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Global Value Chain Policy Research Methods
A Data Users Perspective

Timothy J. Sturgeon
Senior Researcher, MIT Industrial Performance Center

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GVC Research Methods

Typical goal: identify role of domestic industry in global industry and recommend paths for upgrading relative position. So, country-industry studies in global context.

1. Analysis of global industry (historical detail can be important)
   - Map main products along the chain
   - Map main processes along the chain
   - Main actors (lead firms and suppliers/service providers)
   - Technology trends
   - Regulations
   - Geography of innovation, production, consumption, and trade
     - Define industry through relevant official classifications (HS, ISIC, CPC, NAICS, etc.)
     - Map the sector's important technology and design clusters, production clusters, and end markets
2. Evaluation of the country's role in GVCs (repeat above in-country)
   - How does the country/industry fit?
   - How might it best improve its position?

GVC-oriented policy questions

- What are our country's strengths and weaknesses, from a GVC point of view?
- What industries should we promote?
- What industry segments should we promote?
  - E.g., "We want to encourage development of the ICT hardware industry in our country. Semiconductors lie at the core of the industry. Should we promote semiconductor fabrication?"
- What role should MNEs play in our development agenda?
  - Investment and employment
  - Technological learning
  - Local content requirements?
  - Supplier development programs?
  - Government purchasing?
  - Regulations (safety, environmental, labor)?
  - Appropriate (and allowable) trade policy
- What "upgrading" paths can our domestic firms follow?
  - From supplier to lead firm?
  - Outward FDI?
  - Start-ups?
- How do we balance our sector development goals with other development goals (e.g., infrastructure improvements, ICT, motorization, etc.).

Getting started

- Typically, this research has an sector focus
- Typically, the sector(s) are selected *a priori*
- When sector selection is part of the agenda, do we consider?
  - The main sector(s) in which the country is already participating?
  - The knowledge intensive sector(s) in which the country is participating in a nascent way?
  - The sector(s) to which the country's policy-makers aspire?
  - The sector(s) that we believe, from prior research experience, might offer the country a successful development experience?
  - The sectors for which rich data resources exist?
- OK go!

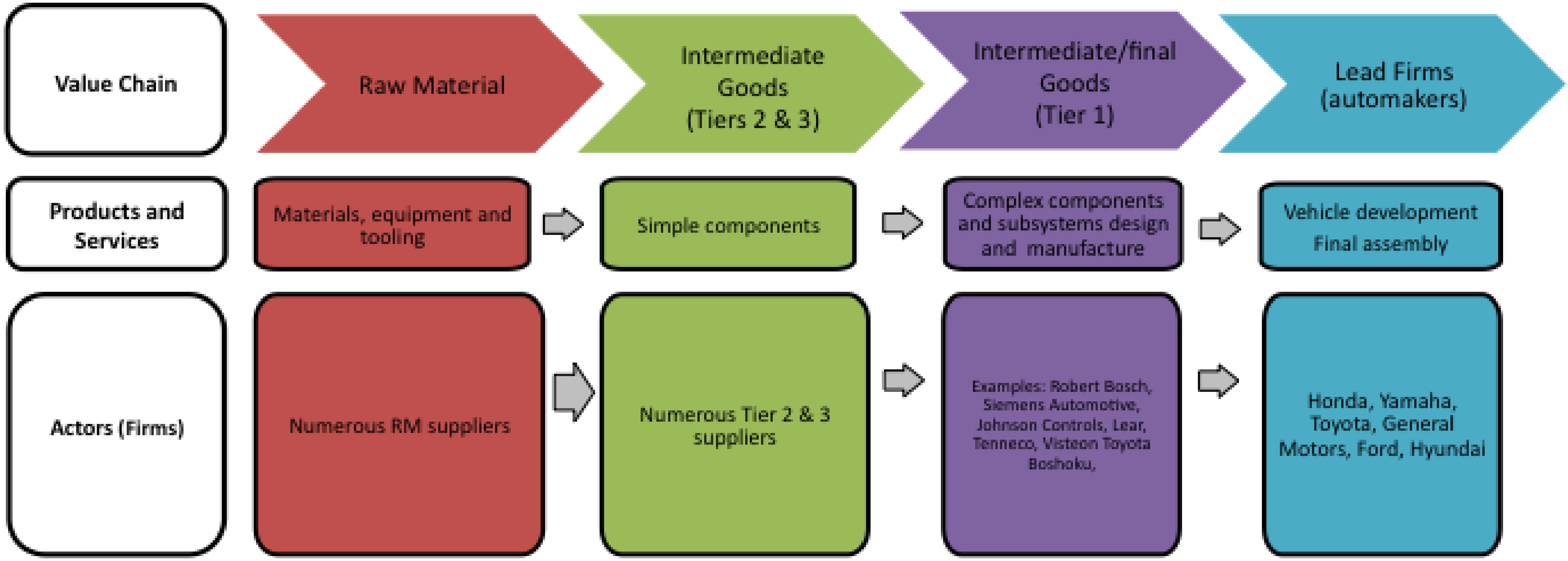
So we know the industries, what now?

- Scoping the industry: what’s in, what’s not?
- How is the industry “governed”?
  - Lead firm power
  - Linkage types (market, modular, relational)
- Define the main product/market segments
- Define the vertical segments
- Identify the main firm-level actors
- Try to understand the economic geography of key firms by business function
  - Headquarters, R&D, and Innovation-related
  - Production locations
  - Back office locations
  - Regional offices
  - Distribution and logistics chain
  - Main business partners
- Emerging technology and product trends
- Market characteristics and trends
- OK, now, what’s going on in the target country?

Case example: Motor Vehicles

- Global industry
  - Lead firms
  - Suppliers
  - Governance type
  - Producing countries
  - Trade
  - Technology and product trends

Motor Vehicle Global Value Chain*



* Manufacturing stages only

Source: Authors

Market trends, 2005-2014

Countries with More Than 1 Million New Vehicle Registrations Per Year

	2005	2009	2014	CAGR 2005-2009	CAGR 2009-2014	CAGR 2005-2014
China	5,758,189	13,644,794	23,491,893	18.8%	9.5%	15.1%
USA	17,444,329	10,601,368	16,841,973	-9.5%	8.0%	-0.4%
Japan	5,852,034	4,609,333	5,562,887	-4.7%	3.2%	-0.5%
Brazil	1,714,644	3,141,240	3,498,012	12.9%	1.8%	7.4%
Germany	3,614,886	4,049,353	3,356,718	2.3%	-3.1%	-0.7%
India	1,440,455	2,266,269	3,176,763	9.5%	5.8%	8.2%
United Kingdom	2,828,127	2,222,542	2,843,025	-4.7%	4.2%	0.1%
Russia	1,806,625	1,597,457	2,545,666	-2.4%	8.1%	3.5%
France	2,598,183	2,718,599	2,210,927	0.9%	-3.4%	-1.6%
Canada	1,630,142	1,482,232	1,889,437	-1.9%	4.1%	1.5%
South Korea	1,145,230	1,461,865	1,661,868	5.0%	2.2%	3.8%
Italy	2,495,436	2,357,443	1,492,642	-1.1%	-7.3%	-5.0%
Iran	857,500	1,320,000	1,287,600	9.0%	-0.4%	4.1%
Indonesia	533,917	486,088	1,208,019	-1.9%	16.4%	8.5%
Mexico	1,168,508	775,751	1,176,305	-7.9%	7.2%	0.1%
Australia	988,269	937,328	1,113,224	-1.1%	2.9%	1.2%
Total	**65,934,740**	**65,593,939**	**88,240,088**	**-0.1%**	**5.1%**	**3.0%**

Source: Adapted from OICA http://www.oica.net/wp-content/uploads//Ranking-2014-Q4-Rev.-22-July.pdf
Excludes motorcycles.

Note: Shaded countries are newly industrialized, transition, or developing

World Motor Vehicle Production

Countries Producing More Than 1 Million Units in 2014

	Country	2013	2014	% change		Country	2013	2014	% change
1	China	22,037,587	23,661,183	6.9%	10	Thailand	3,758,842	2,986,298	-25.9%
2	USA	17,262,423	18,489,674	6.6%	11	Spain	2,524,640	2,852,536	11.5%
3	Japan	9,891,505	10,043,920	1.5%	12	France	2,022,220	2,143,464	5.7%
4	Germany	5,996,540	6,211,070	3.5%	13	Russia	2,264,506	1,935,687	-17.0%
5	S. Korea	4,712,528	4,700,020	-0.3%	14	UK	1,647,408	1,638,736	-0.5%
6	Mexico	4,049,887	4,470,287	9.4%	15	Turkey	1,530,216	1,524,101	-0.4%
7	India	4,187,566	4,024,835	-4.0%	16	Indonesia	1,205,087	1,325,200	9.1%
8	Canada	3,774,731	3,850,903	2.0%	17	Czech Rep.	1,128,473	1,246,506	9.5%
9	Brazil	4,247,381	3,631,641	-17.0%	18	Iran	840,939	1,223,369	31.3%

Source: Adapted from OICA http://www.oica.net/wp-content/uploads//Ranking-2014-Q4-Rev.-22-July.pdf
Excludes motorcycles.

Note: Shaded countries are newly industrialized, transition, or developing

Production and market lists look similar: in this industry it's build where you sell!

Lead firms – top 15 vehicle producers, 2014

Rank	Corporate Group	Home Cntry	Unit Pdn	Share	Pass Cars	Light Com
1	Toyota	Japan	10,475,338	11.5%	8,788,018	1,405,072
2	Volkswagen	Germany	9,894,891	10.9%	9,766,293	128,598
3	General Motors	USA	9,609,326	10.6%	6,643,030	2,951,895
4	Hyundai	South Korea	8,008,987	8.8%	7,628,779	280,684
5	Ford	USA	5,969,541	6.6%	3,230,842	2,643,854
6	Nissan	Japan	5,097,772	5.6%	4,279,030	796,992
7	Fiat	Italy	4,865,758	5.4%	1,904,618	2,812,345
8	Honda	Japan	4,513,769	5.0%	4,478,123	35,646
9	Suzuki	Japan	3,016,710	3.3%	2,543,077	473,633
10	Peugeot	France	2,917,046	3.2%	2,521,833	395,213
11	Renault	France	2,761,969	3.0%	2,398,555	363,414
12	BMW	Germany	2,165,566	2.4%	2,165,566	
13	SAIC	China	2,087,949	2.3%	1,769,837	265,087
14	Daimler	Germany	1,973,270	2.2%	1,808,125	165,145
15	Changan	China	1,447,017	1.6%	1,089,179	262,797

Source: Adapted from OICA http://www.oica.net/wp-content/uploads//Ranking-2014-Q4-Rev.-22-July.pdf
Excludes motorcycles.

Note: Shaded rows indicate producers headquartered in countries outside the traditional, pre-1980s major producing countries (the USA, Western Europe, Japan, and Russia).

Lead firm ownership, so far, is mainly tied to historical centers of the industry…

Lead firms – top 16-30 vehicle producers, 2014

Rank	Corporate Group	Home Cntry	Unit Pdn	Share	Pass Cars	Light Com
16	Mazda	Japan	1,328,426	1.5%	1,261,521	66,905
17	Dongfeng	China	1,301,695	1.4%	745,765	201,667
18	Mitsubishi	Japan	1,262,342	1.4%	1,199,823	61,302
19	BAIC	China	1,115,847	1.2%	538,027	278,949
20	Tata	India	945,113	1.0%	614,247	11,399
21	Geely	China	890,652	1.0%	890,652	
22	Fuji	Japan	888,812	1.0%	888,812	
23	Great Wall	China	730,570	0.8%	610,023	120,547
24	First Auto Works	China	623,708	0.7%	391,079	37,195
25	Iran Khodro	Iran	586,725	0.6%	493,585	90,301
26	Mahindra	India	552,912	0.6%	372,637	2,562
27	Isuzu	Japan	541,068	0.6%		44,724
28	Brilliance	China	520,228	0.6%	235,115	219,093
29	Chery	China	468,287	0.5%	449,333	18,954
30	JAC	China	467,597	0.5%	196,777	93,478

Source: Adapted from OICA http://www.oica.net/wp-content/uploads//Ranking-2014-Q4-Rev.-22-July.pdf
Excludes motorcycles.

Note: Shaded rows indicate producers headquartered in countries outside the traditional, pre-1980s major producing countries (the USA, Western Europe, Japan, and Russia).

…but this could be changing…

Lead firms – global production share, 2014

Production by Nationality		Share
Japanese	27,124,237	29.9%
American	15,801,469	17.4%
German	14,033,727	15.5%
Chinese	11,361,820	12.5%
South Korean	8,008,987	8.8%
Italian	4,865,758	5.4%
Indian	1,594,581	1.8%
Iranian	988,687	1.1%
Russian	537,426	0.6%

Source: Adapted from OICA http://www.oica.net/wp-content/uploads//Ranking-2014-Q4-Rev.-22-July.pdf
Excludes motorcycles.
Note: Shaded rows indicate producers headquartered in countries outside the traditional, pre-1980s major producing countries (the USA, Western Europe, Japan, and Russia).

…but still, about 70% of world production is from firms based in the historical centers of the industry

Top 25 motor vehicle parts suppliers

Rank	Company	Home country	OEM* sales 2014	NA	Eur.	Asia	ROW	Products
1	Robert Bosch	Germany	44,240 e	19	50	28	3	Gasoline systems, diesel systems, chassis system controls, electrical drives, starter motors & generators, car multimedia, electronics, steering systems, battery technology, exhaust gas turbochargers & treatment systems, service solutions
2	Magna	Canada	36,325	54	39	5	2	Body, chassis, interior, exterior, seating, powertrain, electronic, vision, closure & roof systems & modules; vehicle engineering & contract manufacturing
3	Continental	Germany	34,418 e	23	49	25	3	Electronic brakes, stability management systems, tires, foundation brakes, chassis systems, safety system electronics, telematics, powertrain electronics, interior modules, instrumentation, technical elastomers
4	Denso	Japan	32,365 fe	22	12	64	2	Thermal, powertrain control, electronic & electric systems, small motors, telecommunications
5	Aisin Seiki	Japan	28,072	18	8	73	1	Body, brake & chassis systems, electronics, drivetrain, & engine components
6	Hyundai Mobis	South Korea	27,405 f	20	11	68	1	Chassis, cockpit & front-end modules; ABS, ESC, MDPS, airbags, LED lamps, ASV parts, sensors, electronic control systems, hybrid car powertrains, parts & power control units
7	Faurecia	France	25,043	25	56	14	5	Seating, emissions, control technologies, interior systems & exteriors 7
8	Johnson Controls	USA	23,589 f	48	39	11	2	Complete automotive seats & seat components, lead acid & hybrid vehicle batteries
9	ZF	Germany	22,192 f	20	56	20	4	Transmissions, chassis components & systems, steering systems, clutches, dampers
10	Lear	USA	17,727	38	40	17	5	Seating & electrical distribution systems
11	Valeo	France	16,878 e	20	49	28	3	Micro hybrid systems, electrical & electronic systems, thermal systems, transmissions, wiper systems, camera/sensor technology, security systems, interior controls
12	TRW Automotive	USA	16,240 e	41	43	12	4	Steering, suspension, braking & engine components; fasteners, occupant-restraint systems, electronic safety & security systems
13	Delphi Automotive	USA	16,002 e	35	38	23	4	Mobile electronics; powertrain, safety, thermal, controls & security systems; electrical/electronic architecture, in-car entertainment technologies
14	Yazaki	Japan	15,200 e	25	–	–	–	Wiring harnesses, connectors, junction boxes, power distribution boxes, instrumentation, high voltage systems
15	ThyssenKrupp	Germany	12,801 f	23	–	–	–	Steering, dampers, springs & stabilizers, camshafts, forged machined components, bearings, undercarriage systems & components, axle assembly, assembled camshafts, forged crankshafts & drivetrain components; high-strength, lightweight steel, electrical steel, tailored tempering, cell & battery production lines, valve control systems
16	BASF	Germany	12,682 f	21	57	16	6	Coatings, catalysts, engineering plastics, polyurethanes, coolants, brake fluids, lubricants, battery materials
17	Sumitomo Electric	Japan	12,325 fe	26	–	–	–	Electrical distribution systems, electronics, connection systems
18	Mahle	Germany	12,110 f	22	54	17	7	Piston systems, cylinder components, valvetrain systems, air & liquid management systems, powertrain engineering, vehicle climatization, climate compressors, engine & powertrain cooling, drives, starters & alternators, electrical driven auxiliaries
19	JTEKT	Japan	11,200 fe	23	18	58	1	Bearings, steering systems, driveline systems & machine tools
20	CalsonicKansei	Japan	9,789	32	11	21	36	Climate control, engine cooling & exhaust systems; instrument clusters, console boxes, instrument panels, cockpit & front-end modules
21	Panasonic Automotive Systems	Japan	9,643 fe	25	12	41	22	Cameras, video & premium audio systems; navigation systems, compressors, batteries, motors, monitors; sensors; switches, HUDs
22	Autoliv	Sweden	9,240	34	33	33	–	Airbags, seat belts, safety electronics, steering wheels
23	Schaeffler	Germany	8,983	20	48	25	7	Anti-friction bearings, engine components, chassis & transmissions, wheel & axle bearings, clutch & transmission systems, dampers
24	Hitachi Automotive Systems	Japan	8,850 fe	25	–	–	–	Engine management, electric powertrain, drive control
25	Toyota Boshoku	Japan	8,730 fe	20	7	71	3	Seats, door trim, carpet, headliners, oil & air filters, door panels, fabrics & substrates

Source: Automotive News

Note: Shaded countries are newly industrialized, transition, or developing

Global supplier ownership, so far, is even more tied to historical industry centers

Top 26-50 motor vehicle parts suppliers

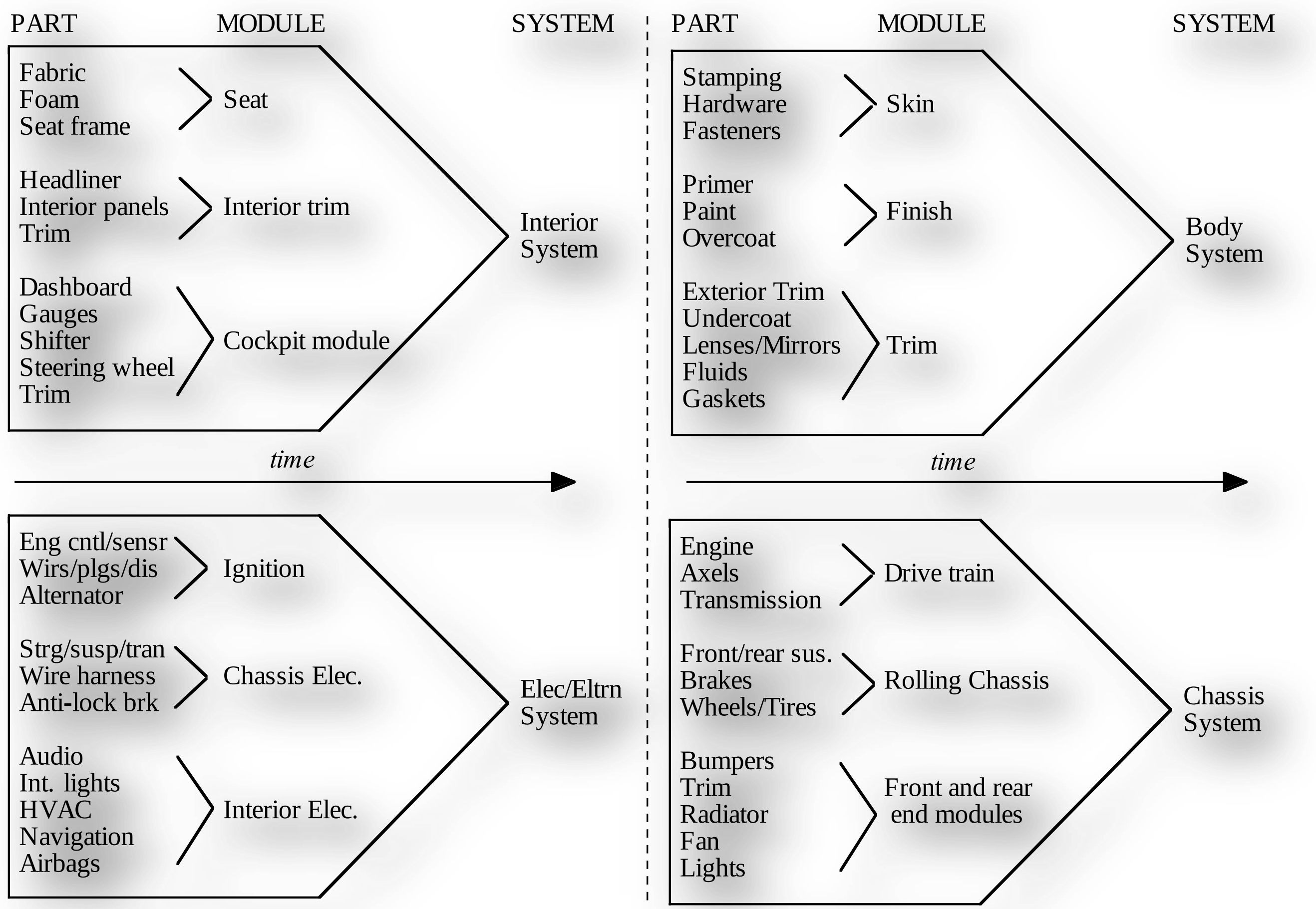
26	Yanfeng AutoTrim Systems	China	8,592	3	1	96	–	Interiors, exteriors, electronics, seating, safety
27	Tenneco	USA	8,420 e	49	30	15	6	Emission-control systems, manifolds, catalytic converters, diesel aftertreatment systems, catalytic reduction mufflers, shock absorbers, struts, electronic suspension products & systems
28	Gestamp Automocion	Spain	8,308	16	63	11	10	Body-in-white stamping & assemblies, chassis, hinges, power systems, driver controls
29	BorgWarner	USA	8,305	29	45	26	–	Turbochargers, engine valve-timing systems, ignition systems, emissions systems, thermal systems, transmission-clutch systems, transmission-control systems & torque management systems
30	Magneti Marelli	Italy	8,052 f	14	67	9	10	Lighting, powertrain transmissions, electronics, suspensions systems, active & passive shock absorbers, exhaust systems, plastic parts
31	Visteon	USA	7,509	29	36	32	3	Cockpit electronics, thermal energy management
32	Hyundai-WIA	South Korea	7,368	1	7	84	9	Halfshafts, sideshafts, engines, manual transmissions/transaxles, transfer cases, power transfer units, chassis modules, axles
33	Cummins	USA	7,150	56	15	20	9	Diesel & natural gas engines
34	GKN	UK	7,018	34	40	22	4	Driveline halfshafts, driveshafts & AWD; powder metal engine & components; automotive structures & chassis systems, transmission
35	HELLA	Germany	6,900 fe	21	53	26	–	Electronic & lighting components & systems
36	Brose Fahrzeugteile	Germany	6,872	24	54	20	2	Window regulators, door modules, seat adjusters, closure systems, power closure systems, seat adjusters, power head restraints, electric drives & motors, electronics
37	Toyoda Gosei	Japan	6,700 fe	29	6	65	–	Safety, sealing & interior systems; optoelectronics, exterior trim, rubber & plastic functionals, fuel systems
38	JATCO	Japan	6,633 fe	27	–	73	–	Automatic transmissions, continuously variable transmissions, axles, driveshafts, sealing & thermal management products
39	Dana	USA	6,617	47	30	11	12	Axles, driveshafts, sealing & thermal management products
40	Plastic Omnium	France	6,490	29	49	18	4	Fascias, front-end modules, rear-end modules, fenders, body panels, fuel systems
41	Samvardhana Motherson	India	6,100 f	6	47	42	5	Wiring harnesses, rearview mirrors, molded plastic parts & assemblies, plastic modules for cockpits, door trims & bumpers, molded & extruded rubber components, lighting systems, air intake manifolds, pedal assemblies
42	Mitsubishi Elec	Japan	6,000 fe	30	30	40	–	Engine management, ignition, audio & navigation systems; alternators & starter motors
43	IAC Group	Luxem-bourg	5,900	54	39	7	–	Instrument panels, consoles, cockpits, doors & trim, flooring, acoustics, headliners & overhead systems, other interior & exterior components
44	Koito Mfg.	Japan	5,805 f	16	3	10	72	Exterior lighting
45	Mando Corp.	South Korea	5,373 f	20	1	78	1	Brakes, steering, suspension & integrated driver assistance, systems & components
46	Flex-N-Gate	USA	$5,103	91	6	1	2	Interior & exterior plastics, metal bumpers & hitches, structural metal assemblies, forward & signal lighting, mechanical assemblies, prototyping & sequencing
47	Goodyear Tire & Rubber	USA	5,000 e	36	34	20	10	Tires
48	Tokai Rika	Japan	4,971 f	24	6	22	48	Switches, steering wheels, airbags, shifters, key cylinders & lock sets, interior & lever combination switches; floor transmission
49	Takata	Japan	4,900 f	34	28	38	–	Airbags, seat belts, electronics, steering wheels, interior trim & textiles
50	Draexlmaier	Germany	4,650 e	16	–	–	–	Electrical systems, electrical & electronic components, interiors, system assembly

Source: Automotive News

…but this could also be changing

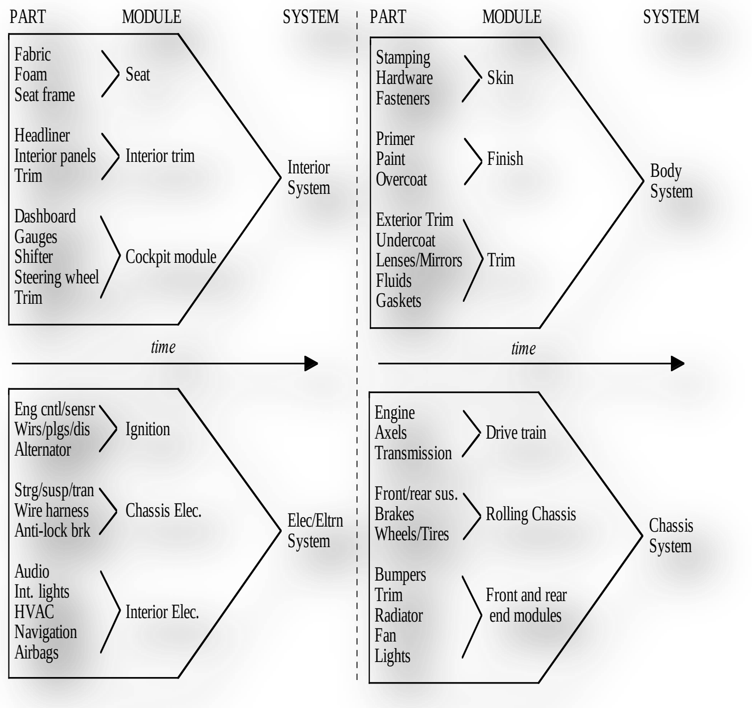
Supplier Consolidation

Integration of Automotive Components: from Parts to Modules to Systems



Source: Sturgeon and Florida, 2004

Elaborated GVC categories from CGGC



Source: Sturgeon and Florida, 2004

BEC 4 (SNA)	Value Chain Stage	Total Motor Vehicle Exports 2014, $B	% Total Motor Vehicle Exports 2014	Value chain actor
BEC 53 Parts and accessories (Intermediate)		**609**	**46.9**	**Supplier**
	Components	**535**	**41.2**	**Supplier**
	Of the Body System	262	20.2	Supplier
	Of the Drive train	159	12.3	Supplier
	Electrical Systems	114	8.8	Supplier
	Of the Body System or Drive train	103	7.9	Supplier
	Subassemblies	**74**	**5.7**	**Automaker**
	Body System	3	0.3	Automaker
	Drive train	70	5.4	Automaker
BEC 51 Passenger motor vehicles (unclassified)	**Final Products**	**688**	**53.1**	**Automaker**
BEC 5 Transportation equipment and parts and accessories thereof	**Total**	**1,297**	**100**	

Triple counting?

Source: CGGC

Exports by GVC Stage, 2005-2014

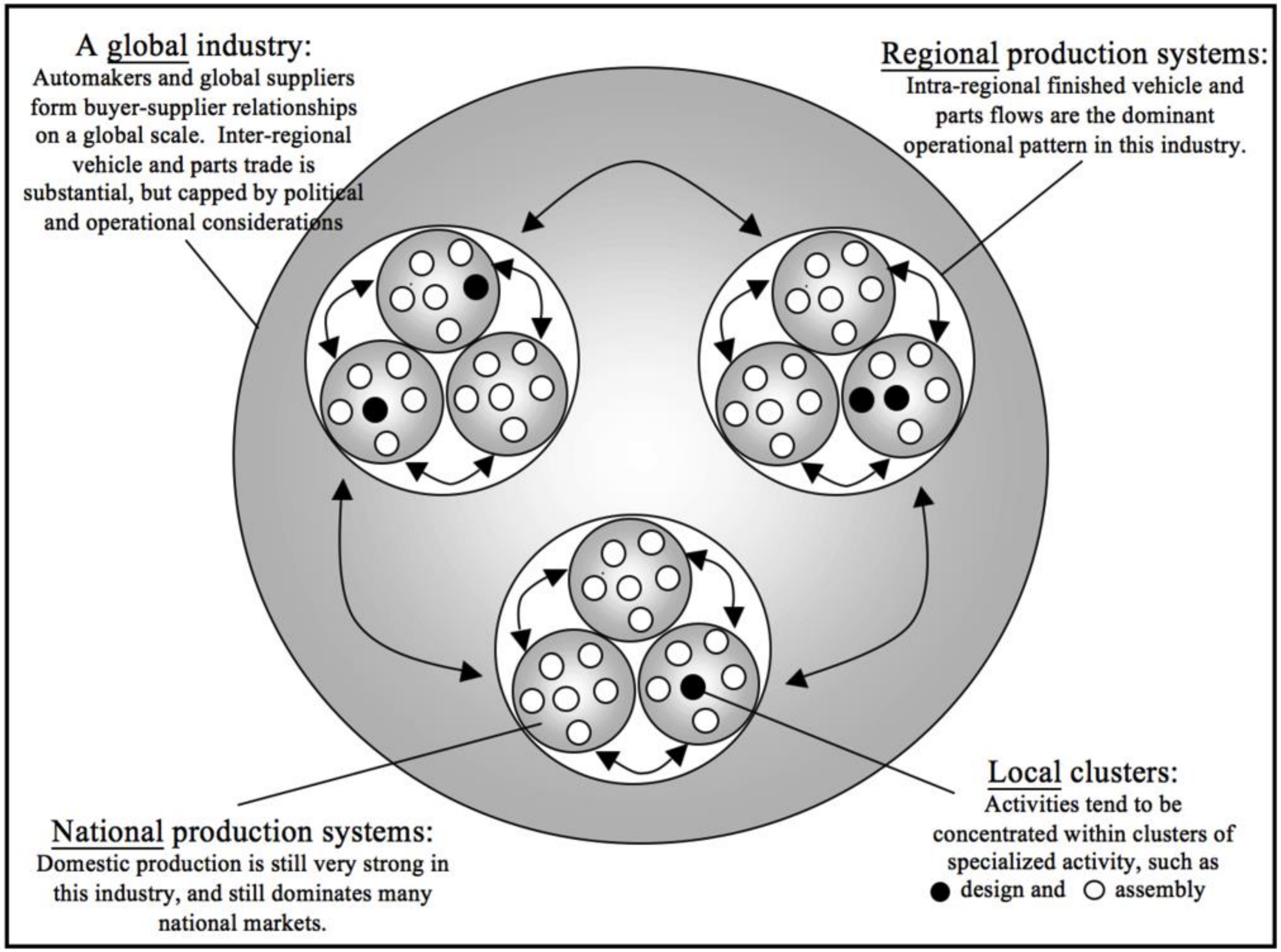
World Motor Vehicle Sector Exports by Value Chain Stage and Subsector

Value Chain Stage and Subsector	Value ($, USD)				
	2005	2007	2010	2012	2014
Total	**819,469,339,004**	**1,064,008,993,426**	**1,012,562,256,997**	**1,192,528,151,880**	**1,296,694,618,922**
Components	**282,179,540,119**	**378,789,600,610**	**403,417,278,443**	**487,682,894,025**	**534,746,446,638**
Of the Body System	145,485,535,984	192,948,909,462	200,557,762,268	239,701,680,837	261,513,275,189
Of the Drive train	81,384,627,565	112,734,842,393	120,426,304,757	148,630,528,165	159,472,985,970
Electrical Systems	55,309,376,570	73,105,848,755	82,433,211,418	99,350,685,023	113,760,185,479
Of the Body System or Drive train	86,012,695,747	94,816,043,708	91,620,392,716	103,069,627,970	102,591,940,893
Subassemblies	**54,030,168,055**	**68,854,389,333**	**59,157,460,118**	**68,671,086,880**	**73,877,713,932**
Body System	2,979,694,088	3,482,140,114	3,491,534,874	4,239,531,708	3,385,339,877
Drive train	51,050,473,967	65,372,249,219	55,665,925,244	64,431,555,172	70,492,374,055
Final Products (Passenger Vehicle)	**483,259,630,830**	**616,365,003,483**	**549,987,518,436**	**636,174,170,975**	**688,070,458,352**
Value Chain Stage and Sector	**Share of Total Motor Vehicle Exports**				
	2005	**2007**	**2010**	**2012**	**2014**
Components	**34.4**	**35.6**	**39.8**	**40.9**	**41.2**
Of the Body System	17.8	18.1	19.8	20.1	20.2
Of the Drive train	9.9	10.6	11.9	12.5	12.3
Electrical Systems	6.7	6.9	8.1	8.3	8.8
Of the Body System or Drive train	10.5	8.9	9.0	8.6	7.9
Subassemblies	**6.6**	**6.5**	**5.8**	**5.8**	**5.7**
Body System	0.4	0.3	0.3	0.4	0.3
Drive train	6.2	6.1	5.5	5.4	5.4
Final Products (Passenger Vehicle)	**59.0**	**57.9**	**54.3**	**53.3**	**53.1**

Source: UN COMTRADE

Ongoing attempts to adapt trade statistics to sector-specific GVC structures

The Nested Geographic and Organizational Structure of the Automotive Industry



Source: Sturgeon et al, 2009

Case example:
Motor Vehicles in Vietnam

- Vietnam's role
  - Market characteristics
  - Policy environment
  - Production and trade by lead firms
  - Production and trade by suppliers
  - Local content
  - Trade in value added
  - Detailed trade statistics

Passenger Vehicle Investment in Vietnam

- 1951: Auto Hoa Binh, a state-run manufacturer of military vehicles first opens in Hanoi
- 1991: Auto Hoa Binh forms JV (VMC) with Colombian Motors (Philippines) and Nichmen Corp. (Japan)
  - CKD assembly for Kia (Korea), Mazda (Japan), BMW (Germany), and Subaru (Japan).
- 1995: three additional JV licenses for Mitsubishi (Japan), Daewoo (Korea), and Daimler Benz (Germany)
- 1997: EIGHT additional licenses issued, five acted on: Isuzu, Hino, Daihatsu, Toyota (all Toyota group companies) and Ford (USA), bringing the total number of vehicle assembly plants in Vietnam to eleven for an annual market of about 15,000 units

Vietnam’s 14 Passenger Vehicle Final Assembly Plants, 2013

Automaker	Brands assembled	Home country of brand(s)	Region	Capacity	Cap. Share
Toyota Motor Vietnam	Toyota	Japan	North	36,500	20%
General Motors Vietnam	Chevrolet	USA	North	30,000	16%
Vietnam Motors	BMW, Chery, Kia, Nissan	Germany, China, South Korea, Japan	North	24,000	13%
Ford Vietnam	Ford	USA	North	14,000	8%
Honda Vietnam	Honda	Japan	North	10,000	5%
VINAMOTOR	Hyundai	South Korea	North	5,500	3%
Duc Phong	Great Wall	China	North	3,000	2%
		North Total	***North***	***123,000***	***67%***
Truong Hai Automobile	Kia	South Korea	Center	20,000	11%
Vina Mazda	Mazda	Japan	Center	10,000	5%
Vinastar Motors	Mitsibishi	Japan	Center	5,000	3%
		Center Total	***Center***	***35,000***	***19%***
Vietnam Suzuki	Suzuki	Japan	South	12,000	7%
Mercedes Benz Vietnam	Daimler Benz	Germany	South	5,500	3%
Mekong Auto	Fiat, Ssanyong, PMC	Italy, South Korea, North Korea	South	5,000	3%
Isuzu Vietnam	Isuzu	Japan	South	2,000	1%
		South Total	***South***	***24,500***	***13%***
		Total Capacity 2013		***182,500***	***100%***
		Total Sales 2013		***127,000***	
		Finished vehicle Imports, 2013		***16,747***	
		Estimated average capacity utilization		***40%***	

CKD

Viable single-brand plants?

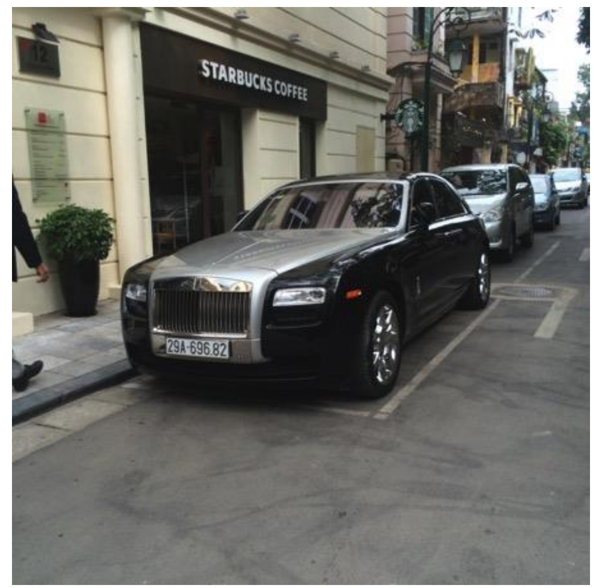
Source: Roland Berger, 2014 (plants, sales, capacity); UN COMTRADE, imports; Author’s estimate, capacity utilization

Vehicle Demand in Vietnam

2009, 2011, 2013 and 2020 forecast

	2009	2011	2013	2020	Share 2020
Motorbikes	2,525,000	3,322,000	3,334,000	5,424,000	97%
Passenger vehicles	81,000	89,000	88,000	127,000	2%
Commercial vehicles	16,000	14,000	16,000	31,000	1%
Total	2,622,000	3,425,000	3,438,000	5,582,000	100%

Source: Roland Berger, 2014



Motorbikes in Vietnam

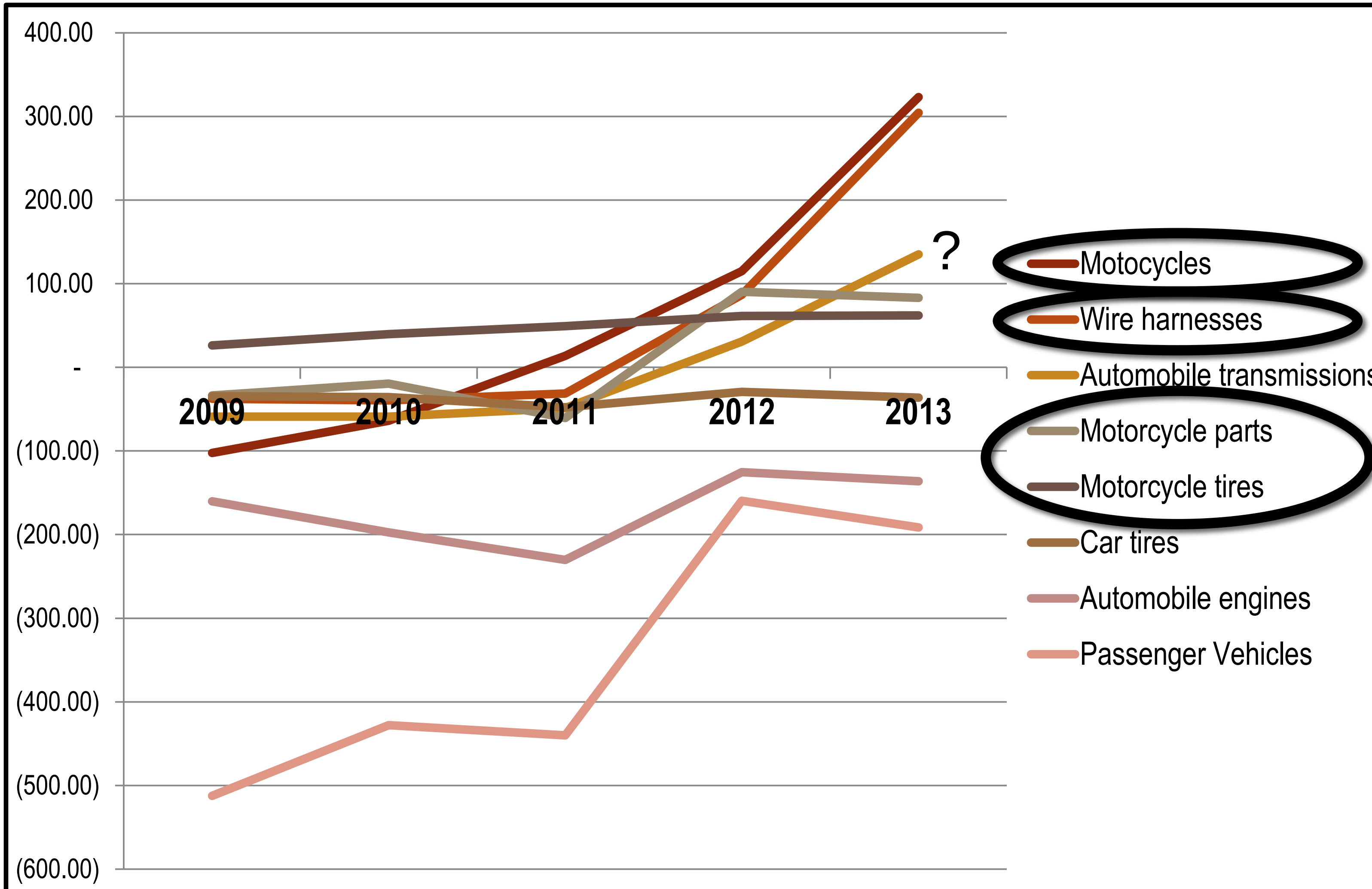
- 40 million units were registered in 2014 for a population of 90 million
- Vietnam the fourth largest two-wheeler market in the world after China, India and Indonesia.
- The five largest motorbike makers in the country are Honda (Japan), Yamaha (Japan), SYM (China), Suzuki (Japan) and Piaggio (Italy)
- Honda and Yamaha account for over 90 percent of local market share.
- Local parts content is high

Main Global Motor Vehicle Parts Suppliers in Vietnam, 2014

Company	Product(s)	Nationality	Year of major investment(s)
Sumitomo, various companies	Wire harnesses and wiring components	Japan	Various years
Yazaki	Wire harnesses and wiring components	Japan	2001
Hitachi Cable	Wire harnesses	Japan	2008
Denso San Pham	Various engine parts, gas pedal assemblies, etc.	Japan	2001
Bridgestone	Tires for passenger vehicles	Japan	2014
Yokohama	Tires for motorcycles, light trucks, and industrial vehicles	Japan	1997
IRC	Tires for motorcycles	Japan	1997
Kumho Tires	Tires for passenger vehicles	South Korea	2008
Hyundai Kefico	Sensors and Actuators for vehicles	Japan	2010
Toyota Boshoku	Seats and interior parts; side curtain airbags	Japan	1996 and 2004
Robert Bosch	Pushbelts used for continuously variable transmission (CVT) in automobiles.	Germany	2008
Asahi Denso	Ignition switches and locks for motorcycles	Japan	2006
Exedy	Clutches for motorcycles	Japan	2006
Kyocera Vietnam	Ceramic components and connectors	Japan	2014
Toyoda Gosei	Bags for airbag modules	Japan	2005

Source: Author desk and field research

Vietnam's trade balance in motorcycles, passenger vehicles, and selected parts
2009-2013, US$M



Source: UN COMTRADE

Motor vehicles in Vietnam, hypotheses

- Development of a viable export industry, with backward linkages, usually requires a viable domestic market
  - motorcycles and motorcycle parts, not autos
- Specialization in labor intensive processes can be across industries
  - Wire harness, electronics, apparel and footwear assembly
- Even with poor localization, FDI in final assembly can sometimes open up opportunities for parts exports
  - Wire harnesses, scaled for local demand + export
- Products with linkages to natural resources can be viable export opportunities, but strong local market demand helps
  - Natural rubber -> motorcycle tires
- Some companies have more aggressive localization strategies than others
  - Toyota

Resources used

- “Official” statistics
  - TiVA 2009 estimate: Vietnam’s transportation equipment exports embodied 57% imported content.
    - Too low? (TiVA documentation refers to a downward bias in its indicator of import content)
    - Lack of product detail
  - Comtrade
- Industry association and private
  - OICA (production by product, country, and firm)
  - Automotive news (top supplier dataset)
  - Roland Berger (commissioned study, draws on Vietnam government production and vehicle registration statistics)
- Field and desk research
  - Author visited Vietnam for research in 1993, 1997, and 2015
- Accumulated domain knowledge on industry
  - First large scale motor vehicle industry study in which author participated was 1996
  - Has visited automotive companies and manufacturing plants in USA, Canada, Mexico, Germany, Austria, Japan, Taiwan, China, and Vietnam

Data resource improvements?

- FDI statistics by value chain role (lead firm, supplier)
- TiVA-like statistics with product detail
- Global business register to identify enterprise group relationships
- HS and CPC services products pre-assigned to sector and degree of value added
- Visualization tools
- What else?

Thank you!