ASEAN Automotive Outlook:

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Challenges in Today's Automotive Industry

Today's automotive industry is changing rapidly. There are a constantly new challenges in an increasingly dynamic environment. How will your organization respond?

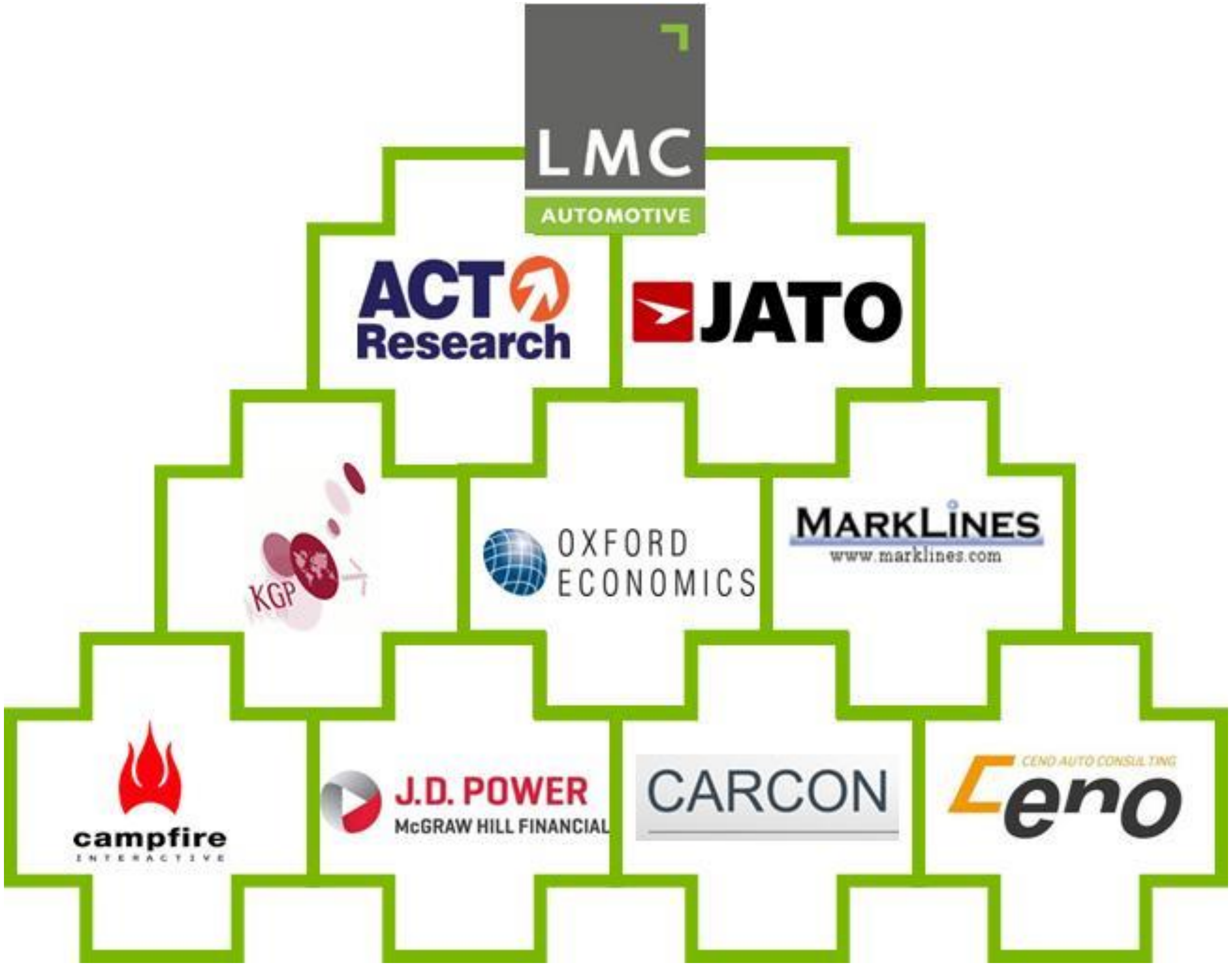
- Global platform proliferation presents greater volume opportunity, but more models drive complexity
- Accelerated lifecycle changes and launch activity
- Increasing regulatory pressures on emissions and fuel economy
- Game-changing technologies in autonomous driving and mobility options
- OEMs looking to suppliers to drive ongoing innovation
- Suppliers face capacity constraints in mature markets, but volume volatility in emerging regions

Global presence with regional expertise

Through key strategic hubs, LMC Automotive coordinates is analysts and sales staff who operate throughout the world.

Alliances and Partners

Specialist partners across a broad spectrum of automotive disciplines enables us to provide an unrivalled scope and depth of analysis.



A broad portfolio of offerings

Our product portfolio offers comprehensive coverage across the industry and global markets, but with the flexibility to suit your needs.

More than 30 Global and Regional Services

- Production, Sales and Powertrain forecasts for all Passenger Cars, as well as Light and Heavy Commercial Vehicles

Four Global Automotive Conferences

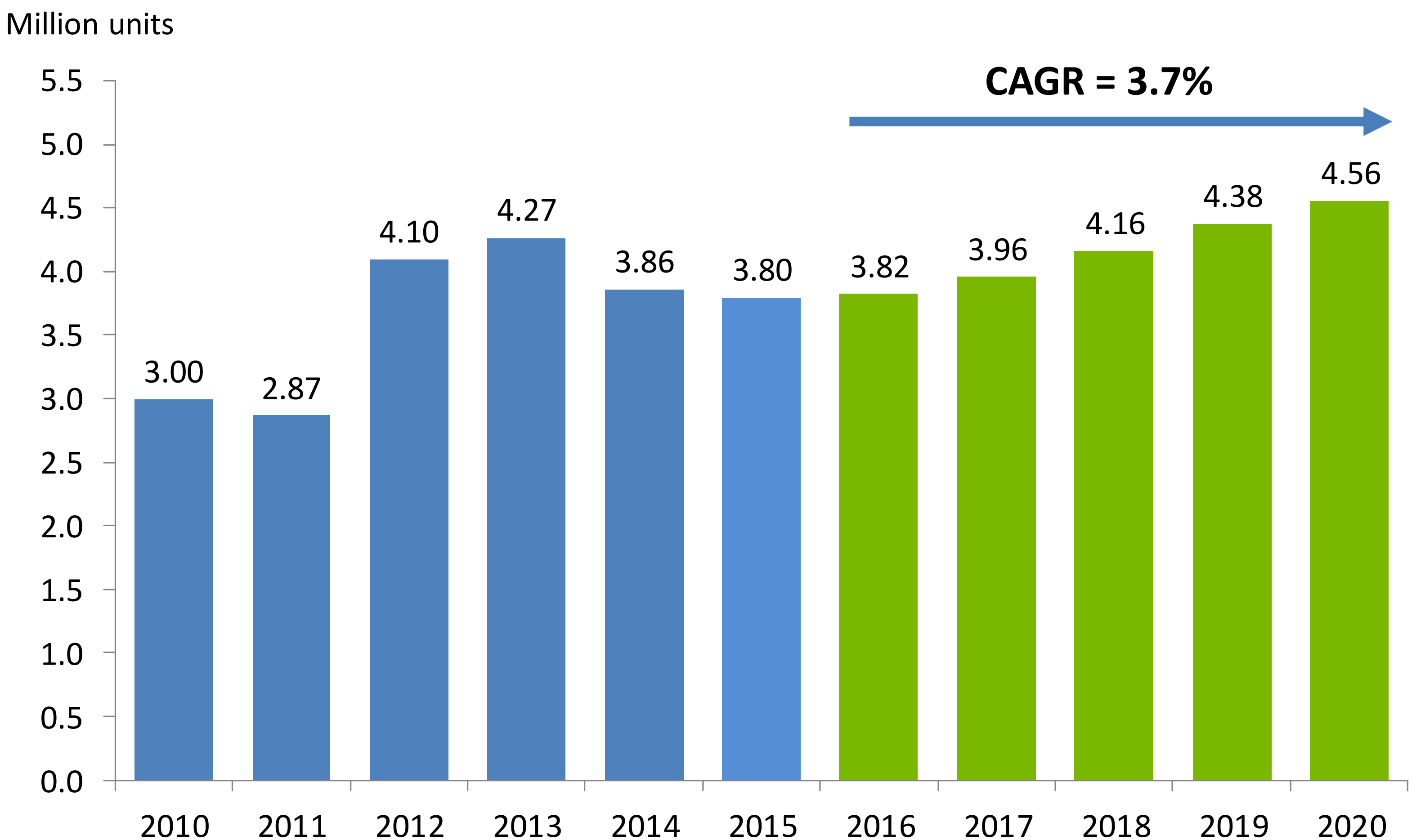
- *May - Light Vehicle Seminar – Frankfurt, London*
- *October – Automotive Industry Conference – Michigan, USA*
- *October – Asia Pacific Outlook Conference – China, Japan*
- *November – Global Industry Truck Seminar – London, UK*

Nine Global Client Webinars. Free registration - > www.lmc-auto.com

Outline

- Light vehicle production - Current situation
- ASEAN 5 Production outlook
- Key Challenges:
  - ASEAN production
  - Thailand
  - Impact of BREXIT
- Our view on EVs

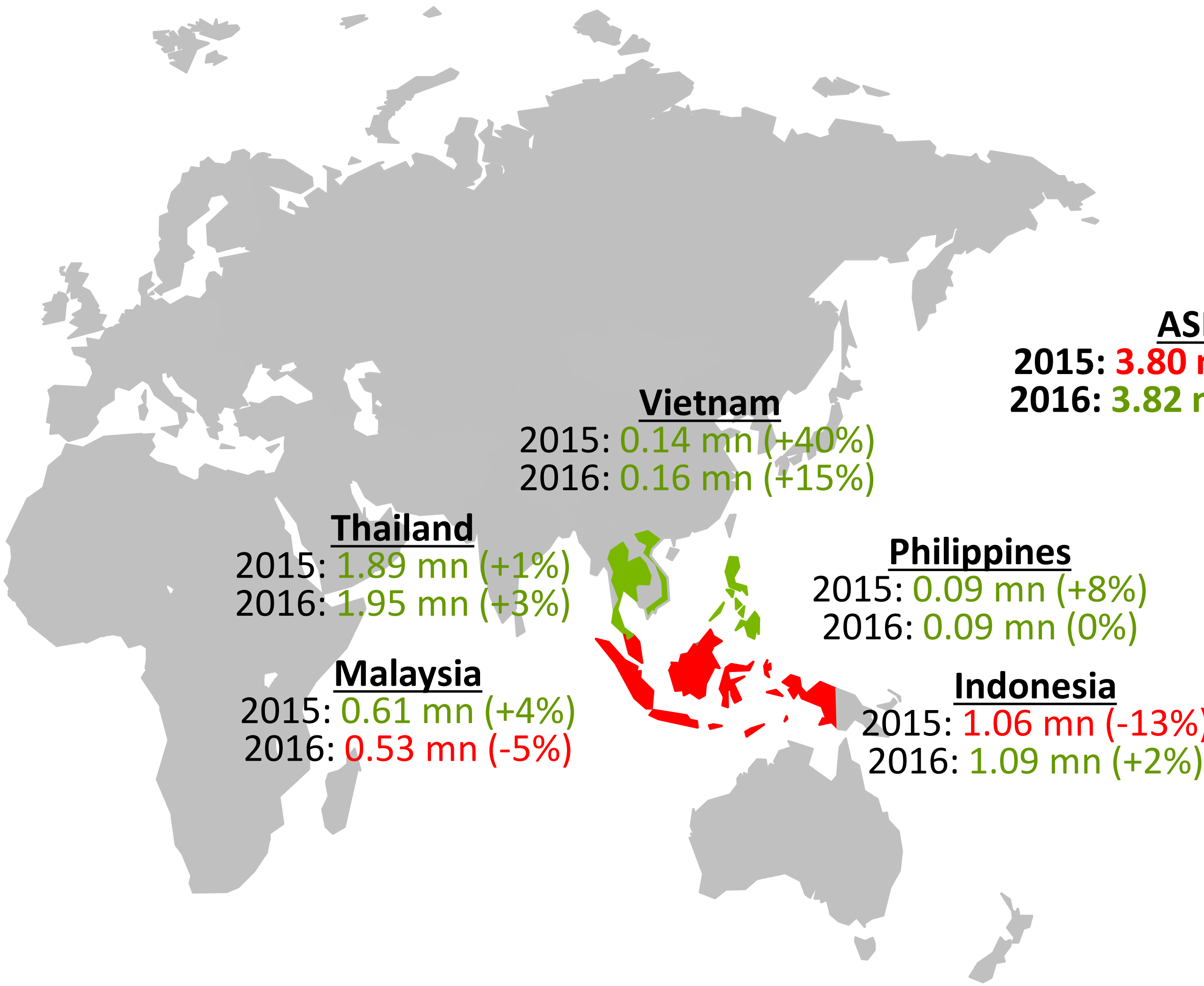
ASEAN 5 production outlook



Source: LMC Automotive

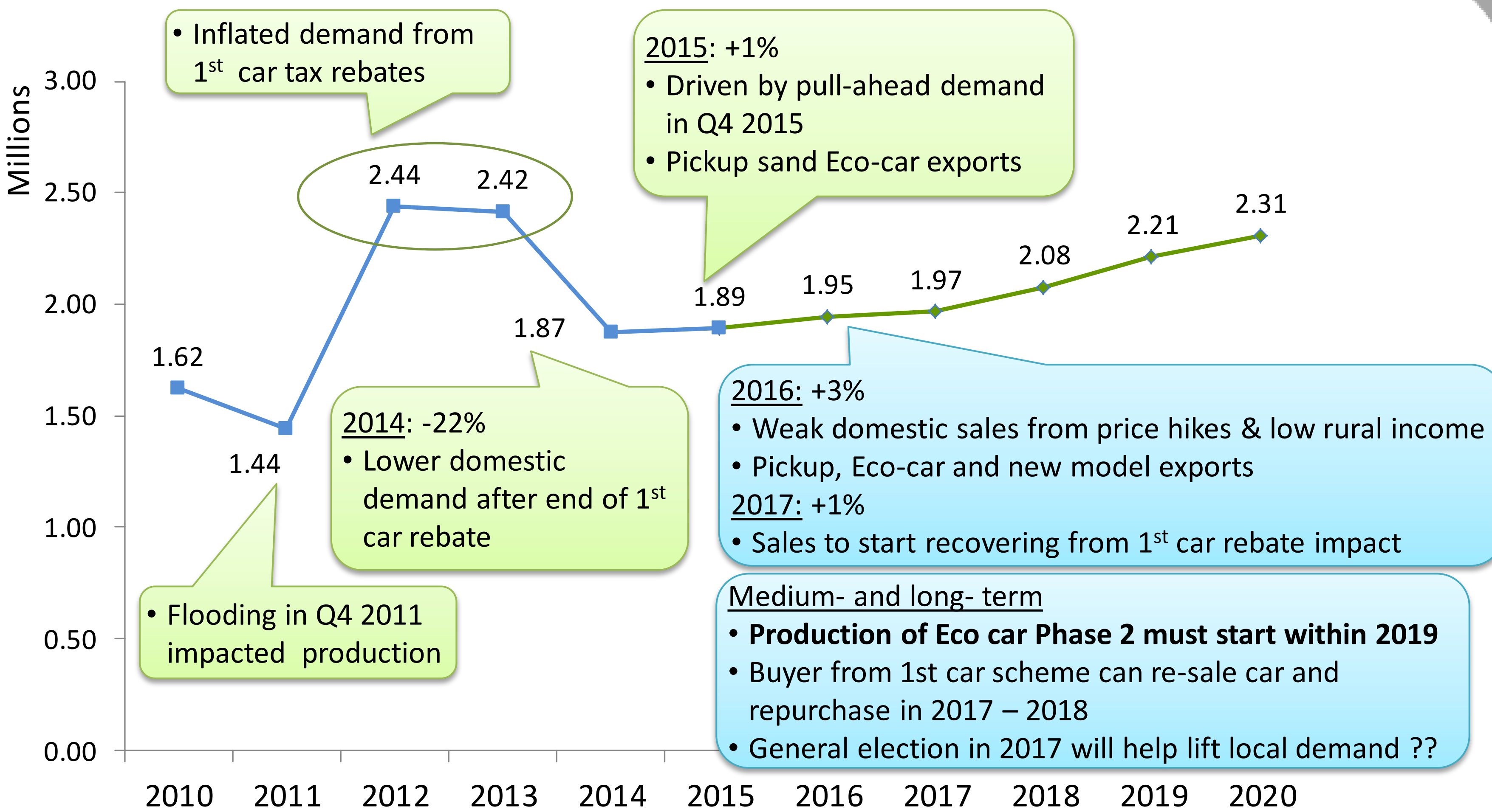
ASEAN Production by country

ASEAN
2015: 3.80 mn (-2% YoY)
2016: 3.82 mn (+1% YoY)



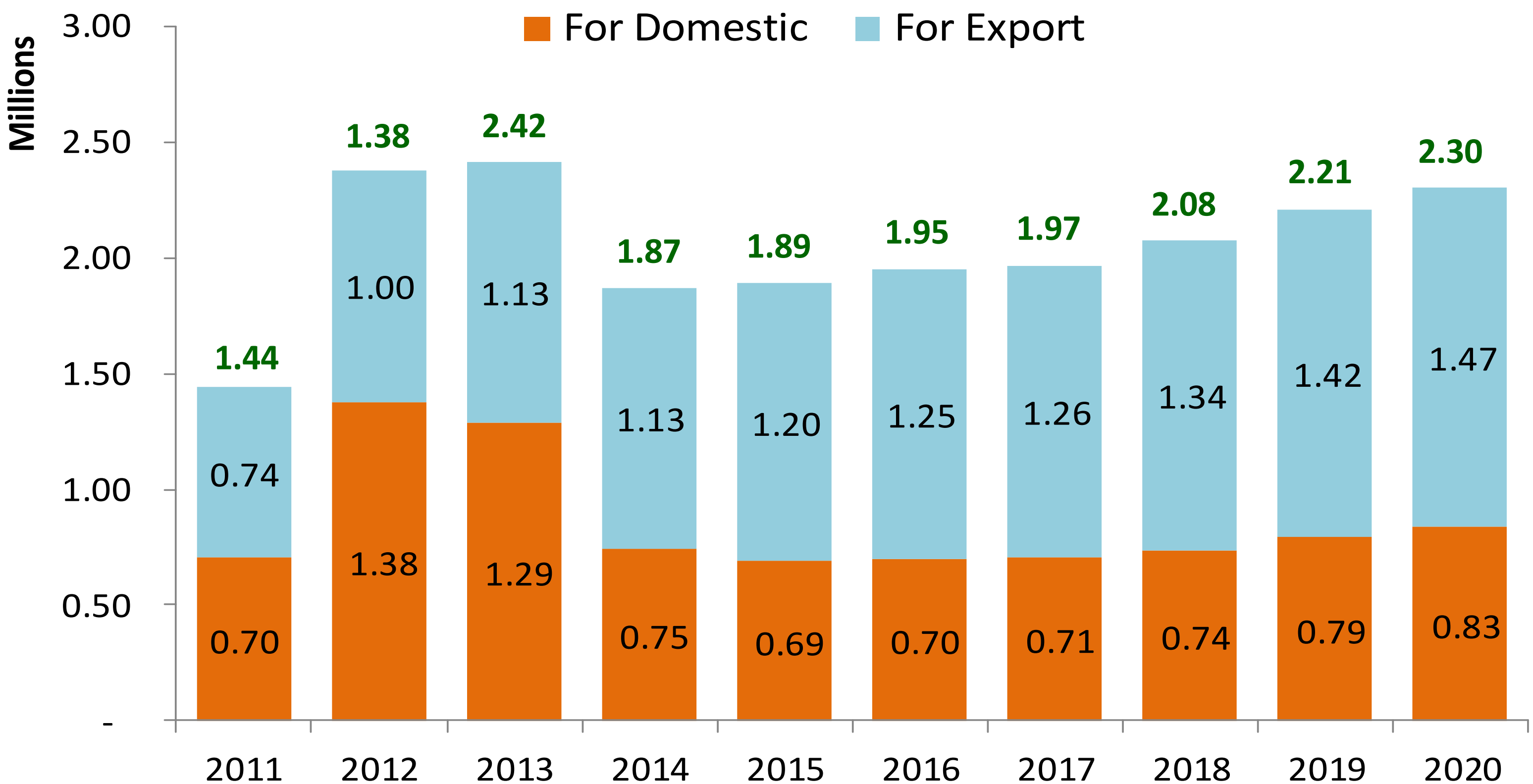
Remark : Thailand and Indonesia production are around 80% of regional production.

Thai production outlook



Source: LMC Automotive

Export offset weak domestic market



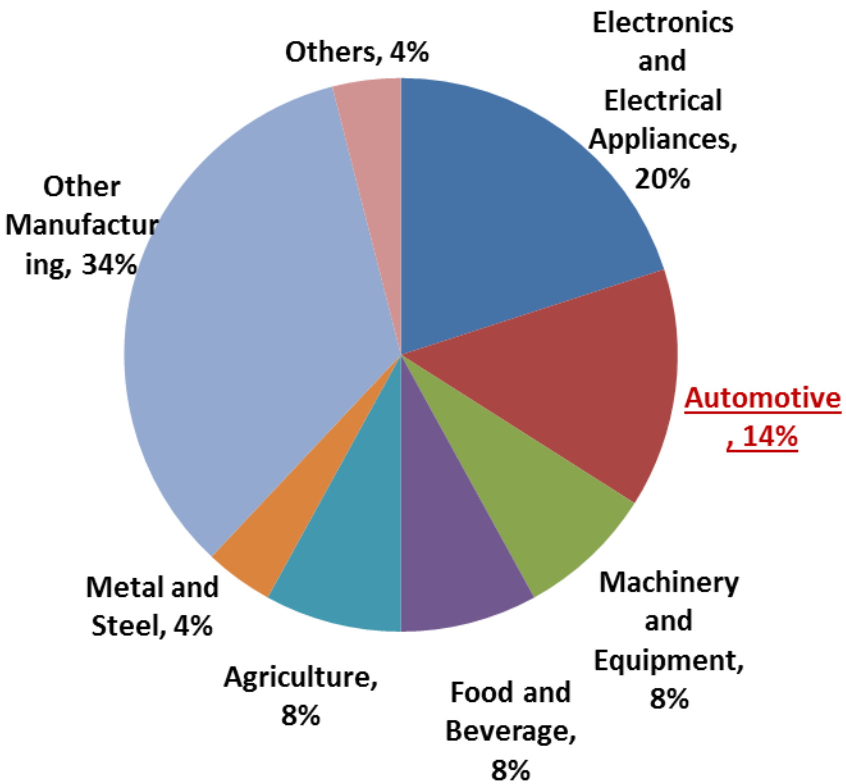
- Export is the main growth driver; Pickup, Eco-car and new models
- Weak global economy; China slow down and Middle East in particular
- **Super Cluster policy aims to enhance industry R&D and technologies**

Source: LMC Automotive

Automotive: Top Thailand's export sector …

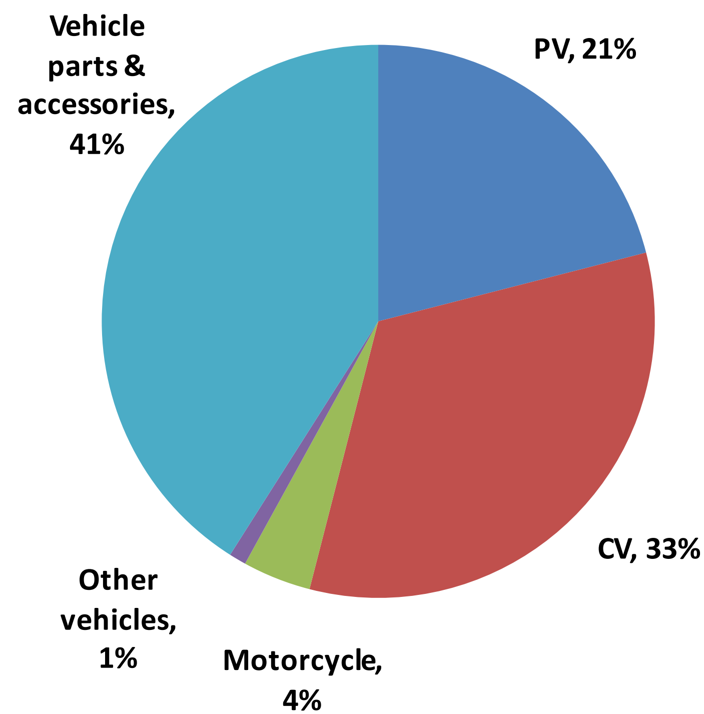
2014 Thailand Exports by Sector

USD 227,523 mn



2014 Automotive Sector Exports

USD 31,623 mn

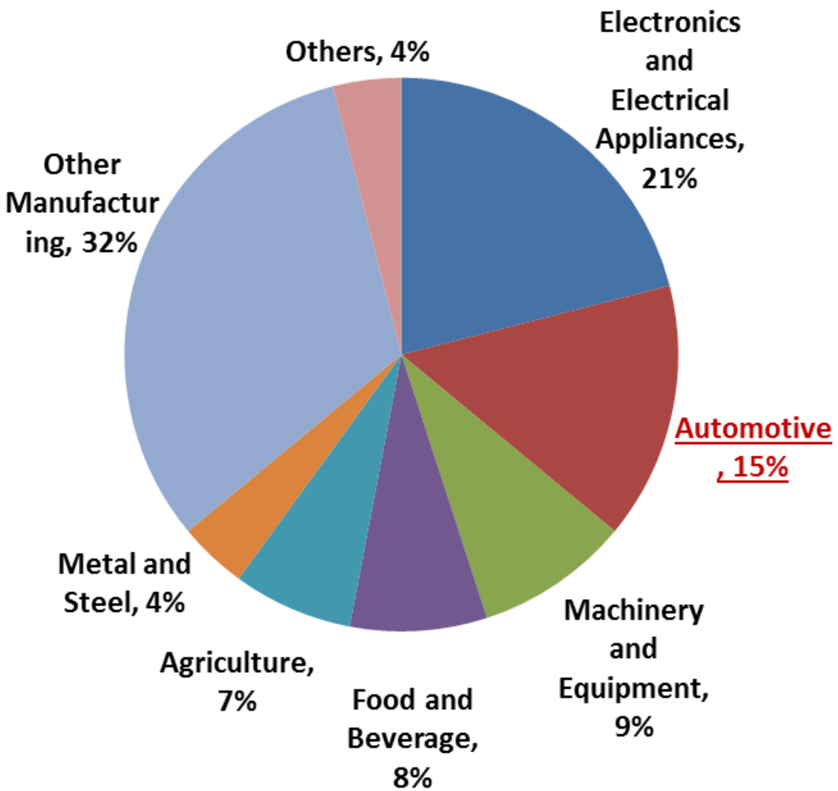


Source: Bank of Thailand

… and growing

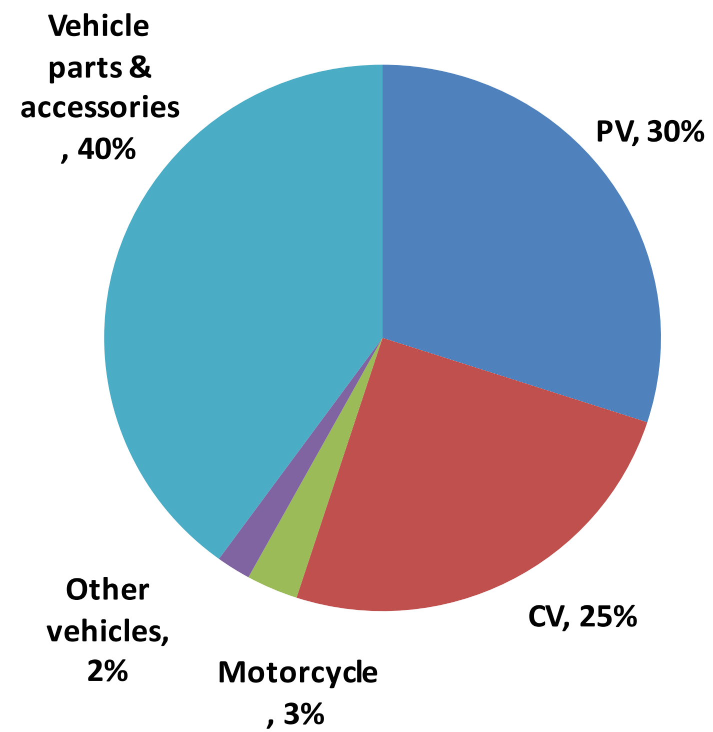
2015 Thailand Exports by Sector

USD 214,375 mn



2015 Automotive Sector Exports

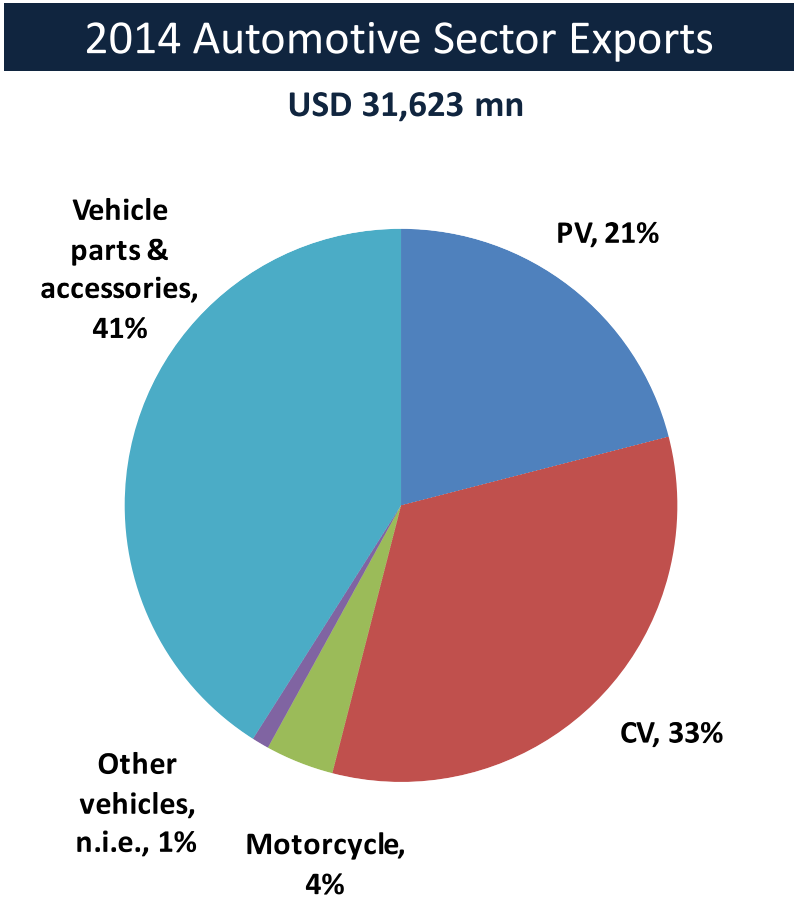
USD 32,423 mn

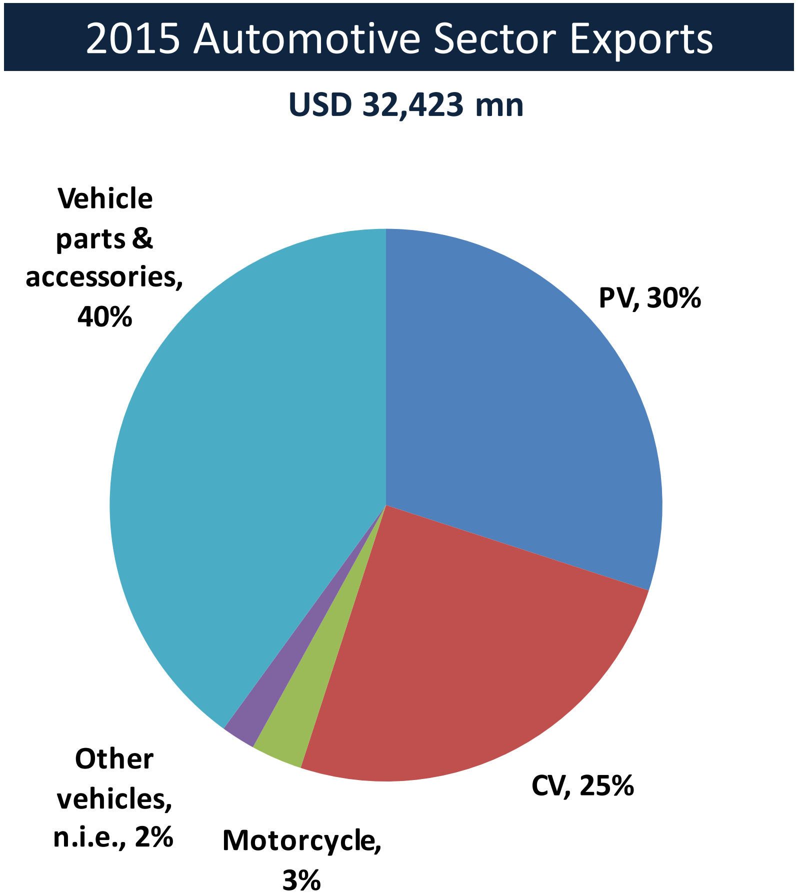


Source: Bank of Thailand

Pickup weakening, PV gaining

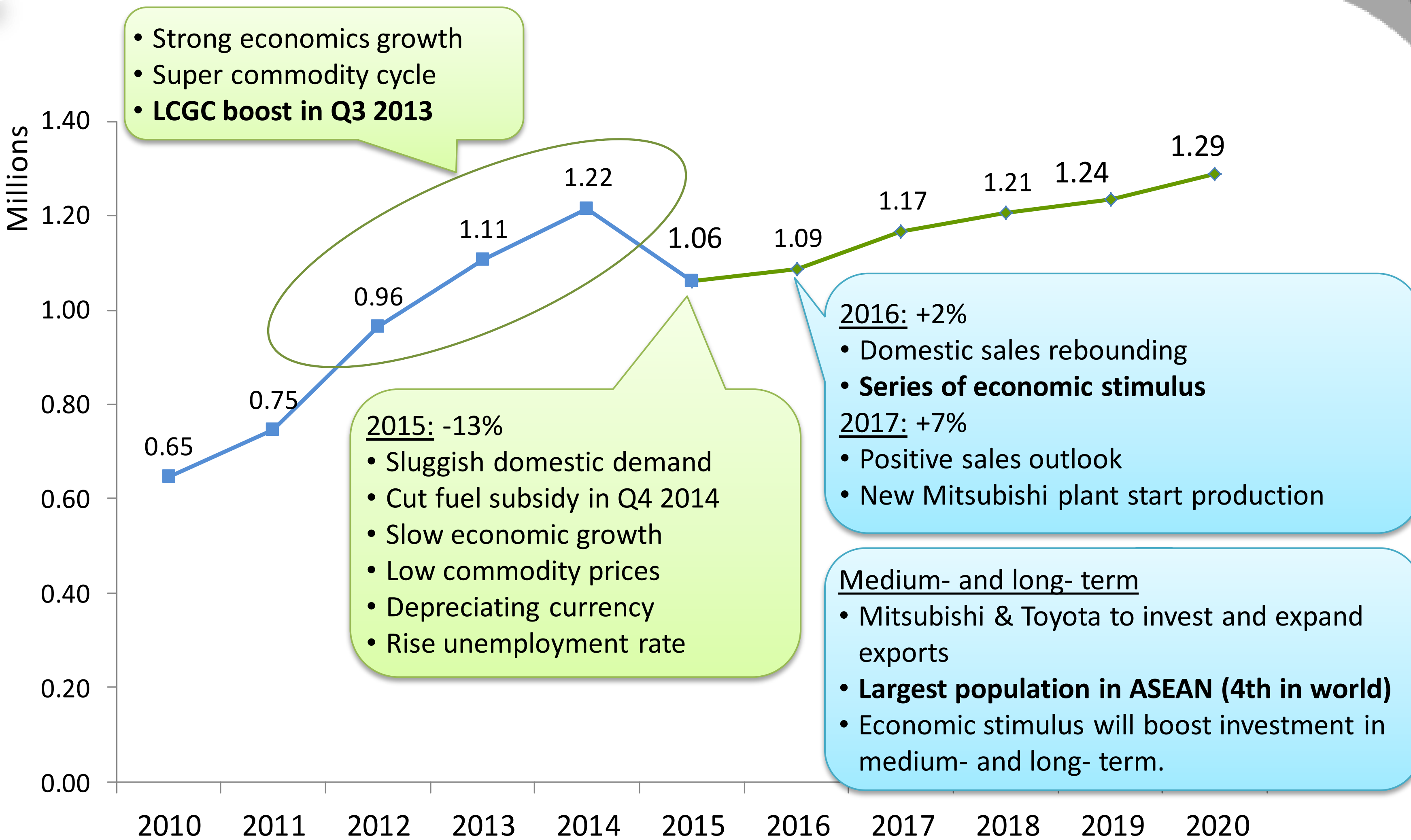
Eco car gaining in 2015, SUV 2016





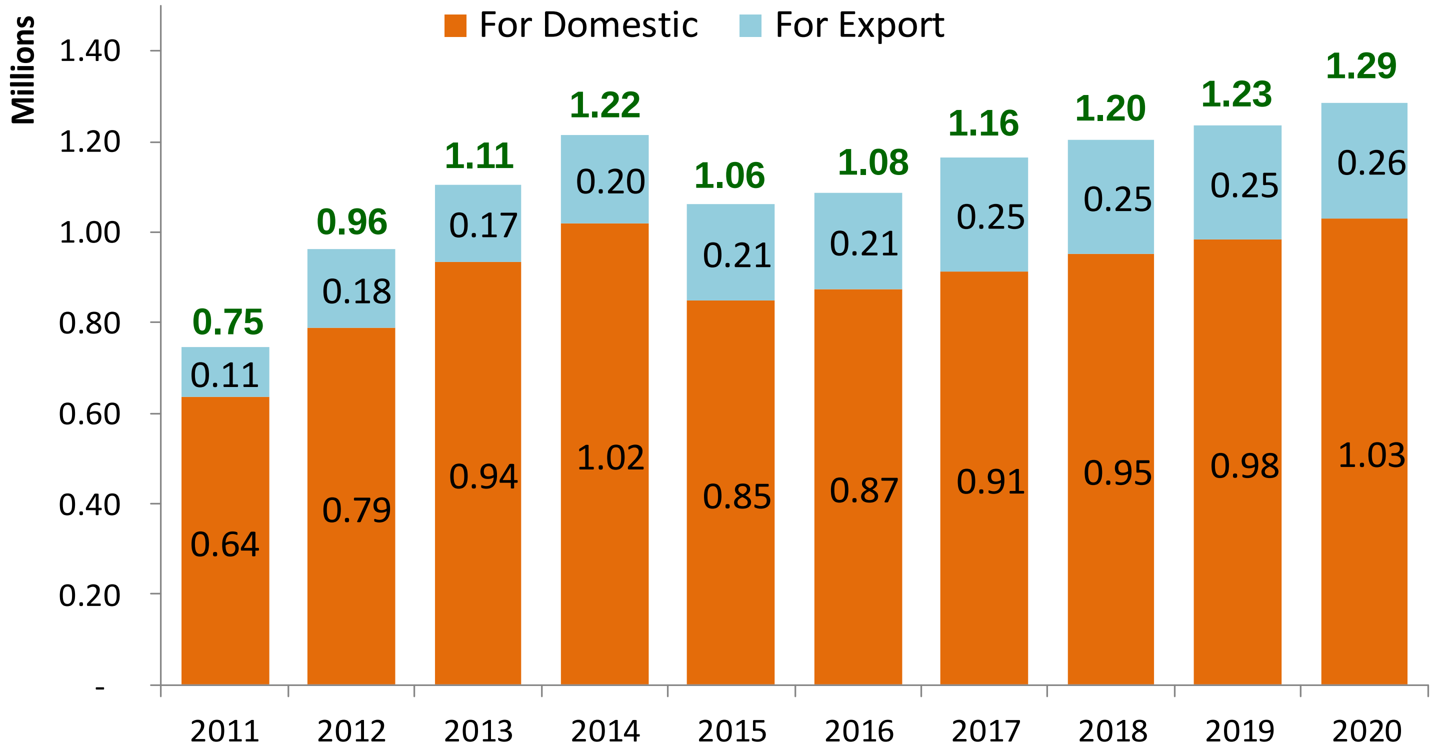
Source: Bank of Thailand

Indonesia Production outlook



Source: LMC Automotive

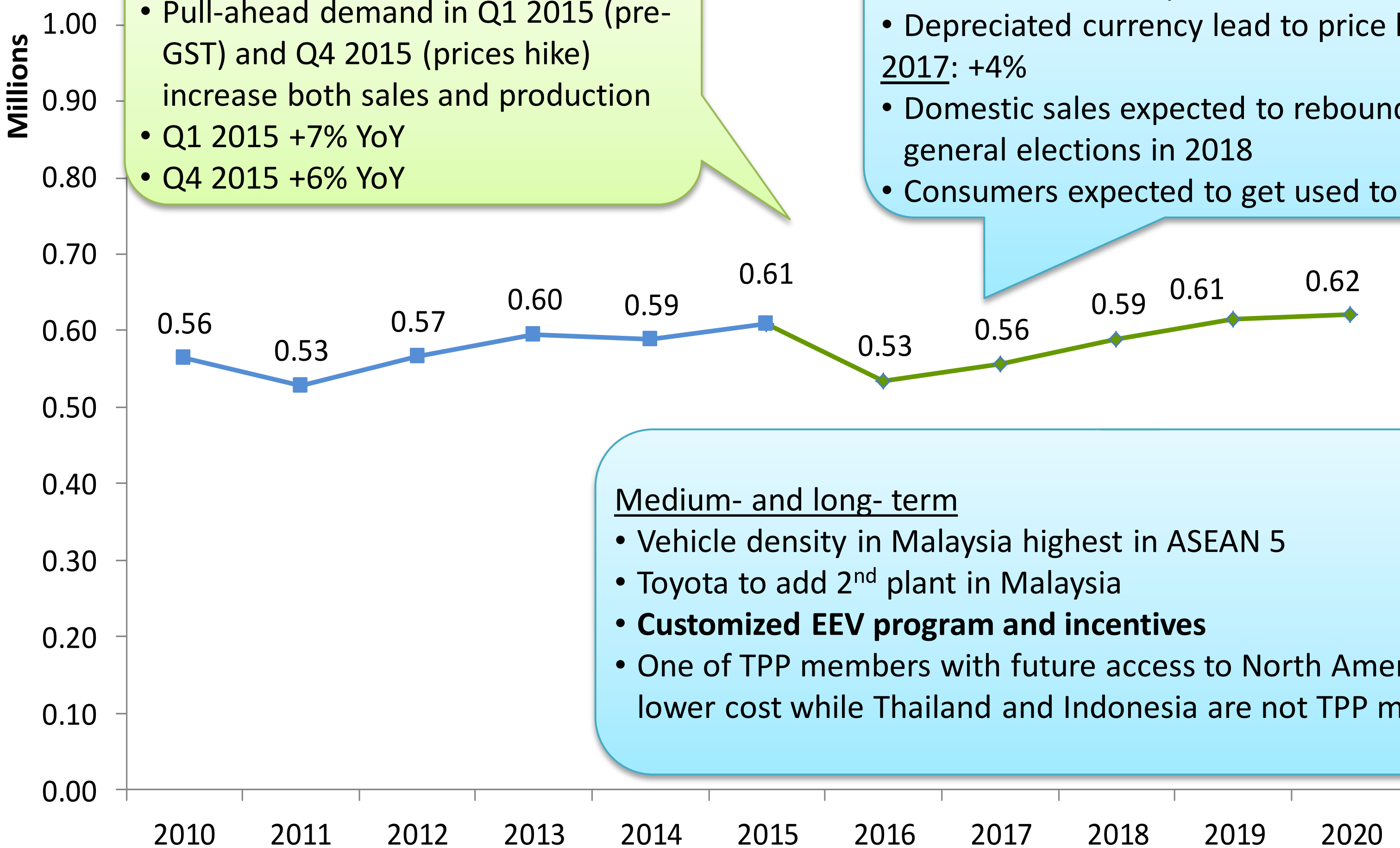
Indonesia production: Expanding capacity



- Production relies on domestic demand.
- **LCGC models create new demand**
- **Reducing taxes for sedans aim to boost demand and production for export (still at proposal stage)**
- New Mitsubishi plant will start production in 2017
- Toyota plans new investment; to be online in 2020

Source: LMC Automotive

Malaysia production outlook: Flexible policy



2015: +4%
- Pull-ahead demand in Q1 2015 (pre-GST) and Q4 2015 (prices hike) increase both sales and production
- Q1 2015 +7% YoY
- Q4 2015 +6% YoY

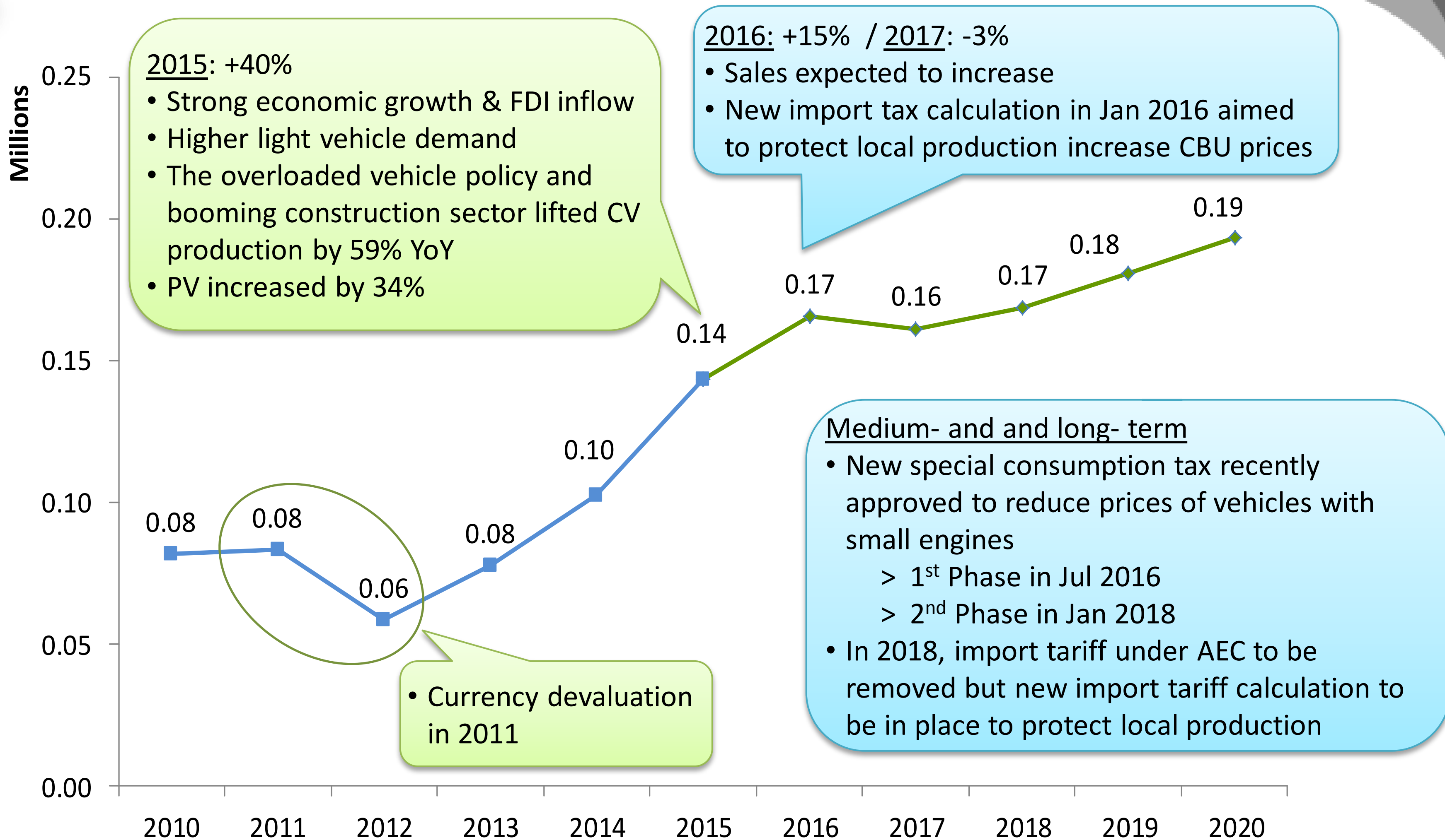
2016: -12%
- Weak sales due to pull ahead demand
- Depreciated currency lead to price hike in Jan

2017: +4%
- Domestic sales expected to rebound ahead of general elections in 2018
- Consumers expected to get used to GST

Medium- and long- term
- Vehicle density in Malaysia highest in ASEAN 5
- Toyota to add 2nd plant in Malaysia
- **Customized EEV program and incentives**
- One of TPP members with future access to North America at lower cost while Thailand and Indonesia are not TPP members

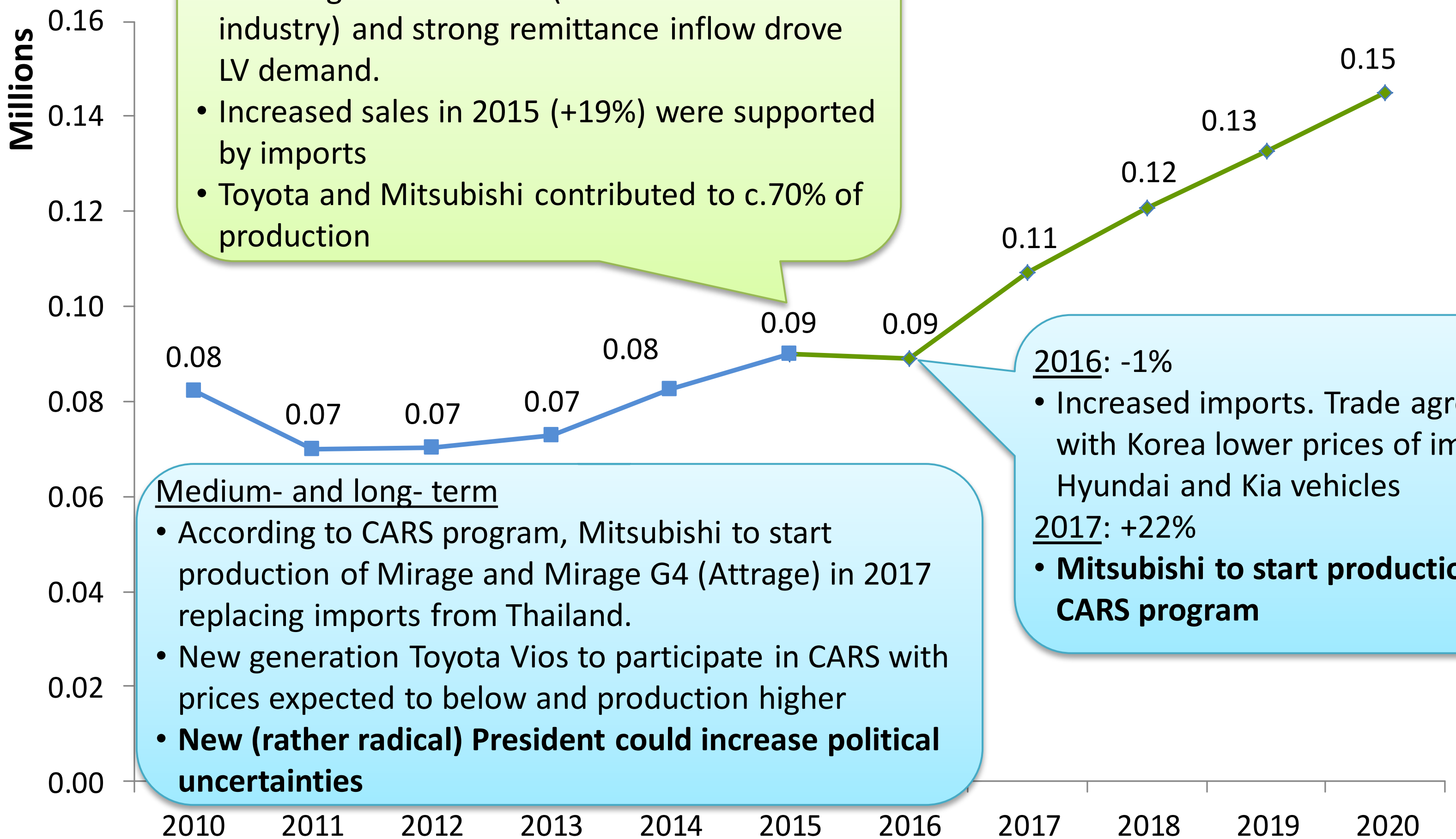
Source: LMC Automotive

Vietnam production outlook: Tax policy changes



Source: LMC Automotive

Philippine production outlook: CARS program



2015: +8%

- Booming service sector (labor- intensive industry) and strong remittance inflow drove LV demand.
- Increased sales in 2015 (+19%) were supported by imports
- Toyota and Mitsubishi contributed to c.70% of production

2016: -1%

- Increased imports. Trade agreements with Korea lower prices of imported Hyundai and Kia vehicles

2017: +22%

- **Mitsubishi to start production under CARS program**

Medium- and long- term

- According to CARS program, Mitsubishi to start production of Mirage and Mirage G4 (Attrage) in 2017 replacing imports from Thailand.
- New generation Toyota Vios to participate in CARS with prices expected to below and production higher
- **New (rather radical) President could increase political uncertainties**

Source: LMC Automotive

Key factors: ASEAN production

	Detail
Thailand	• Eco-car program phase 2 faces challenges from policy of neighboring countries • Government policies aims to increase automotive R&D and technologies e.g. super cluster policy and proving ground project
Indonesia	• LCGC program likely to limit to domestic market with limited export • Proposal to revise luxury tax for Sedans (30% - 70% vs. 10% for MPV/SUV/Hatchback) • Mitsubishi and Toyota to expand plant capacity aimed at boosting export rather than domestic demand
Malaysia	• Government focuses on EV and Hybrid technology. • The Energy Efficient Vehicles (EEV) program is flexible and can be customized based on automaker's proposal. Perodua Axia, Honda Jazz, Mercedes-Benz S400L Hybrid and E300 BlueTec Hybrid get (varying) incentives under this program • One of TPP members
Vietnam	• New import calculation effective Jan 2016 have increased CBU prices • New special consumption tax will reduce prices of vehicles with small engines making entry models more affordable to first-time buyers
Philippines	• Only Toyota Vios, Mitsubishi Mirage and Mirage G4 (Attrage) participate in the Comprehensive Automotive Resurgence Strategy (CARS). • Vios is locally-produced model while Mitsubishi models will start production in 2017 instead of being imported from Thailand • Production of both OEMs likely to serve domestic demand with limited or no export

Key factors: Focusing on major three

	Detail

Thailand	• **Eco-car program phase 2 faces challenges from policy of neighboring countries**
	  ○ Minimum production volume requirements
	  ○ Export plans a must for success
	  ○ Volume target plans in conflict with model lifecycle
	  ○ Required investment in engine parts

Indonesia	• **Tax policy favorable for MPV/SUV/Hatchback (against high tax for Sedan)**
	• **LCGC program mainly serves the domestic market with limited export**
	  ○ 80% local content now and 100% in 2019
	  ○ Gasoline engine ≤ 1200 cc / Diesel engine ≤ 1500 cc
	  ○ Price less than IDR 100 mn which is low; not many export destinations

Malaysia	• **The Energy Efficient Vehicles (EEV) program is flexible and can be customized based on automaker's proposal**
	  ○ Automaker can negotiate with government
	  ○ The set of CO_2 and Fuel consumption depend on the engine size
	  ○ High trade barrier of import CBU Hybrid and EVs vehicle
	  ○ Develop what automaker have

Thailand: Key challenges

- **Maturing domestic market with relatively high vehicle density**
- **Rising labour costs and lack of skilled labour**
- **Post-eco car: what's next?**

  - Good in terms of volume but value and technology?
- **Auto sector is a key industry for all countries in ASEAN. They are competing rather than cooperating.**
- **Not a TPP member meaning less access to North America**
- **Japan: future policy direction focusing on fuel cell as an energy source including for the auto sector. Implication for industry development in Thailand?**

Thailand competitiveness vs. other ASEAN

Advantages	▪ Geographic advantage ▪ Strong supplier base ▪ Long industry experience/expertise ▪ Larger production scale (could be under threat) ▪ Good infrastructure

Threats	▪ Competing policy of neighboring countries
	▪ Demographics: Declining working-age population
	▪ Critical for sector (and Thailand) to move up value & technology chain
	▪ **Indonesia:** Large population and low vehicle density
	    ○ Emerging destination for new investments
	    ○ Increasing SUV export (following purchasing trend)

Overview

- The United Kingdom's European Union membership referendum has resulted in a vote to leave the EU, with 52% of the voting for "BREXIT"
- A two-year negotiation period between the UK and the European Council (EC) after the Article 50 is triggered; WTO norms with tariffs applied from two years
- UK possibly facing a recession / Impact on non-UK Europe unclear at this point though impact likely to be much less compared to that on the UK

LV Production

- Impact on vehicle production in the UK could be substantial
- UK exports almost 80% of car production, over half of which go to the EU
- Almost half of all components used in UK-built new cars are imported from the EU
- UK uses EU supply base for capital goods, finished components and skilled labour

LV Sales

- UK imports almost 90% of its new LVs of which 80% are from the EU (excluding UK)

Full detail: http://www.lmc-auto.com/news-events/2016-news-releases/

Electric vehicles

Government subsidies are needed to motivate automakers (development) and consumers (purchase)

Japan

MAKER	MODEL	Subsidy Yen	Original Price Yen	Percent %
Honda	Fit EV	850,000	3,809,524	22%
Nissan	e-NV200	850,000	3,776,000	23%
Tesla	S model	850,000	8,064,815	11%
Mitsubishi	i-MiEV	710,000	2,628,000	27%
Mitsubishi	Minicab-MiEV	530,000	2,269,000	23%
BMW	i3	400,000	4,620,370	9%
Mercedes	Smart for two	350,000	2,824,074	12%
Nissan	Leaf	270,000	2,466,000	11%
BMW	i8	850,000	18,203,704	5%
Mercedes	S550 Plug-in	850,000	15,018,519	6%
BMW	i3 Plug-in	750,000	5,055,556	15%
Honda	Accord Plug-in	410,000	4,761,905	9%
Mitsubishi	Outlander PHEV	290,000	3,399,000	9%
Toyota	Prius PHV	250,000	2,857,143	9%

China

- **Quotas for new car plates in Beijing was reduced to 150k in 2014-2017 from 240k in 2011-2013.**
- **Quotas for new car plates in Beijing:**

  2016: 90k for normal cars vs. 60k for EVs.

  2015: 120k for normal cars ns. 30k for EVs.

Electric vehicles

- **Fuel and energy policy: Bio-Diesel / Gasohol / CNG / EVs**
- **Waste and Recycle management**
- **Policy of neighboring country: Malaysia's EEV**

"Previous NAP's tax breaks for CBU hybrid cars have ended resulting price increases of imported hybrid cars"

"BAIC to begin EV production in Malaysia in September 2016"

"The locally-produce S400L Hybrid and E300 BlueTec Hybrid are exempted from import duty and excise tax as they qualify for the EEV"

Electric vehicles

Lack of suppliers for some crucial parts for EVs such as lithium battery, invertor and convertor.

EV sales in Thailand and ASEAN

COUNTRY	HYBRID/EV TYPE	2014	2015	2016F
Indonesia	FHEV	251	137	151
	MHEV	119	136	45
Indonesia Total		370	273	196
Malaysia	BEV	0	0	50
	FHEV	3,794	2,294	1,414
	MHEV	5,369	3,385	1,500
	PHEV	0	9	4
Malaysia Total		9,163	5,688	2,968
Thailand	FHEV	4,756	4,482	4,116
	MHEV	2,036	585	978
	PHEV	0	0	54
Thailand Total		6,792	5,067	5,148

Thank You