The Italian supply chain

Automotive components: uncertainty and optimism

by Lara Morandotti

Osservatorio sulla componentistica automotive italiana 2020, Anna Moretti e Francesco Zirpoli (a cura di), Edizioni ca' Foscari-Venezia 2020. In collaborazione con ANFIA, Camera di Commercio Industria Artigianato e Agricoltura di Torino, CAMI- Centre for Automotive & Mobility Innovation, Dipartimento di Management dell'Università Ca' Foscari di Venezia

A specific Observatory has analysed the Italian automotive supply chain in the light of 2020-crisis, with particular reference to component suppliers. Our thorough analysis has highlighted the electric motor and the future of this growing promising field

The 2020-edition of the Observatory on Italian automotive components, led by ANFIA, Italian Association of the Automotive Industry, has been called to face a challenge in the challenge: to shed light on the sudden complex transformations the national automotive supply chain is living and the unprecedented impact of pandemic on the whole Italian and world industry.

The period is difficult and Italian components should rely on conditions that can accompany their transformation efforts in a global strict interaction, which also witnesses the morphology change of the main players, like in the case of the rising Stellantis Group, with the opportunities and the repercussions it potentially involves. It is urgent a plan of structural strategic interventions to be accomplished in the frame of the European Recovery Plan, ideal occasion to help companies to support the necessary investments to face the incoming challenges. What action is instead up to companies? To have clear targets on which focusing in the matter of R&D and education of human resources, dimensional growth and correct ranking in terms of manufacturing capacity, strategies based on innovation and flexibility in meeting the requirements of vehicle manufacturers.

The three reasons for uncertainty

In 2019, the production of the national industry ended with -9.6% of the industrial production of the automotive industry, with -13.9% of cars compared to the previous year and -7.9% in terms of manufacturing of parts and accessories for vehicles and their motors. The data about the manufacturing and sale shrinkage are unavoidably mirrored in the evaluation of the economic-financial data of enterprises in the Italian supply chain. However, what should we expect for next months?

Anna Moretti and Francesco Zirpoli of CAMI – Management Department, Ca' Foscari University, Venice, have explained that there are at least three elements of uncertainty. The first, very contingent, concerns the recovery of vehicle demand and production in Europe and in the primary outlet markets of the Italian supply chain and, in their turn, they depend on the end of COVID-19 emergency and on how, and if, consumptions and purchases will recover.

The second uncertainty reason depends on the choices of Stellantis, the company stemming from the merging between PSA and FCA. Given manifold overlaps in EU among activities of design, manufacturing and component supply chain of the two historical automotive companies, there are some doubts about new European manufacturing balances.

The last reason concerns the policies to react to the crisis. The latter has shown the need of shortening the global supply chains to succeed in managing supplies with more reliability: this can turn into an opportunity especially for smaller-size Italian suppliers.

The world automotive industry

In 2019, 91.5 million vehicles were sold (-4.5% versus 2018), of which 3.7 millions in the Asian Continent.

Among the major markets, the following are affected by decreasing volumes

in 2019: United Kingdom (-2.4%) and Spain (-4.8%), while the markets of Germany (+5%), France (+1.9%) and Italy (+03%) are growing. EU13 of the new member Countries scores the 6.2% rise of sales and EFTA area achieves volumes in line with 2018-year's.

In 2019, the mix of motor market changes. They register the 13.9% drop in the sales of diesel cars, the 5% increase of petrol cars and the 41% rise of cars with alternative power supply, which weigh by 11.2% of the market.

Manufacturing companies had to change their strategic plans, the manufacturing mix by power supply and prearrange huge investments for the vehicle electrification. In the 1st semester, the demand for electrified cars in EU/EFTA/ UK is anyway growing (+61% ECV and 7.9% of share, +16% HEV and 10.1% of share), despite the strong market shrinkage (-39%).

Primary vehicle-manufacturer Countries

Primary Countries that manufacture vehicles, units (2018-19)

	Country	2018	Country	2019
1	CHINA	27,809,196	CHINA	25,720,665
2	USA	11,297,911	USA	10,873,667
3	JAPAN	9,729,594	JAPAN	9,684,294
4	GERMANY*	5,554,209	GERMANY*	5,076,349
5	INDIA	5,174,232	INDIA	4,515,991
6	MEXICO	4,100,770	MEXICO	3,988,878
7	SOUTH KOREA	4,028,705	SOUTH KOREA	3,950,614
8	BRAZIL	2,881,018	BRAZIL	2,944,988
9	SPAIN	2,819,565	SPAIN	2,822,360
10	FRANCE	2,316,831	FRANCE	2,253,000
11	THAILAND	2,159,640	THAILAND	2,005,890
12	CANADA	2,025,794	CANADA	1,916,585

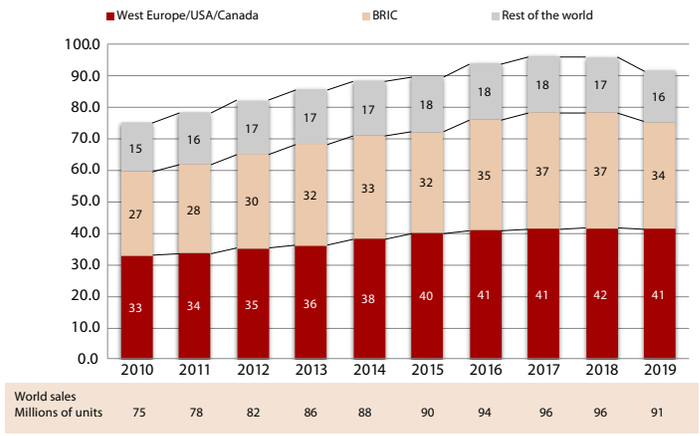
* estimated data

Source: OICA/National Associations/WARD'S/Fitch Solutions

World vehicle demand by economic macro-area

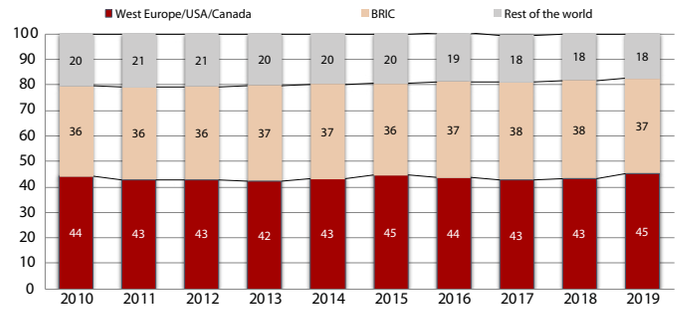
Observatory of 2020 Italian automotive components

World vehicle demand by economic macro area, in millions of units



Source: ANFIA. Study and Statistics Area

World car demand by economic macro area in % out of the world total

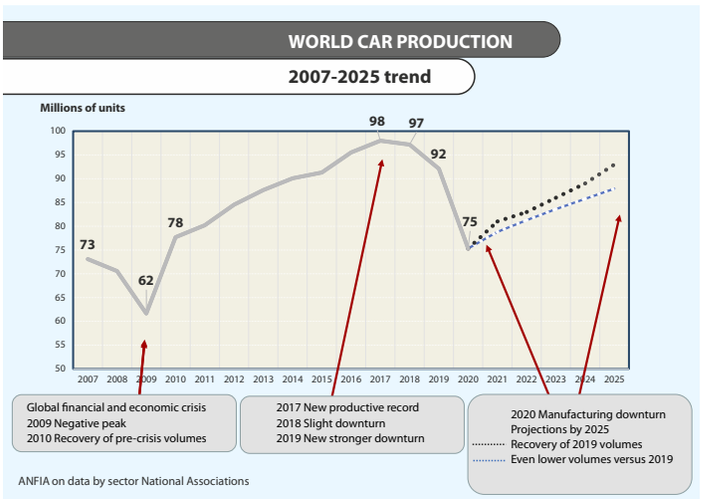


Source: ANFIA. Study and Statistics Area

Zoom on components

A step back: the survey was carried out from March to May 2020 among all sector enterprises registered in the Italian Chambers of Commerce registers by December 31st 2019. The observatory shows that in 2019 the universe of Italian automotive components generated an overall turnover of 49.2 billion Euros and employed a number

2007-2025 car production



of workers amounting to 164,305. The overall turnover variation versus 2018 corresponds to -3.9%, datum that represents a setback compared to what surveyed in the last five years, which concerned almost all supplier categories, in particular system and module providers (-6.2%) and subcontractors (-5.2%); vice versa, the trend of motorsport and E&D specialists are positive.
The turnover trend analysis by intensity of variations and by category of suppliers highlights a sector crisis that has become acute and pervasive.
First of all, for the second consecutive year it is progressively growing the share of enterprises that complain about a turnover reduction exceeding 10%, rising from 11% in 2017, to 17% of the successive year and to 27% in 2019.
Difficulties are declared by almost all segments, also by the one of specialists (-18%), whereas the only exception in the panorama of overall slowdown of the supply chain is represented by Engineering & Design activities (+23% trade balance), which strengthen the significant recovery started since 2018.

The performances of electric mobility

It is worth pointing out positively the performances of sub-clusters of motorsport, of electric mobility and of telematics, for module suppliers and system integrators (-8.1%) and for machining subcontractors (-8.0%), counterbalanced by the 3.7% growth for E&D.

FOCUS ON THE WORLD OF ELECTRIC MOTOR SUBCONTRACTING

The interview with Marco Stella, President of ANFIA Component Group and ANFIA Vice-President

What data and what vision can exist for this market in Italy and in the European ambit?
Today, the research on electric motors especially aims at reducing their weight, the number of components, mechanical frictions and energy absorption, at optimizing electronics and at reducing the use of expensive metals and materials in favour of synthetic lower-cost materials.
This means, also for the subcontracting world, further challenges to be won to remain competitive in a strongly evolving market, staking on efficiency and cost factors.

What is the first step?
It is the development of efficacious strategies to overcome the contingent crisis, considering that already in 2019 the field of the automotive subcontracting in general was affected by the approximate 5.2% drop in Italy, as highlighted by the Observatory on Italian automotive components 2020-edition. Without forgetting that Italy, even if it owns significant know-how, it does not express fully, yet, its potential of territorial competences regarding electric motor components compared to what happens in other European and non-European Countries, where this specific chain has been already concerned by a higher development, and that we are speaking of rapidly evolving technologies not fully standardized, yet. On the other hand, being the powertrain domain most involved in the technological disruption in course, it is also one of those where the highest opportunities along the entire value chain are emerging.

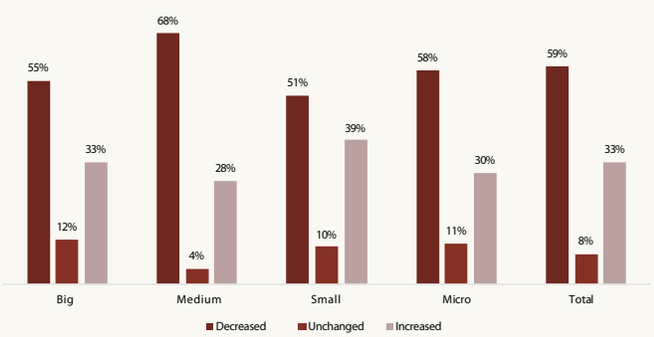
What are the components that "weigh" more?
One of the products that promise to have a great future for the supply and subcontracting chain is the inverter, whose manufacturing costs have decreased, due to the technological progress in recent years, but car makers will go on buying it from suppliers already operating in the electronics field, and then provided with the necessary structure and organization of business processes for that purpose.
Besides IGBT inverters on trade for a long time, a more recent promising technology, which has revolutionized power electronics, is the silicon carbide technology, silicon carbide power modules that can be applied in electric traction inverters. Assuring high efficiency at low charge and having nowadays reached such an industrial maturity degree as to grant sufficient reliability, SiC devices will gain market shares hand in hand with the diffusion of full electric cars with high-voltage propulsion systems.
With the same capacity as the battery group, the use of SiC in the propulsion group assures more autonomy. Otherwise, it can allow achieving the same autonomy with a notable reduction of battery sizes, and then of the vehicle weight and of recharge times. The efficiency optimization obtained thanks to this technology leads to an economic and performance advantage. Not fortuitously, nowadays SiC inverters are already used in Formula 1 and Formula E single-seaters, while Maserati was the first brand that introduced them into the market of standard models, with Folgore range.

Marco Stella, President of ANFIA Component Group and Vice-president of ANFIA

Currently, can the Italian supply chain rely on some important already successful industrial realities in this specific field?
Yes, realities able to play an important role in tomorrow's technologies, with innovative and performing components. Among our associated companies as well, companies of the calibre of Texa, EuroGroup and Aptiv, just to mention some of them, are a good example of how the concrete unceasing bent for innovation can act as a driving engine towards the car of the future.

Turnover of Italian automotive components

Adverse balances between declarations of turnover increase and decrease by business size (2017-19 years)



Source: Observatory survey about 2020 Italian automotive components