers—both struggle and significant challenge to break the dependency cycle