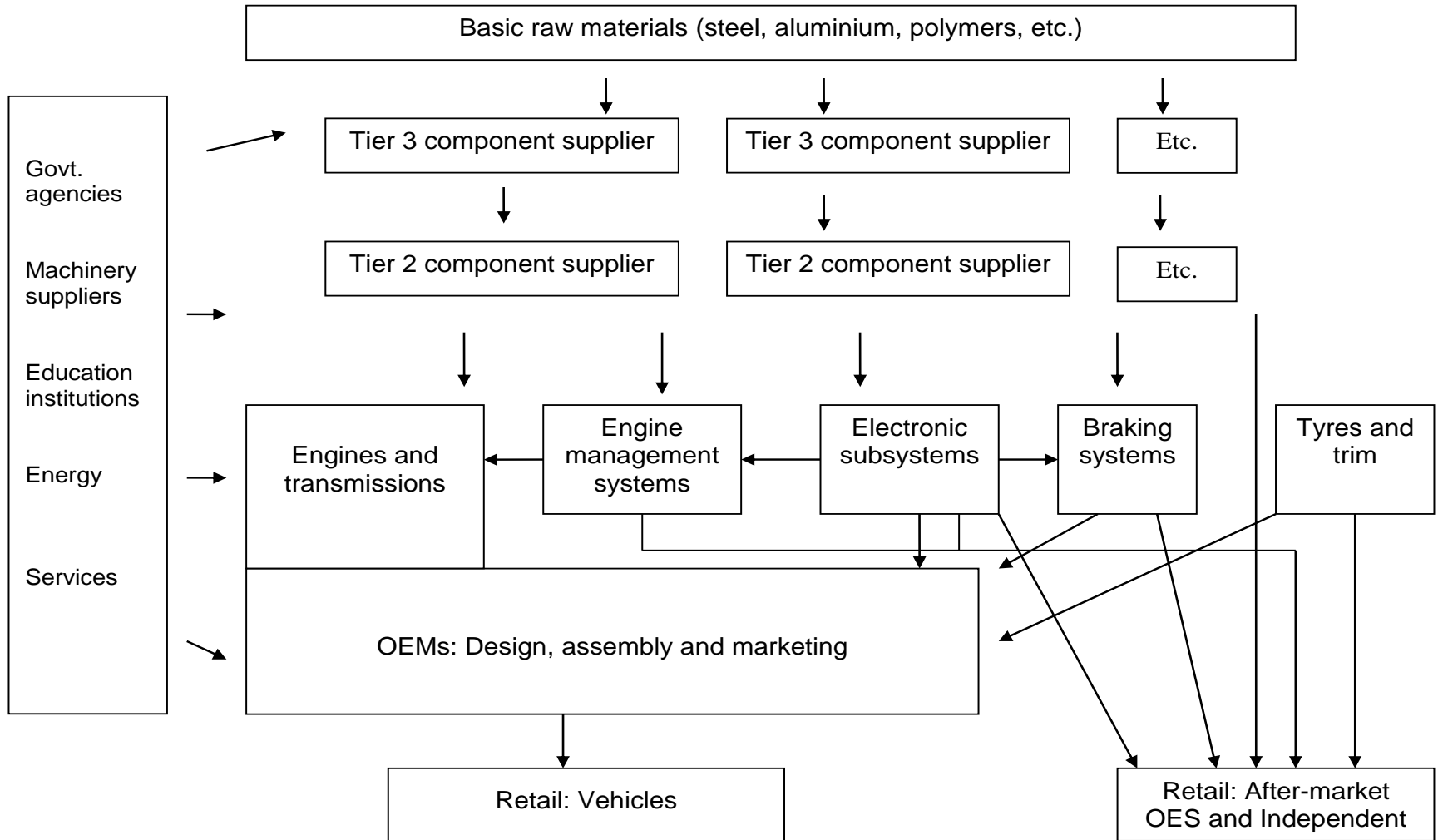


# **The automotive GVC: Industrial development implications for South Africa**

# Presentation outline

- Automotive GVC schematic
- Global dispersion of production
- The changing relationship between developed and developing economies
- The automotive industry in the industrialised world
- South Africa's automotive GVC foothold
- GVC conditions that create opportunities for SA's auto sector
- The SA auto sector's future?
- Critical demand and supply side policy considerations

# Automotive GVC schematic



# Ranking of global exporters - 2011 (Rm)

Rank	Country	Export Value	Export %
1	Germany	R 1,998,940	19.86%
2	Japan	R 1,207,572	12.00%
3	USA	R 869,337	8.64%
4	Rep. of Korea	R 595,112	5.91%
5	Mexico	R 475,923	4.73%
6	France	R 449,145	4.46%
7	Canada	R 440,587	4.38%
8	Spain	R 391,125	3.89%
9	China	R 389,169	3.87%
10	United Kingdom	R 380,101	3.78%
-	South Africa	R 70,063	0.70%
-	Other	R 2,796,996	27.79%
Total		R 10,064,072	100.00%

# Changing nature of automotive GVC trade

GVC node and direction of trade		2007	2011	CAGR	2011 sector %
Exports	<b>Auto Components (made by Suppliers)</b>	<b>R 2,818,059</b>	<b>R 4,416,367</b>	<b>14.18%</b>	43.88%
	Engines, Transmissions, Body Assemblies (made by OEMs)	R 444,616	R 584,759	7.88%	5.81%
	Finished Motor Vehicles	R 4,022,397	R 5,062,946	6.47%	50.31%
	<b>Total</b>	<b>R 7,285,071</b>	<b>R 10,064,072</b>	<b>9.54%</b>	<b>100.00%</b>
Imports	<b>Auto Components (made by Suppliers)</b>	<b>R 2,857,608</b>	<b>R 4,347,565</b>	<b>13.03%</b>	45.15%
	Engines, Transmissions, Body Assemblies (made by OEMs)	R 400,830	R 566,338	10.32%	5.88%
	Finished Motor Vehicles	R 3,849,940	R 4,716,284	5.63%	48.97%
	<b>Total</b>	<b>R 7,108,379</b>	<b>R 9,630,187</b>	<b>8.87%</b>	<b>100.00%</b>

# Automotive GVC dynamics

- Producer driven value chain with heterogeneous inputs (quasi hierarchical)
- Technology intensive
- Very strong direct and indirect multipliers
- Dominance of MNC manufacturing capital
- Regional dispersion of vehicle assembly, but global dispersion of automotive component manufacturing
- Political economy factors critical, e.g. NAFTA auto production
- Triad economy dominance to mid 2000s

# Global dispersion of automotive production

- Triad silos slowly broken down since 1980s: Japan vs. USA vs. Europe
- Further change in MNC profile due to growth of independent OEMs in Korea, China, India
- Increasing trade in vehicles due to tariff liberalisation, but even more rapid growth in component trade
- Economies of scale matter for product development and marketing, less so for production (economies of scope)
- Asset specificity major driver – high fixed costs (e.g. vs. electronics, which is more modular)
- MNC giants in “heavyweight contest” across globe – OEMs and component firms (platforms vs. models)

# The changing relationship between developed and developing economies

- ISI growth path for many developing economies to 1990s (e.g. SA, Thailand) – successes and failures evident. Difficult as scale sensitive industry, therefore technology dependent on developed economies (current account vs. trade balance)
- Assembly vs. vehicle manufacture (SKD vs. CKD vs. manufacturing in developing economies)
- Market seeking vs. production seeking investments (SA vs. Thailand)
- Regional vehicle assembly/manufacture vs. global component sourcing – political and trade factors
- Market access matters: AGOA, EU-SA FTA, ASEAN, China



# The automotive industry in the industrialised world

- Remains major sector in number of developed economies, especially for assembly – for economic and political reasons, but dominance diminishing
- Factor cost issues very different to low value adding manufacturing like clothing (labour = 10% of vehicle price): infrastructure, skills, reliability, critical
- GCC revealed importance to industrialised economies: US government, EU country responses
- R&D (powertrain, drivetrain, design aesthetics) mainly located in Developed Economies – but slow shift is occurring

# South Africa's automotive GVC foothold

- ISI legacy = sunken capital/established infrastructure and expertise (6 LCPs 1961 to 1995) as platform for African supply
- AGOA and EU-SA FTA gives SA advantage over Asian competition
- SA market = 0.5-0.7% of global demand (25% CBU protection from 2012 to 2020 + 20% CKD protection). But was 115% in 1995
- MIDP major benefit – about R8 billion in incentives annually (outward bias), replaced by APDP with similar benefit levels in 2013 (production based incentive)

# Positioning of local OEMs in relation to global production allocations – Toyota IMV

## Model - Hilux / Fortuner

Plant	Production (units)	Exports (units)	Export markets	Note
Thailand	338 000	202 000	Asia, Oceania, Mid-East, Europe	} 2011. Thailand identified as primary production location (2 sites).
Indonesia	107 000	38 000	Mid-East	
South Africa	119 252	69 801	Europe, Africa	
Argentina	70 000	47 000	Mid-America, South America	
India	63 000	-	None	
Philippines	12 000	-		} Assume CKD assembly
Malaysia	23 000	-		
Venezuela	5 000	-		
Vietnam	12 000	-		
Taiwan	3 000	-		
Pakistan	4 000	-		
Egypt	-	-		
Total	756 252			

Allocation to SA needs to be evaluated relative to Thailand (primary location), Indonesia, Argentina and India.

SA represented approximately 16% of total global production in 2011 and was positioned as the second most important production location, albeit positioned only marginally ahead of Indonesia.

SA production allocation is based on supply to domestic market as well as African and European export markets.

# Positioning of local OEMs in relation to global production allocations – Mercedes Benz and BMW

## Model - C-Class

Plant	Production (units)	Exports (units)	Export markets	Note
Germany	997 628	40 407	USA	2011. Germany identified as primary location (2 sites)
South Africa	53 375			
Brazil	-			
China	85 270			
Total	1 136 273			

Allocation to SA needs to be evaluated relative to Germany (primary location), Brazil and China.

SA represented approximately 5% of total global production in 2011 and was positioned as the least important active production location.

SA production allocation is based on supply to domestic market as well as the USA.

## Model - 3-Series

Plant	Production (units)	Exports (units)	Export markets	Note
Germany	1 005 259	41 886	Japan, Australia, USA	2011. Germany identified as primary location (3 sites).
South Africa	52 908			
China	98 241			
Total	1 156 408			

Allocation to SA needs to be evaluated relative to Germany (primary location) and China.

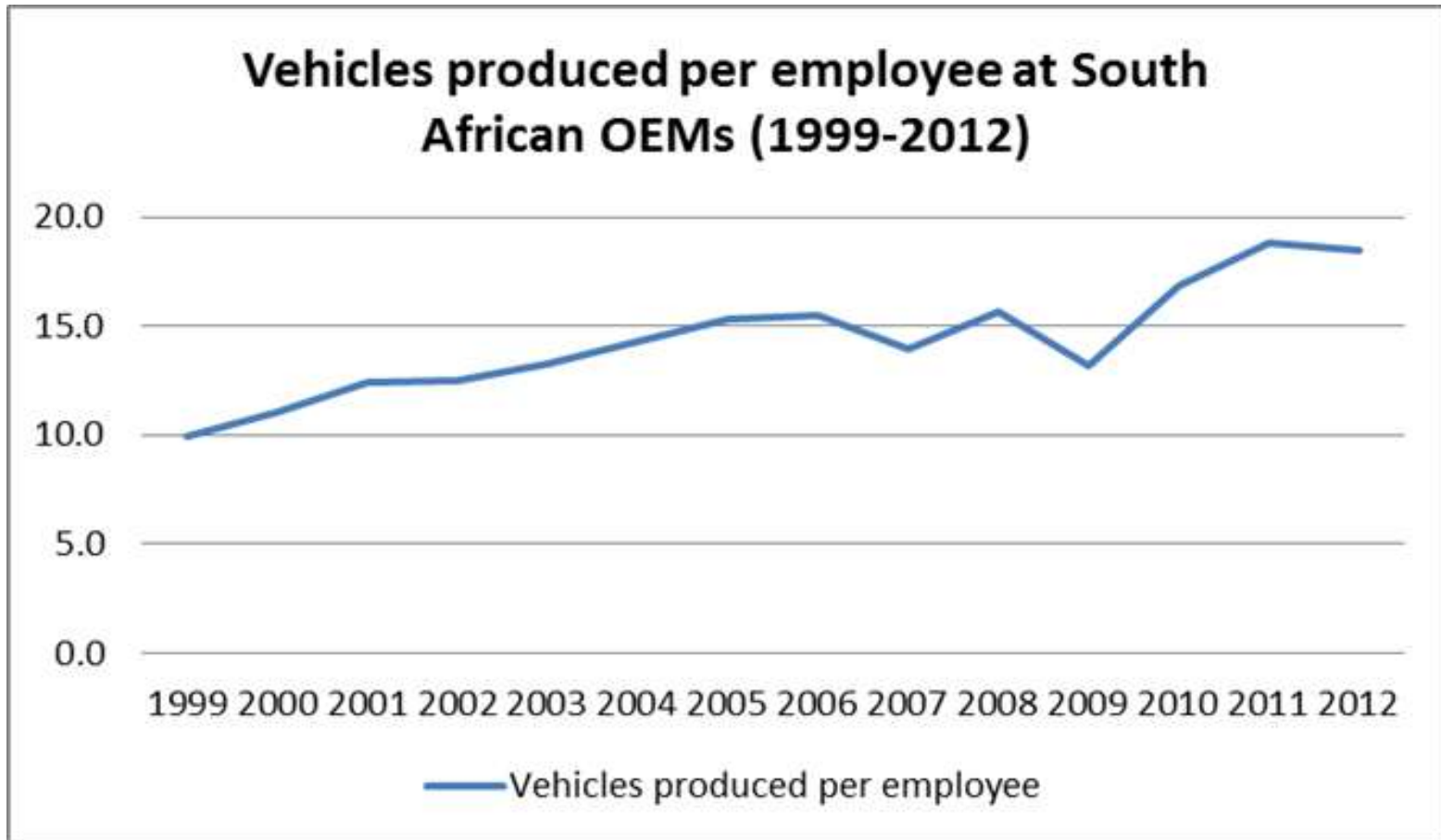
SA represented approximately 5% of total global production in 2011 and was positioned as the least important production location.

SA production allocation is based on supply to domestic market as well as the Japan, Australia and the USA.

# GVC conditions that create opportunities for SA's auto sector

- MNC technology access – all 7 SA OEMs are MNCs – led to lead and associated follower sourcing impacts (but “death of the local firm?”)
- Upgrading encouraged – process, product (lead vs. sister firms)
- Barriers to entry high – QMS, EMS, OHS
- But global cost, quality, productivity, reliability and visibility means poor performance not tolerated: GVC conditions that create opportunities also create threats

# SA vehicle assemblers' competitiveness improvement



# SA auto component industry competitiveness improvements

Market driver	KPI	South African performance standards					International standard 2012, n=26-59	SA vs. International standards, 2012
		1998/9, n=23-27	2001, n=23-27	2006, n=61-75	2012, n=29-36	Change 1998/9-2012		
Cost control	Inventory holding (operating days)	62.6	42.0	33.3	26.2	<b>58.1%</b>	24.5	<b>-6.5%</b>
Quality	Customer return rate (ppm)	3,270	1,240	254	226	<b>93.1%</b>	199	<b>-11.9%</b>
	Internal reject rate (%)	4.9	3.9	2.6	1.7	<b>65.3%</b>	1.6	<b>-5.9%</b>
	Internal scrap rate (%)	4.2	3.5	2.8	1.7	<b>59.5%</b>	1.5	<b>-11.8%</b>
Reliability	OTIF delivery reliability to customers (%)	92.2	92.7	93.5	97.7	<b>6.0%</b>	97.9	<b>-0.2%</b>
	OTIF delivery reliability from suppliers (%)	78.7	82.2	90.0	92.5	<b>17.5%</b>	93.3	<b>-0.9%</b>
Human Resources	Absenteeism – lost hours (%)	4.4	4.0	3.3	3.0	<b>31.8%</b>	2.6	<b>-13.3%</b>

# The SA auto sector's future?

- Domestic market can sustain small volume assembly and some component manufacture, but insufficient value addition (current account, trade balance implications) – “hollowing out effect?”
- Need exports (AGOA, EU-SA FTA present advantages), but does SSA represent a “viable automotive space”?
- Manufacturing capabilities? Lean production?
- Factor costs? Labour, overheads, materials
- National government demand side support vs. supply side competence
- Global benchmarks? Asia or Europe/Japan/USA?



# Critical demand and supply side policy considerations

## Demand side policy issues

- MIDP to APDP (exports to production)
- Tariffs and output incentives vs. market regulations that stimulate demand (e.g. Thailand vs. SA)
- Local procurement rules for government and SOEs
- Market access (SSA)
- Demand side support as crutch or wheel chair?

## Supply side policy issues

- Labour costs vs. productivity levels
- Overhead costs vs. scale
- Materials costs (IPP)
- Investment support
- Infrastructure support (e.g. rail, ports)
- Institutional support (e.g. Universities, FETs)
- Competitiveness upgrading support