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Global supply chains and the Brazilian automotive industry: the role of public policies

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(Based on a study to the ILO Research Department)

Presentation structure

- Highlights of the Brazilian automotive industry in GSCs

- Public policies and the sector's dynamics

- Concluding remarks

Highlights of the Brazilian automotive industry in GSCs

- Brazil -> large auto market dominated by transnational corporations
- Vehicle production: from 1.7 million (2000) to 3.8 million (2013)
- From 2.9% (2000) to 4.2% (2013) world's total vehicle production
- 7th largest world producer and 4th largest sales market
- Production capacity: roughly 5 million units
- During Brazilian crisis: production of 2.4 million units (2015), 2.7% of world's production -> slow recovery

Highlights of the Brazilian automotive industry in GSCs

- GSCs and the Brazilian auto industry:
  - Changes in geographical distribution of world vehicle production and demand -> developing economies (particularly, China)
  - Pattern of productive specialization of the Brazilian auto industry -> compact, lower value-added vehicles, integrated with Argentina -> risk of new entrants
  - Flexfuel vehicles and new technologies
  - Dynamics of transnational automakers and responses during the crisis

Vehicle production in 2000, 2014 and 2015 (in thousands of units and %)

Country and Region	2000	(%)	2014	(%)	2015	(%)	Growth rate 2000-2015 (%)	Contribution rate of growth 2000-2015 (%)
Europe	20,275	34.7	20,631	22.9	21,096	23.2	4.0	2.5
Germany	5,527	9.5	5,907	6.6	6,033	6.6	9.2	1.6
America	19,775	33.9	21,219	23.6	20,965	23.1	6.0	3.7
Nafta	17,699	30.3	17,419	19.4	17,949	19.8	1.4	0.8
Mexico	1,935	3.3	3,365	3.7	3,565	3.9	84.3	5.0
USA	12,800	21.9	11,660	13.0	12,100	13.3	-5.5	-2.2
South America	2,076	3.6	3,799	4.2	3,016	3.3	45.2	2.9
Brazil	1,671	2.9	3,146	3.5	2,429	2.7	45.4	2.3
Asia-Oceania	17,928	30.7	47,360	52.7	47,786	52.6	166.5	92.1
China	2,069	3.5	23,723	26.4	24,503	27.0	1,084.3	69.2
Japan	10,144	17.4	9,775	10.9	9,278	10.2	-8.5	-2.7
South Korea	3,115	5.3	4,525	5.0	4,556	5.0	46.3	4.4
Africa	317	0.5	720	0.8	836	0.9	163.6	1.6
Total	58,374	100.0	89,931	100.0	90,781	100.0	55.5	100.0
Memo:								
BRICS	5,739	9.8	33,170	36.9	33,059	36.4	476.0	84.3
Brazil	1,671	2.9	3,146	3.5	2,429	2.7	45.4	2.3
Russia	1,203	2.1	1,895	2.1	1,384	1.5	15.1	0.6
India	796	1.4	3,840	4.3	4,126	4.5	418.2	10.3
South Africa	357	0.6	566	0.6	616	0.7	72.5	0.8
China	2,069	3.5	23,723	26.4	24,503	27.0	1,084.3	69.2
Total	58,374	100.0	89,931	100.0	90,781	100.0	55.5	100.0

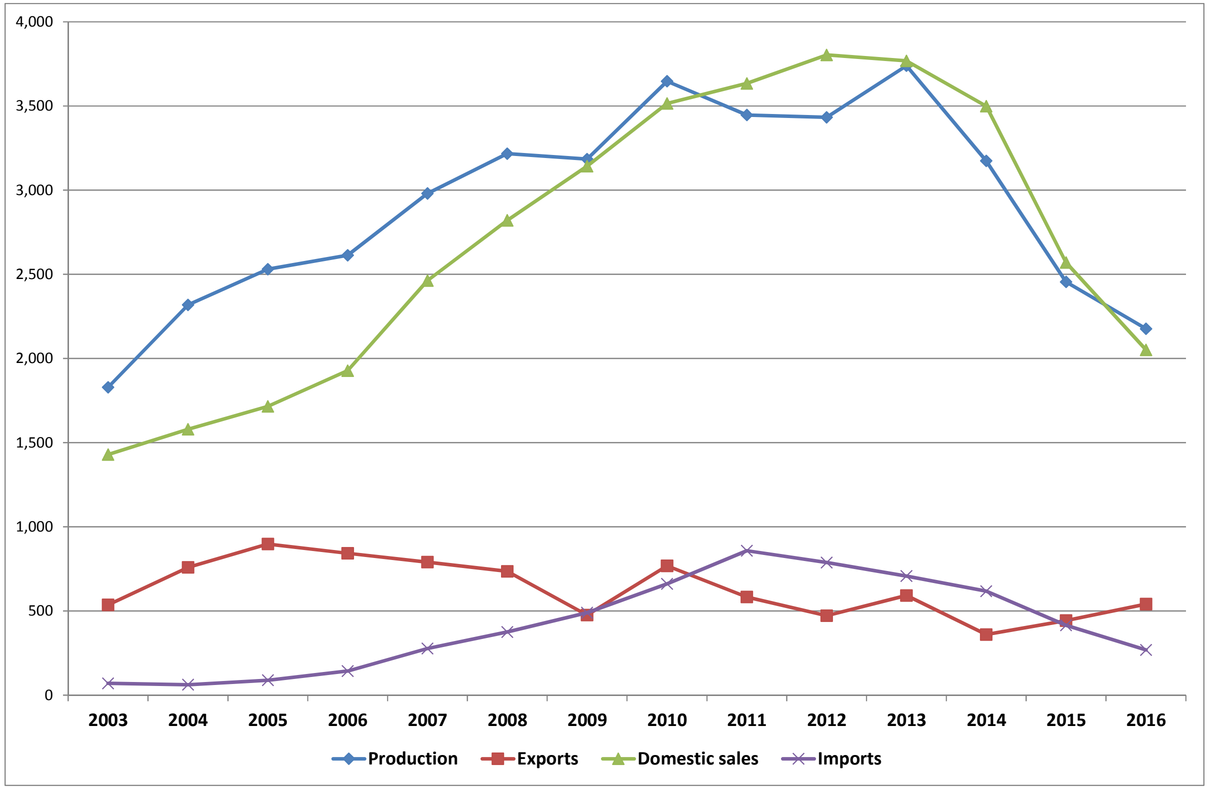
Source: Prepared by the authors based on data by OICA.

Vehicle sales in main consumer markets (in thousands of units and %)

	2000	2000 (%)	2010	2010 (%)	2014	2014 (%)	2015	2015 (%)	Growth rate 2000-2015 (%)	Contribution rate of growth 2000-2015 (%)
China	2,089	3.6	18,042	24.1	23,499	26.7	24,598	27.4	1,077.5	72.0
USA	17,402	29.8	11,772	15.7	16,523	18.8	17,471	18.4	0.4	0.2
Japan	5,963	10.2	4,956	6.6	5,562	6.3	5,046	5.6	-15.4	-2.9
Germany	3,693	6.3	3,198	4.3	3,356	3.8	3,540	3.9	-4.1	-0.5
India	859	1.5	3,039	4.1	3,176	3.6	3,425	3.8	298.7	8.2
United Kingdom	2,520	4.3	2,291	3.1	2,843	3.2	3,061	3.4	21.5	1.7
Brazil	1,489	2.5	3,515	4.7	3,498	4.0	2,569	2.9	72.5	3.5
France	2,611	4.5	2,709	3.6	2,210	2.5	2,345	2.6	-10.2	-0.9
Canada	1,586	2.7	1,580	2.1	1,889	2.1	1,940	2.2	22.3	1.1
South Korea	1,430	2.4	1,511	2.0	1,661	1.9	1,834	2.0	28.3	1.3
Italy	2,701	4.6	2,166	2.9	1,492	1.7	1,725	1.9	-36.1	-3.1
Mexico	889	1.5	847	1.1	1,135	1.3	1,352	1.5	52.1	1.5
Australia	787	1.3	1,036	1.4	1,113	1.3	1,155	1.3	46.8	1.2
Subtotal	44,019	75.4	56,662	75.5	67,957	77.3	70,061	78.1	59.2	83.3
Total	**58,400**	100.0	**75,005**	100.0	**87,920**	100.0	**89,677**	100.0	53.6	100.0

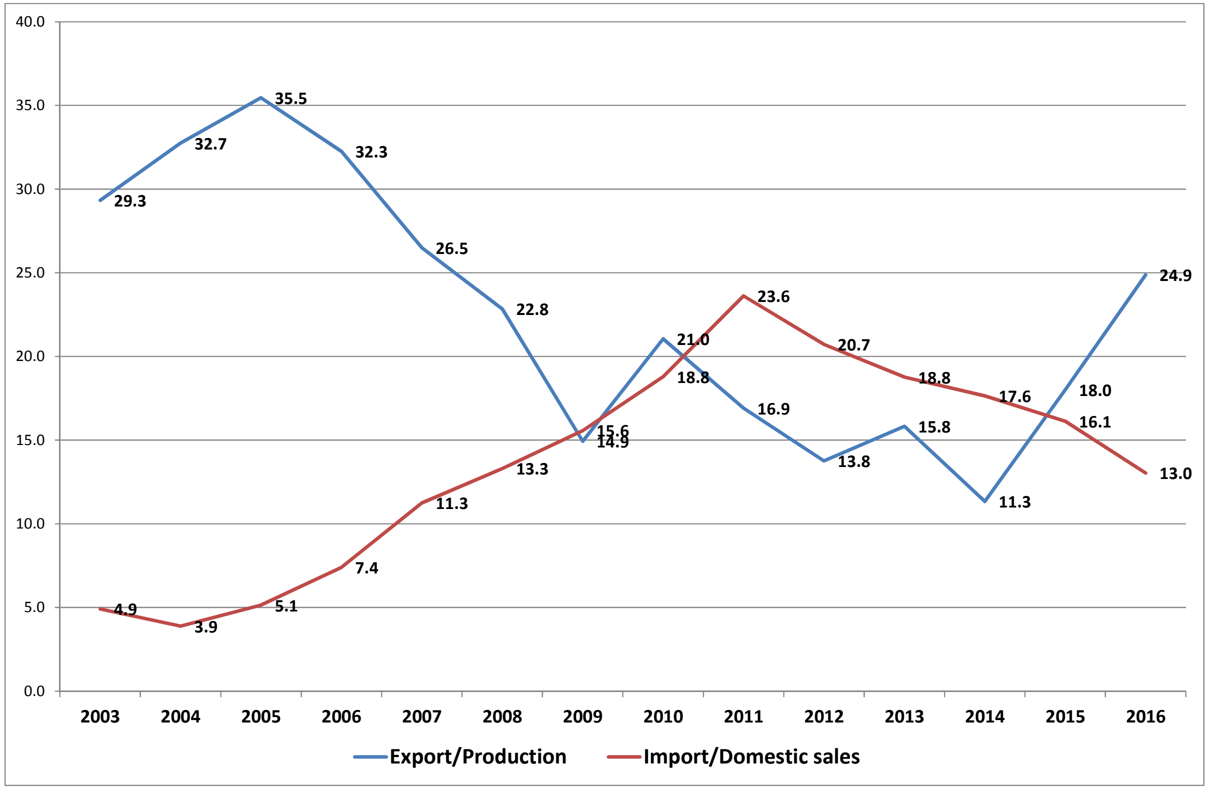
Source: Prepared by the authors based on data by OICA.

Total vehicle production, sales, exports and imports, Brazil, 2003-2016 (thousands of units)



Source: Prepared by the authors based on data by Anfavea (2017).

Export/production and import/sales ratios, Brazil, 2003-2016 (%)



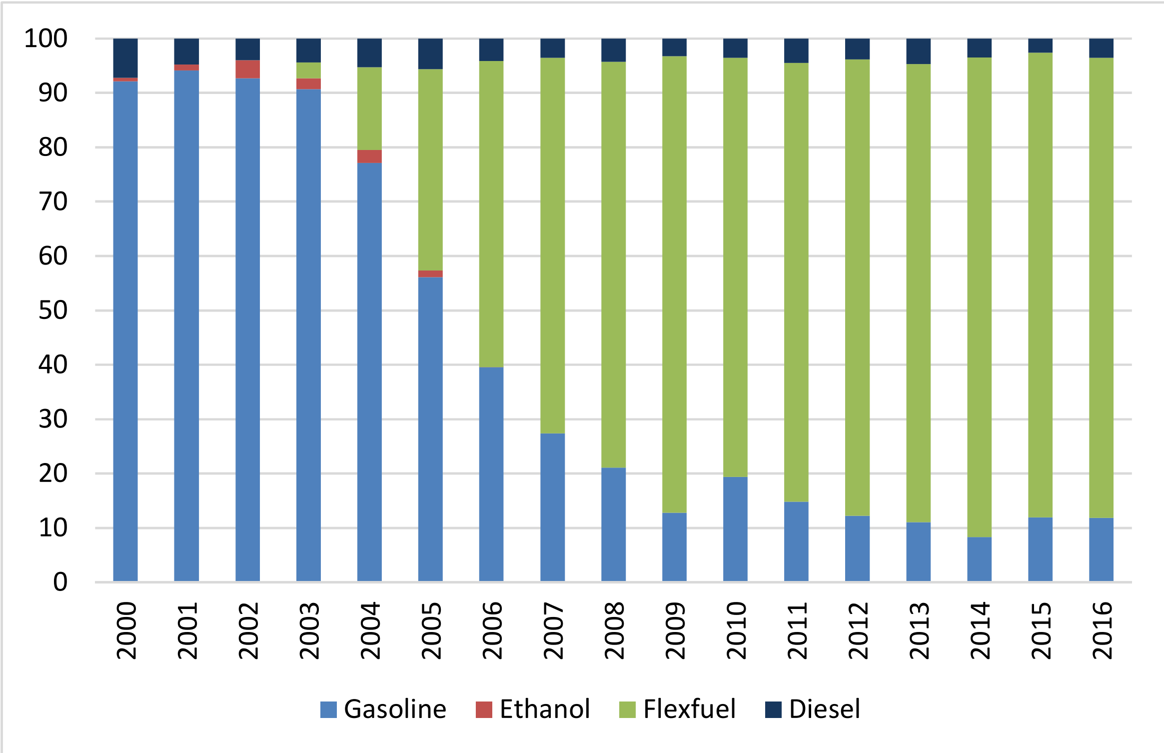
Source: Prepared by the authors based on data by Anfavea (2017).

Public policies and the sector’s dynamics

- Multiple dimensions of public policies (affecting sector’s dynamics):

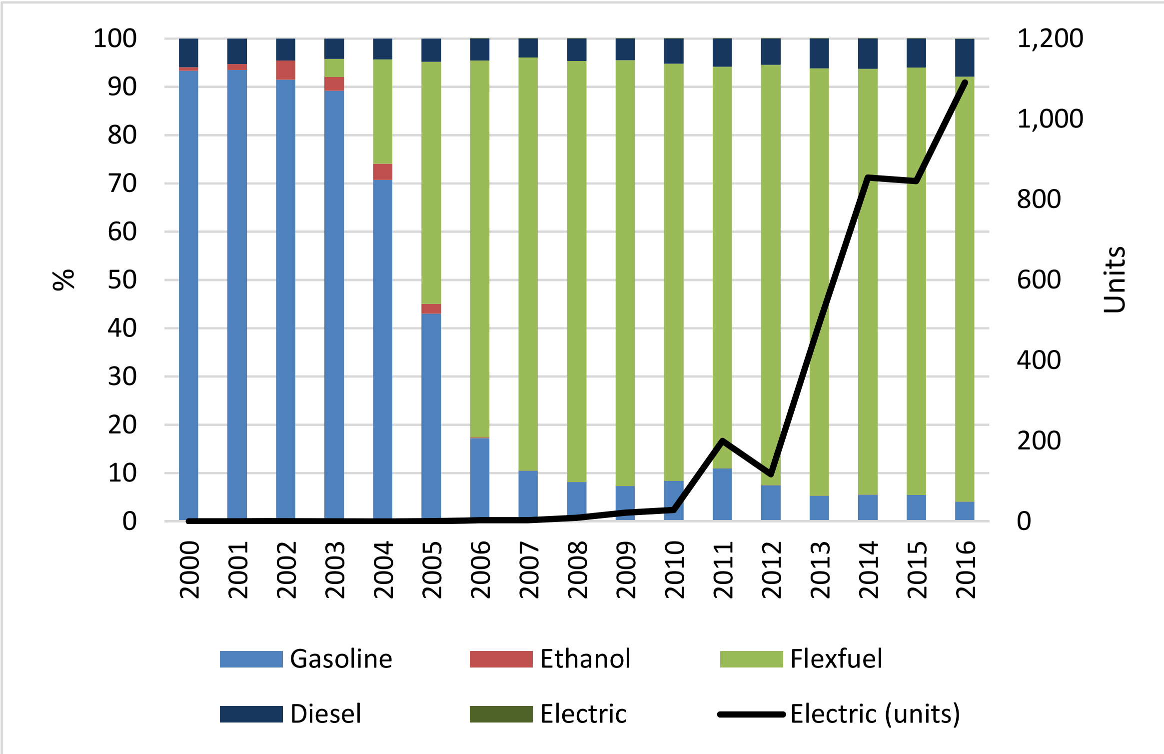
- Regulation and regional market dynamics
- Development of technologies (e.g. flexfuel)
- Financing support from BNDES
- Responses in face of the global economic crisis -> renewed fiscal incentives and “Inovar-Auto” program (2013-2017)
- No fiscal incentives to electric vehicles -> changes with ‘Route 2030’? (safety, EE and R&D)
- Labor reform, employment and trade unions

Production of cars and light commercial vehicles by fuel type in Brazil (%)



Source: Anfavea (2017).

Sales of cars and light commercial vehicles by fuel type in Brazil (%)



Source: Anfavea (2017).

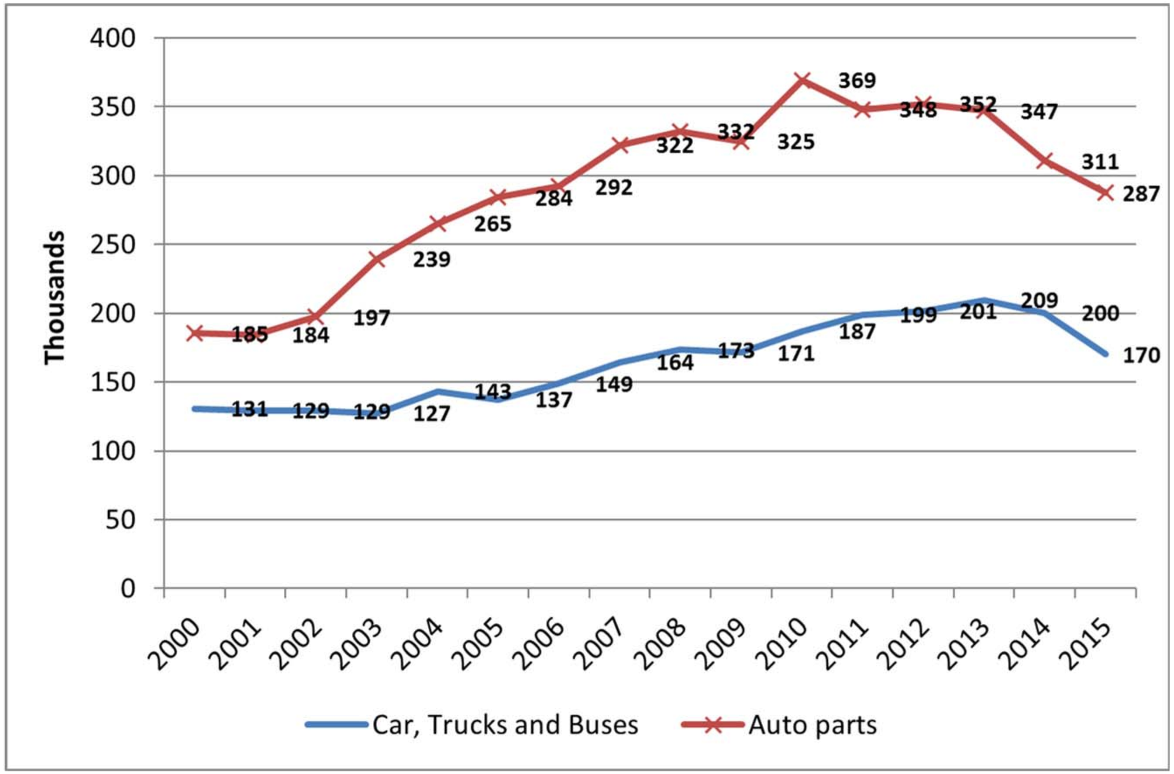
Public policies and the sector’s dynamics

- Production and sales of light vehicles in Brazil ‘locked in’ flexfuel technology

- Low share of hybrid and electric vehicles (less than 0.1%) but rising sales worldwide-> price, income, battery and infrastructure issues

- EV advance in the world poses challenges to the Brazilian auto industry:
  - Market leaders in Brazil (Fiat, GM and VW) with no project to produce/develop EV technology in the country (only R&D adaptation centers)
  - Brazil as a large market in the corporate results especially for companies not at the forefront of new technologies
  - Different EV technology options -> (ethanol adapted) hybrid and bioethanol fuel cell engine could be an opportunity -> but limited to Brazil or regional market?

Employment in the auto sector (thousands of employees)



Source: Prepared by the authors based on data by Brazilian National Accounts, IBGE.

Concluding remarks

- Scenarios for the Brazilian automotive industry (in terms of domestic output, employment and technological upgrading) depend on:
  - Pace of diffusion of new technological changes X Degree of coordination among key actors of the automotive chain in the country

(in which public policies play an important multidimensional role)

  - Fast diffusion with passive strategy -> rapid deterioration
  - Slow diffusion with active strategy -> industry’s repositioning in GSCs

Thank you!

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