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EQUITY RESEARCH

Italy | Space

STOCK DATA

Price €	14.80
Bloomberg Code	AVIO IM
Market Cap. (€ mn)	390
Free Float	71%
Shares Out. (mn)	26.4
52-week range	9.57 - 15.68
Daily Volumes (mn)	0.07

PERFORMANCE

	1M	3M	12M
Absolute	11%	5%	16%
Rel. to FTSE all shares	8%	29%	31%

MAIN METRICS

	2019	2020E	2021E
Net revenues	368.6	392.7	423.2
Adjusted EBITDA	44.0	44.5	50.3
Adj. net income	21.2	23.5	28.5
Adj. EPS - € cents	80.3	89.3	108.2
Adj. EPS FD - € cents	77.9	86.7	105.0
DPS ord - € cents	0.0	44.0	44.0

MULTIPLES

	2019	2020E	2021E
P/E adj	13.7 x	16.5 x	13.6 x
P/E adj FD	14.1 x	17.0 x	14.0 x
EV/Adj. EBITDA	5.3 x	8.0 x	7.0 x

REMUNERATION

	2019	2020E	2021E
Div. Yield ord	0.0%	3.0%	3.0%
FCF yield	7.9%	-6.9%	4.3%

INDEBTEDNESS

	2019	2020E	2021E
Net financial position FD	68.2	41.4	46.4
Debt/Adj. EBITDA FD	n.m.	n.m.	n.m.
Interests cov	n.m.	101.3 x	164.2 x

PRICE ORD LAST 365 DAYS

BUY (unchanged)

Target: € 16.7 (prev. 16.8) | Risk: High

SPACEPORT UNLOCKED, BOTTLENECK REMOVED

As expected Avio demonstrated to be resilient achieving the FY19 EBITDA and net profit guidance despite the worst event materialised (i.e. launch failure) whose costs were covered by ESA. Upcoming €0.6-bn orders (including both ESA ministerial funds and new launchers batches) guarantee long-term visibility. The new P120 engine economies of scale will improve profitability. Return to flight is planned by mid-June.

2019 order intake slightly lower, but high visibility unchanged

In 2019 the order intake achieved €160mn, lower than our expectation of €180mn for the deferral of a portion of the first production batch of the P120 boosters and thus the order backlog was €669mn, below the €700-775mn guidance. However, this did **not include the €490-mn orders assigned by ESA in 4Q19** (or >2x the previous bi-annual EU Ministerial Council) which will be **booked between 2020 and 2021**, guaranteeing high visibility for the Development business in the 3-year period 2020-22.

No 2020 guidance

Avio did not provide 2020 guidance pending a clearer picture on COVID-19 emergency consequences: production is authorized to continue but launches from the Kourou spaceport were frozen from mid-March to mid-June. As a precautionary measure, in order to preserve its financial flexibility, **Avio suspended the dividend distribution** (we expected €11mn which we believe could be resumed in 2H - a decision will be taken after 1H results) and to postpone the payment of the long-term bonuses to 2021 (€1mn).

The business model demonstrated to be resilient

Avio demonstrated to have a highly resilient business model because despite the worst-case event materialised (i.e. the first failure of a Vega flight) it was **able to achieve the FY19 EBITDA guidance**. This confirms its ability to manage critical issues and its **essential role in guaranteeing the access to space for all European countries which the whole system is willing to protect**. The successful return to Vega launches and the maiden flights of both Ariane 6 and Vega C are obviously the next most critical events.

We reiterate our Buy recommendation because of the ...

The ongoing crisis may generate short-term imbalances, but it will not jeopardise the high quality of the long-term equity story and the financial structure is able to face short-term shocks.

- **key role in the European launchers business** (being the only provider of all boosters for both Ariane and Vega), **guaranteeing full support from ESA**
- **growing reference market** (although COVID-19 will slow it down a bit) driven by several end-market applications (navigation, meteorology, earth observation, ...) and replacement demand (satellites avg. useful life is 2/7 or 10/15 years depending on the orbit)
- **growing number of launches** (from 9 to 16 in 2023) and relevant **new development projects** funded by the **ESA Ministerial Council**
- **new P120 engine** (in production phase) for both Ariane 6 and Vega C: up to 36 units p.a., exploiting **economies of scale**
- **new methane oxygen engine M10** (under development) to expand the value added chain (substituting third party's AVUM stage)

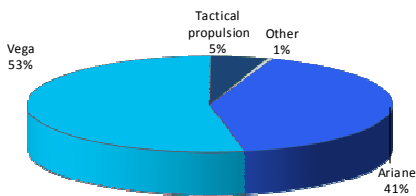
We reduce 2020 because of the spaceport lockdown effect while leaving almost unchanged the following years. **DCF-based target confirmed -1% to €16.7 PS** (or Fully Diluted FY21E adj. PE ~16x and EV/adj. EBITDA ~8.5x incl. pension liabilities).

MAIN FIGURES € mn	2017	2018	2019	2020E	2021E	2022E
Net revenues	343.8	388.7	368.6	392.7	423.2	446.8
Growth	18%	13%	-5%	7%	8%	6%
Adjusted EBITDA	46.5	47.3	44.0	44.5	50.3	54.1
Growth	27%	2%	-7%	1%	13%	8%
Adjusted EBIT	32.3	33.2	28.0	26.9	32.2	35.5
Growth	20%	3%	-16%	-4%	20%	10%
EBIT	25.0	28.5	26.5	22.9	31.2	34.5
Growth	89%	14%	-7%	-14%	36%	11%
Profit before tax	21.5	27.9	27.0	22.5	30.9	34.2
Growth	243%	30%	-3%	-16%	37%	11%
Net income	18.2	24.3	26.2	19.8	28.1	31.2
Growth	1260%	34%	8%	-24%	42%	11%
Adj. net income	21.8	26.9	21.2	23.5	28.5	31.6
Growth	63%	23%	-21%	11%	21%	11%
MARGIN	2017	2018	2019	2020E	2021E	2022E
Adj. EBITDA margin	13.5%	12.2%	11.9%	11.3%	11.9%	12.1%
Adj. EBIT margin	9.4%	8.5%	7.6%	6.9%	7.6%	7.9%
EBIT margin	7.3%	7.3%	7.2%	5.8%	7.4%	7.7%
Profit before tax margin	6.2%	7.2%	7.3%	5.7%	7.3%	7.7%
Net income margin	5.3%	6.3%	7.1%	5.1%	6.6%	7.0%
Adj. net income margin	6.3%	6.9%	5.7%	6.0%	6.7%	7.1%
SHARE DATA	2017	2018	2019	2020E	2021E	2022E
EPS - € cents	73.5	92.2	99.4	75.3	106.6	118.4
Adj. EPS - € cents	88.1	102.1	80.3	89.3	108.2	119.7
Adj. EPS FD - € cents	80.3	99.1	77.9	86.7	105.0	116.2
Growth	63%	23%	-21%	11%	21%	11%
DPS ord - € cents	38.0	44.0	0.0	44.0	44.0	44.0
VARIOUS - € mn	2017	2018	2019	2020E	2021E	2022E
Capital employed	296	254	257	281	310	322
FCF	-7	17	23	-27	17	19
Capex	29	23	29	33	27	25
Net working capital	-86	-41	-54	-26	-27	-25
INDEBTNESS - €mn	2017	2018	2019	2020E	2021E	2022E
Net financial position	42	49	58	31	36	43
D/E	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Debt/EBITDA	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
Interests cov	11.0 x	64.2 x	n.m.	101.3 x	164.2 x	176.9 x
Net financial position FD	52	60	68	41	46	54
MARKET RATIOS	2017	2018	2019	2020E	2021E	2022E
P/E	18.6 x	11.9 x	11.0 x	19.5 x	13.8 x	12.4 x
P/E FD	20.4 x	12.3 x	11.4 x	20.1 x	14.2 x	12.8 x
P/E adj	15.5 x	10.7 x	13.7 x	16.5 x	13.6 x	12.3 x
P/E adj FD	17.0 x	11.1 x	14.1 x	17.0 x	14.0 x	12.6 x
MARKET RATIOS	2017	2018	2019	2020E	2021E	2022E
EV/Net revenues	0.92 x	0.62 x	0.63 x	0.91 x	0.83 x	0.77 x
EV/Adj. EBITDA	6.8 x	5.1 x	5.3 x	8.0 x	7.0 x	6.4 x
EV/Adj. EBIT	9.9 x	7.2 x	8.3 x	13.2 x	10.9 x	9.7 x
EV/CE	1.1 x	0.9 x	0.9 x	1.3 x	1.1 x	1.1 x
REMUNERATION	2017	2018	2019	2020E	2021E	2022E
Div. Yield ord	2.8%	4.0%	0.0%	3.0%	3.0%	3.0%
FCF yield	-2.0%	6.0%	7.9%	-6.9%	4.3%	4.9%
ROE	7.6%	9.7%	7.3%	7.7%	8.8%	9.3%
Adj. ROCE	11.0%	12.3%	10.9%	9.1%	9.9%	10.5%
Adj. ROCE ex-goodwill	43.8%	93.2%	76.8%	42.6%	34.5%	33.6%
BACKLOG	2017	2018	2019	2020E	2021E	2022E
Order backlog	952	877	669	691	768	521
Order intake	521	314	161	415	500	200
Book to bill	1.5 x	0.8 x	0.4 x	1.1 x	1.2 x	0.4 x
Book to revenues	2.8 x	2.3 x	1.8 x	1.8 x	1.8 x	1.2 x

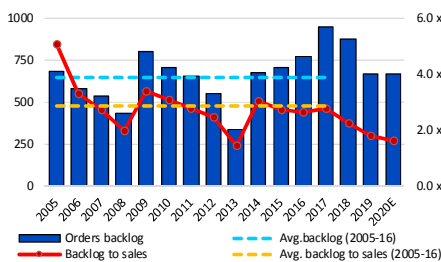
Source: Company data and EQUITA SIM estimates



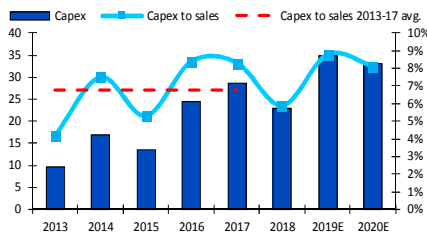
Divisional net revenues breakdown (2019)



Orders backlog (€ mn) and backlog to sales (x)



Capex (€ mn) and capex to sales (%)



BUSINESS DESCRIPTION

AVIO is a leading international space propulsion system provider (solid, liquid and cryogenic) founded in 1912 as explosive maker (a pre-requisite to enter in the space business) and in the past 50 years evolved from supplier of solid rocket motors to system integrator and prime contractor. It was listed in Apr-17 through the business combination with Space2 SPAC.

It plays a **strategic role** in the space industry through 2 European launcher programmes:

- it provides the boosters and liquid-oxygen turbopumps to Ariane 5, the European heavy launcher for satellites up to 10 tons (for broadcasting and telecom applications) in the Geostationary Earth Orbit (GEO) at 36k km altitude
- it is the prime contractor for Vega, the European light launcher for satellites up to 2 tons (for weather forecasting, earth observation and satellite internet constellations) in the Low Earth Orbit (LEO) at 300-2k km altitude.

A launcher is a rocket capable of placing satellites accurately into space for both institutional (public authorities or government agencies) and commercial clients (private companies). According to the Satellite Industry Association, the launchers sector in FY18 was worth \$ 6.2bn; it enables the access to space with a multiplier effect on satellite manufacturing (~3x) and ground and satellite services ~20x.

The critical success factor for a launcher is reliability. Despite the recent first Vega failure the European launchers remain the best-in-class at worldwide: 1998-2018 combined failure rate is 2.6% as of Jul-19 vs market avg. at 6.0% (Vega 6.6% with the first 14 out of 15 successful launches and Ariane 5 2.0% on 143 launches).

The launchers sector is oligopolistic (~90% of the market was accounted for by Russia, US, China and Europe), typically funded by massive public financial investments (in Europe the European Space Agency-ESA), with very high technological entry barriers, long-cycle business (18-24 months from when an order to build a launcher is placed and is launched into orbit) and with no Chinese/Japanese competition (operating only in their closed markets).

The most important demand drivers are emerging commercial customers for mega LEO constellations deployment (such as Space X, eightyLEO, Globalstar and One Web – currently in chapter 11) and replacement demand given the avg. useful life of 10-15 years for a GEO/MEO satellite and 2-7 years for a LEO one (>2k satellites are into orbit).

The strategy envisages:

- consolidation of its existing market position,
- supply chain consolidation through insourcing/acquisition of critical industrial supplies to improve margins and reduce dependency on external suppliers
- efficiency improvements (streamlining ground infrastructure operations and flight readiness as well as launch frequency)
- new product development (P120 engine, Vega C/E and Ariane 6, lowering the launch costs and improving the launchers versatility)
- industrial evolution towards production automation, volume scale up and reduction of product platforms leveraging the commonalities provided especially by the new P120 motor across the Ariane 6 and Vega C launchers

In Orbit (the investment vehicle participated by 67 Avio managers, including the CEO, first-line, second-line, third-line and retired managers) owns 4%. The Italian State-controlled aerospace and defense group Leonardo (AVIO shareholder since 2003) owns 25% and Space Holding (the company that promoted the business combination) owns 6%. Treasury shares are currently around 1.2% of capital.

Strengths/opportunities	Weaknesses/threats
<ul style="list-style-type: none"> • Key role in the European Space sector • Oligopolistic market/high technological entry barriers • High reliability of Ariane5 and Vega launchers • Growing market, particularly for LEO • High visibility supported by the order backlog • Innovation: new launchers (Ariane 6, Vega-C and Vega-M and new P120C engine) • Carried forward tax losses (est. >€100mn) 	<ul style="list-style-type: none"> • Smaller size and no diversification compared to much larger competitors • Only one spaceport (French Guiana) • Public budgets constraints • Price pressure • Competitors reusable technology • Flights failure causing costs and delays • Erratic orders intake/downpayments

2019 EBITDA GUIDANCE ACHIEVED ...

FY19 results issued on March 25th were basically in line with expectations except better net cash:

- **net revenues -5% YoY** to €369mn slightly lower than €377mn expected the €380-405mn guidance due to the slowdown following the failed Vega launch)
- **EBITDA flat YoY** at €42.6mn (consistent with the guidance of €42-44mn) vs €43mn
- **EBIT -7% YoY** at €26.5mn vs €27.3mn expected
- **net profit after minorities +5% YoY** at €26.2 vs €25mn expected (consistent with -3/+5% YoY to €25-28mn guidance) slightly better for tax credit repayments (less than €1mn related to delayed VAT credits cash-in)
- **net cash €58mn much better** than the €40mn expected because of the collection of VAT credits (€34mn) and lower than expected capex (€4mn)

... IN SPITE OF THE FIRST EVER VEGA FAILURE

On Jul-11th the 15th launch of the Vega (VV15) suffered a premature end of the mission (the first failure after 14 in-a-row successful flights - a global first). As we always highlighted, the launchers business is not immune from risks: in the 21-year period 1998-2018 the global average failure rate of all launchers was 6%. The **European launchers** (i.e. Ariane for which Avio provides the boosters and Vega of which Avio is prime contractor) **remain the most reliable** even factoring in this failure (the combined failure rate is 2.6%).

The resilience of AVIO business model was demonstrated by the achievement of 2019 EBITDA guidance in spite of this painful event because:

- Arianespace and French government are responsible for failures after take-off, beyond the usual insurance policies coverage
- ESA contributed to cover the costs: the Ministerial Council held in November approved the existing **programs specifically devoted to flight anomalies** which covered the non-recurring costs associated with the failure (such as investigation and corrective actions).

The only **side effect** concerns the reputation damage with potential implications on pricing power and insurance costs. So far, **the company denies significant consequences** but the return to successful Vega launches prerequisite. The VV16 flight simultaneously placing in orbit 52 micro satellites, using for the first time the Small Spacecraft Mission Service (SSMS), was scheduled on March 23rd. Unfortunately, on March 16th the French Government announced the lockdown of the Kourou spaceport for precautionary reasons due to the COVID-19 pandemic thus postponing the date.

HOWEVER, 2019 EBITDA IMPACTED BY SEVERAL EFFECTS

2019 EBITDA was achieved but it is worth noting that it was influenced by several items not precisely quantified, the majority of them non-recurring:

- **On the positive side**
 - o **IFRS 16 first application** (we believe €2mn), a recurring non-cash item although small
 - o **Vega price adjustment** (calculated at the end of the batch life), a one-off event
 - o **ESA compensation for the Vega failed mission**, a one-off item specifically linked to non-recurring event
- **On the negative side**
 - o **R&D tax credits** €4-5mn anyway down YoY compared to €6.0mn in 2017 and €7.4mn in 2018 because of the change in the legislation which imposed the partial reversal of what recorded in the previous years.

BEFORE SPACEPORT LOCKDOWN 2 SUCCESSFUL ARIANE LAUNCHES YTD

On January 16th, the first launch of the year of Ariane 5 (VA251 - 107th successful mission in a row) was successfully completed, bringing two satellites into orbit for Internet access and television broadcasting services: Eutelsat Konnect for Eutelsat and GSAT-30 for the Indian Space Research Organization.

On February 18th, the second launch of the year of Ariane 5 (VA252 - 108th successful mission in a row) was successfully completed, bringing two satellites into orbit:

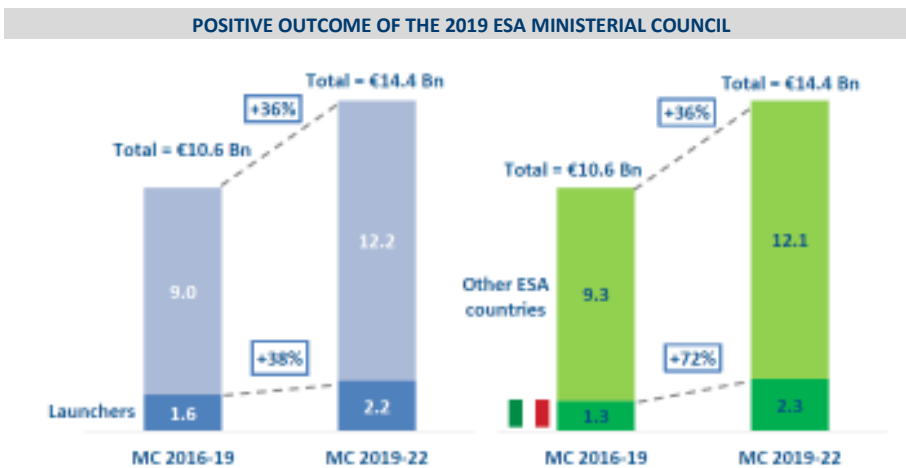
- JCSAT-17 for Internet access and TV broadcasting for the Japanese SKY Perfect JSAT Corporation
- GEO KOMPSAT-2B for telecommunication and ocean monitoring for the South Korean Aerospace Research Institute.

In both cases Avio supplies the first stage engines and the turbopump.

DEVELOPMENT BUSINESS BENEFITING FROM €490MN ESA ORDERS

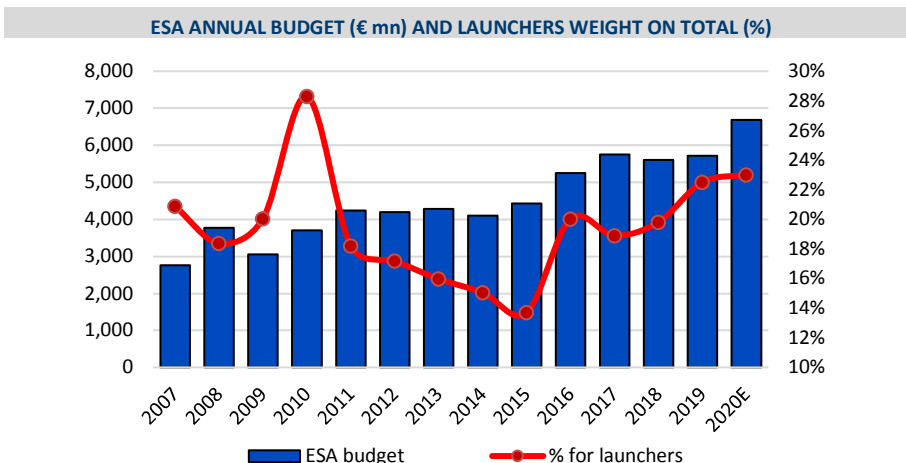
On December 6th Avio announced the amount of R&D contracts obtained by ESA's Ministerial Council held on November 27th and 28th:

- the total budget for the 3-year period 2020-22 grew by 36% compared to the previous one to €14.4bn (within it the contribution of Italy grew by 72% to €2.3bn)



Source: Company presentation

- the portion dedicated to launchers increased by 39% to €2.2bn (or 15% of total budget).



Source: Company presentation

All the programs in which Avio is involved (Vega C, Ariane 6, Vega Evolution, Vega C light and Space Rider) were financed, projecting orders for R&D and support of €490mn (in excess of 3% of the total ESA budget), or around twice the amount of the previous Ministerial Council.

POSITIVE OUTLOOK FOR THE EVOLUTION OF VEGA PROGRAMS



Source: Company presentation

These orders will be mainly signed and transformed into backlog both in 2020 and in 2021, depending on the speed of the bureaucratic procedures.

The management never disclosed for the Development business revenues trend going forward, but its **visibility significantly improved: we estimate at least € 130-140 mn p.a.** (from the 4-year period 2016-19 avg. around € 120mn). The COVID-19 could slow down the deployment but we do not expect any major impact having the possibility to go ahead through smart working.

MAIN HIGHLIGHTS FROM THE LAST CONFERENCE CALLS

- **all measures are to ensure continuity of production has been taken** (for instance all production materials have been secured for 2020) including cost containment
- the spaceport in Guyana reopened on May 11th (inside activity never stopped, but launches were frozen) and **launches should restart around mid-June**
- **possible negative impact from NWC** depending on the speed to recover the time lost
- **launch activity:** the first flight will be Vega around mid-June, 2 more Vega launches are (August and 4Q) and 1 Ariane 5 (July) are already scheduled. We believe more launches are likely within the year further recovering the delay caused by the spaceport lockdown; one more Ariane 5 launch is not ruled out by year-end. Also the campaign for the Vega C maiden flight is expected before the end of the year

AVIO: UPCOMING FLIGHT ACTIVITY

- VV16 SSMS – mid-June
- VV17 – August
- VV18 – by year-end
- Vega C - launch campaign to start by year-end
- Ariane 5 VA253 – end of July

Source: Company presentation

- **development activity:** no major issues deriving from COVID-19 pandemic

Both the solid financial structure and the medium-/long-term visibility are confirmed:

- **financial flexibility guaranteed** by net cash + suspension of dividend payment + modular capex (able to offset NWC absorption)
- **backlog guaranteeing 2 years of activity**, of which 70% comes from government end customers
- **new incoming orders exceed €650mn** (of which €490mn from ESA, €70mn for the P120 batch postponed from 2019, €80mn for the new batch of Vega and more from the tactical business) **to be spread between 2020 and 2022**

POSITIVE 1Q20 RESULTS

As we always we point out for a business based on long-term programmes, **a single quarter is not indicative of a trend**; however, it is worth highlighting that despite the pandemic, 1Q performance was in line with last year and our expectations; ex-non-recurring costs, it was even better (although typically 1Q is the weakest quarter of the year). Only the net cash was worse for a different NWC trend.

- net revenues -3% YoY at €80mn vs €80mn
- EBITDA +4% YoY at €7.2mn vs €7mn
- EBIT flat YoY at €3.1mn vs €3.1mn
- net cash €42mn vs €54mn for temporary NWC absorption (for seasonal reasons)

As usual for quarterly data no disclosure below EBIT.

AVIO: 1Q20 RESULTS DECLARED vs EXPECTED (€ mn)				
	1Q20 Declared	%	1Q20 Declared	%
Revenues	80.0	100.0	80.0	100.0
Incr. %	-3%		-3%	
EBITDA	7.0	9.0	7.2	9.0
Incr. %	3%		3%	
EBIT	3.1	3.9	3.1	3.9
Incr. %	0%		0%	
NF Position	53.5		42.1	

Source: Equita SIM estimates and company data

The flat EBITDA despite the slight decrease in revenues (both development and production) is due to cost containment; however, the contribution of R&D fiscal incentives was not quantified.

The quality was good because 1Q20 was penalised by non-recurring costs totalling €0.7mn (of which €0.5 for donations related to the COVID-19 emergency and the rest for protection equipment); net of these the operating performance was even better

- adj. EBITDA +10% YoY at €7.8mn
- adj. EBIT +19% YoY at €3.8mn

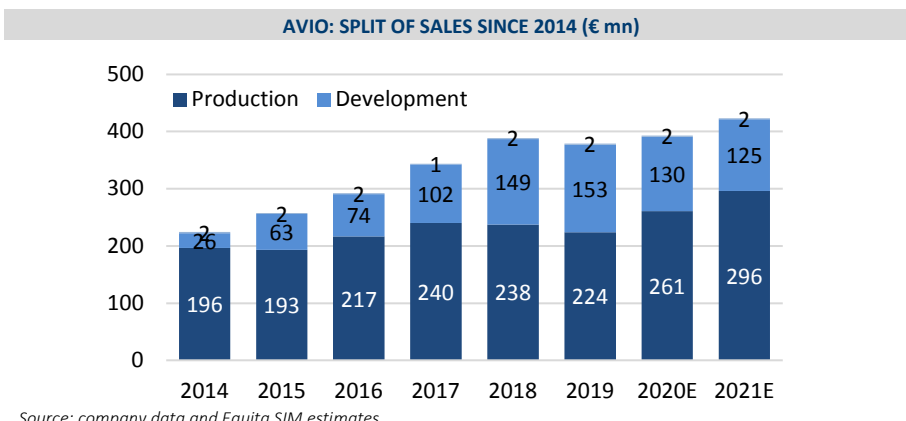
WE REDUCE 2020 ESTIMATES FOR LAUNCHES DELAY, WHILE LEAVING ALMOST UNCHANGED THE FOLLOWING YEARS

We cut 2020 estimates to factor in the delay in launches following spaceport lockdown which we assume it will be only partially recovered, **while leave basically unchanged the following years** based on the high visibility guaranteed by the backlog and the upcoming orders.

AVIO: 2020-21 CHANGE IN ESTIMATES (€ mn)										
	FY20E	%	FY20E	%	Ch.	FY21E	%	FY21E	%	Ch.
	Prev.		Curr.			Prev.		Curr.		
Revenues	410.1	100.0	392.7	100.0	-4%	419.0	100.0	423.2	100.0	1%
Incr. %	9%		7%			3%		8%		
Adj. EBITDA	49.5	12.2	44.5	11.3	-10%	50.0	11.9	50.3	11.9	0%
Incr. %	7%		1%			1%		13%		
EBITDA	47.0	11.6	40.5	10.3	-14%	49.0	11.7	49.3	11.6	0%
Incr. %	9%		-5%			5%		22%		
Adj. EBIT	32.2	8.0	26.9	6.9	-16%	32.5	7.8	32.2	7.6	-1%
Incr. %	6%		-4%			0%		20%		
EBIT	29.7	7.4	22.9	5.8	-23%	31.5	7.5	31.2	7.4	-1%
Incr. %	9%		-14%			5%		36%		
Pre-tax profit	29.3	7.3	22.5	5.7	-23%	31.2	7.4	30.9	7.3	-1%
Incr. %	9%		-16%			6%		37%		
Net Income	26.1	6.5	19.8	5.1	-24%	27.8	6.6	28.1	6.6	1%
Incr. %	4%		-24%			6%		42%		
Net financial position	32.8		31.0		-5%	37.0		36.0		-3%

Source: Equita SIM estimates

In our estimates we assume the dividend will be restored in 2021.



OneWeb IN CHAPTER 11

On March 29th OneWeb, the company with the goal of creating the first global communications network powered by a constellation of 900 low-Earth-orbit satellites, to provide connectivity to worldwide, **filed for chapter 11**.

Onweb signed contracts with Arianespace to launch satellites essentially with Soyuz, (not involving Avio which supplies the boosters to Ariane and produces Vega). OneWeb had only booked the Ariane 62 maiden flight (according to nexspaceflight.com scheduled on January 23rd 2021) which now has to find an alternative payload.

We do not rule out that OneWeb can be rescued having already made 3 launches with about 70 satellites in orbit and having also Airbus as shareholder (which is also indirect shareholder of Arianespace).

The news is obviously negative for the reference market, but **we do not believe that visibility for Avio is at risk** based on the abovementioned backlog and upcoming orders

VALUATION ALMOST UNCHANGED

As a consequence of our DCF-based target at -1% to € 16.7PS (where lower 2020 estimates are almost offset by slightly lower WACC).

ASSUMPTIONS		AVIO: DFCF ANALYSIS (€ mn)					
		2020E	2021E	2022E	2023E	2024E	Beyond
g	2.0%						
WACC	7.2%						
	Sales	393	423	447	467	497	507
	Change %	6.5%	7.8%	5.6%	4.5%	6.4%	2.0%
	EBITDA	41	49	53	55	55	42
	Change %	-4.9%	21.6%	7.7%	3.8%	-0.9%	-23.9%
	Margin	10.3	11.6	11.9	11.8	11.0	8.2
	D&A	-18	-18	-19	-19	-20	-11
	EBIT	23	31	35	36	35	30
	Change %	-13.5%	36.0%	10.6%	4.3%	-2.8%	-13.1%
	Margin	5.8	7.4	7.7	7.7	7.0	6.0
	Taxes	-2	-2	-2	-2	-2	-2
	EBIT after Tax	21	30	33	34	33	29
	Change %	-19.3%	38.6%	10.8%	3.3%	-2.9%	-13.1%
	Capex	-33	-27	-25	-25	-25	-11
	(increase) decrease in WC	-27	1	-2	-1	-3	-3
	Free Cash Flow before minorities	-21	22	24	27	24	26
	FCF Minorities	-1	-1	-1	-2	-2	-2
	Free Cash Flow after minorities	-23	21	23	25	23	25
	Discount Factor	1.00	1.07	1.15	1.23	1.32	1.32
	PV of FCF	-23	19	20	21	17	19
Valuation							
NPV of Free Cash Flows	55						
NPV of Terminal Value	360						
Estimated Enterprise Value	414						
2019A NFP	58						
Adjustment to NFP	-26						
Equity	446						
Peripherals & other	8						
Total Equity	454						
# of shares fully diluted	27.2						
Target Price	16.7						
Upside (Downside)	14%						

Source: Equita SIM estimates

AVIO: DFCF SENSITIVITY ANALYSIS (€ PS - FULLY DILUTED)

	G factor	WACC		
		7.7%	7.2%	6.7%
	1.5%	14.3	15.5	16.9
	2.0%	15.3	16.7	18.4
	2.5%	16.5	18.2	20.3

Source: Equita SIM estimates on Bloomberg consensus data

As we always highlighted a **pure comparable does not exist**.

By applying the FY20-21E average multiples of our panel (including German OHB, French Safran, the UK Rolls Royce and the US Aerojet Rocketdyne) we get an average valuation around € 18.5 PS (5-10% below what we got in the past with the same exercise).

AVIO: VALUATION BASED ON COMPARABLES MULTIPLES (€ PS) *

	Avg. multiples		Resulting valuation		Average
	2020E	2021E	2020E	2021E	
Adj. PE	25.2 x	20.7 x	21.9	21.7	21.8
EV/Sales	1.23 x	1.08 x	18.5	17.7	18.1
EV/EBITDA	9.9 x	7.9 x	17.0	15.5	16.2
EV/EBIT	19.8 x	12.1 x	20.4	15.2	17.8
AVERAGE			19.5	17.5	18.5

* EV multiples include pension liabilities

Source: Equita SIM estimates on Bloomberg consensus data

We obtain a similar conclusion by restricting the panel to what we consider the relatively most comparable company, Rocketdyne (although much larger, more diversified and focused on the US market).

As explained in the past we reckon that the smaller size, the lower stock liquidity and the lower business diversification of Avio may justify a discount vs its comparables.

STATEMENT OF RISKS

The primary elements that **could negatively impact the stock include:**

- Significant deterioration in the reference macroeconomic scenario
- Significant increase in short term interest rates
- European Space budget cuts and European Governments instability
- French Guiana social problems causing launches delay
- New technological innovation generating price pressure
- Launch failures affecting the reliability
- More expensive and longer than expected development programmes
- Changes in the R&D fiscal incentives schemes

SWOT ANALYSIS

Strengths/opportunities	Weaknesses
<ul style="list-style-type: none"> • Oligopolistic market with high technological entry barriers • Key role in the European Space launcher sector • European launchers high reliability (both Ariane 5 and Vega) • Vega proven multi-payload and multi-orbit ability • Growing market particularly for LEO • High visibility supported by the high backlog destined to grow further • European countries public funding for common programmes • Huge tax-credits 	<ul style="list-style-type: none"> • Smaller size and no diversification compared to much larger competitors • Erratic orders intake and thus not easy to predict down payments • Access to only one spaceport in French Guiana (also exposed to the social crisis risk) • Past few years relevant non-recurring costs • Smaller public budgets to finance new development projects
Opportunities	Threats
<ul style="list-style-type: none"> • New launchers currently under development (Ariane 6, Vega-C and Vega-E) • AVIO's new first stage solid propellant engine P120C to be used for both new Ariane 6 and Vega C/Vega E from 2019 • AVIO's new methane oxygen engine M10 engine to replace AVUM upper stage (produced by a third party) from 2024 • Planned increase in the number of launches with heavier payload • Insourcing/acquisition of critical industrial supplies to consolidate margins and reduce dependency on external suppliers leveraging on the strong financial structure • New markets access 	<ul style="list-style-type: none"> • Flights failure causing costs, delays and worsened reliability • Public spending budget constraint • Aggressive pricing strategy from some competitor • Competition from Chinese CZ6 (although limited to a portion of the accessible market) • Long-term technological innovations (multi payload/multi-orbit and smaller satellite size) which could reduce launchers demand • SpaceX's reusable rocket technology • Social/political problems in French Guiana

APPENDIX: THE EUROPEAN LAUNCHERS REMAIN THE MOST RELIABLE

Last July the 15th launch of the Vega did not complete the mission due to a problem with the second-stage Zefiro 23 engine. This was the first failure after 14 flights without problems in a row.

On Sep-5th the **independent investigation** jointly carried out by ESA and Arianespace:

- **identified in the failure of the thermo-structure of the second-stage Zefiro 23 engine** produced by Avio as the most likely cause of the Vega VV15 launch failure (on July 11th); it is worth remembering that according to the plans, the Zefiro 23 will be replaced by the Zefiro 40 in the new configuration of Vega C
- **indicated a set of corrective actions to be implemented.**

The outcome of the investigation **removed the worst-case scenario**, which could have materialized in case of a substantial revision of the Vega program, implying high costs, long delays and a lot of uncertainty.

We believe the only **unavoidable consequences concern higher insurance costs** (4-8% of the launch cost in proportion to proven reliability over time) **and maybe slightly lower bargaining power for future negotiations** (i.e. launches after 2021).

The critical success factor for a launcher is its reliability, which is inversely proportional to the number of failures (i.e. explosion of the launcher, damages caused to the satellite during transit, positioning in an incorrect orbit/location, ...).

For AVIO the direct risk of bearing non-recurring costs is limited because in case of failure:

- **after launcher delivery** (for both Ariane 5 and Vega), **Arianespace**, in its capacity as Launch Service Provider, **is liable to pay up to a maximum of €60 mn; ESA and the French Government** are liable for the amount exceeding €60 mn;
- **before Vega's delivery, the prime contractor AVIO is held responsible.**

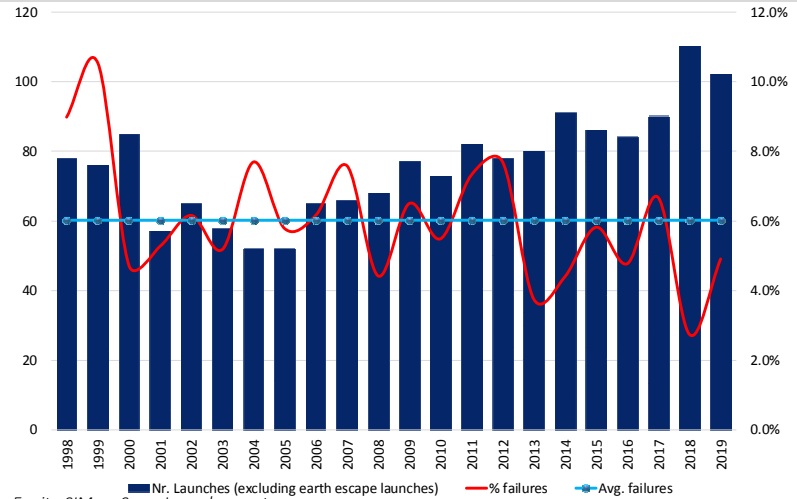
Furthermore, in case of **delays due to external factors**, Arianespace is responsible for managing the schedule.

For Avio the most important direct and indirect consequences of a launch failure are:

- **deterioration in perceived reliability**, thus a risk of lower bargaining power;
- **increased insurance costs** for future launches;
- **costs** incurred to resolve the problem;
- **flights suspension** until the problem is identified and resolved;
- **production inefficiencies because of launch delays;**
- **cancellation of scheduled launches** (the worst-case scenario).

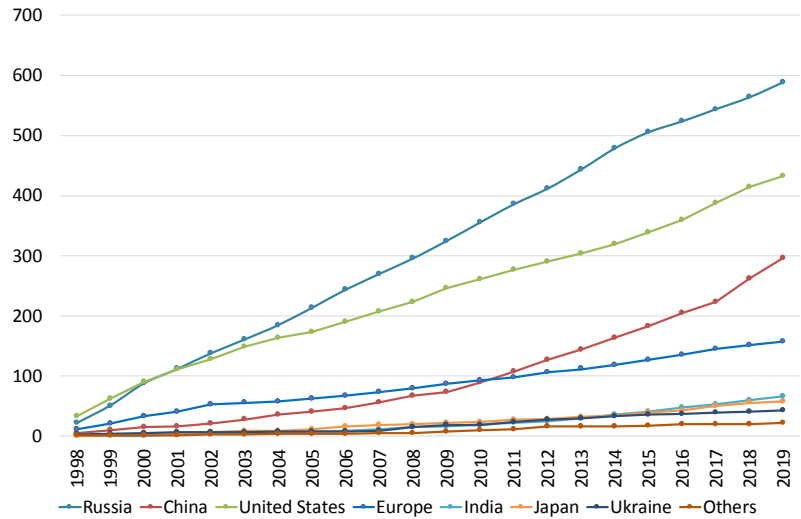
According to Space Launch Report, around **1.67k launches took place worldwide between 1998 and 2019** (54% in LEO and 46% in higher orbits). **Failures were 99, or 5.9% of total launches** (same figure both in LEO and in other orbits).

SPACE LAUNCHES: TOTAL LAUNCHES/FAILURE RATE and CUMULATE BY COUNTRY (1998-19)



Source: Equita SIM on SpaceLaunch report

SPACE LAUNCHES: TOTAL LAUNCHES/FAILURE RATE and CUMULATE BY COUNTRY (1998-2019)

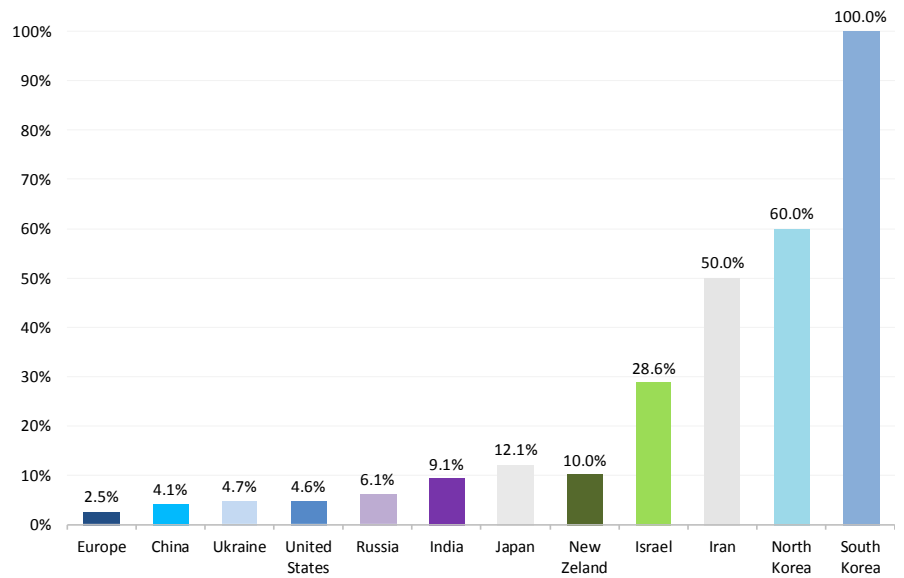


Source: Equita SIM on Space Launch report

Looking at the **failure rate (number of failures/number of flights in the period 1998-2019)**:

- Japan, India and the “new entry” New Zealand were the worst performers (12.1%, 9.1 and 10.0% respectively);
- Russia was close to the average (6.1%);
- the US and Ukraine were slightly below the average (4.6% and 4.7% respectively);
- China was below-average (4.1%);
- **Europe was the best performer (2.5%).**

SPACE LAUNCHES: FAILURE RATE (number of failures/number of flights – 1998-2019)



Source: Equita SIM on Space Launch report

Since the start of the programme Ariane 5 suffered 4 failures (of which 3 were qualification flights - when the failure risk is typically higher). **The last one dates back as far as 18 years ago**, whereas the others date back even further (1996, 1997 and 2001). No one caused major delays to the following flights.

P&L	2017	2018	2019	2020E	2021E	2022E
Net revenues	343.8	388.7	368.6	392.7	423.2	446.8
Growth	18%	13%	-5%	7%	8%	6%
Gross revenues	385.2	439.7	391.1	392.7	423.2	446.8
Growth	13%	14%	-11%	0%	8%	6%
Total opex	-304.6	-346.1	-326.0	-352.2	-374.0	-393.7
Growth	15%	14%	-6%	8%	6%	5%
Margin	-88.6%	-89.1%	-88.4%	-89.7%	-88.4%	-88.1%
Adjusted EBITDA	46.5	47.3	44.0	44.5	50.3	54.1
Growth	27%	2%	-7%	1%	13%	8%
Adj. EBITDA margin	13.5%	12.2%	11.9%	11.3%	11.9%	12.1%
EBITDA	39.2	42.6	42.6	40.5	49.3	53.1
Growth	46%	8%	0%	-5%	22%	8%
EBITDA margin	11.4%	10.9%	11.6%	10.3%	11.6%	11.9%
Depreciation&amortization	-14.2	-14.0	-16.1	-17.6	-18.1	-18.6
Provisions	na	na	na	na	na	na
Depreciation&provision	-14.2	-14.0	-16.1	-17.6	-18.1	-18.6
Adjusted EBIT	32.3	33.2	28.0	26.9	32.2	35.5
Growth	20%	3%	-16%	-4%	20%	10%
Adj. EBIT margin	9.4%	8.5%	7.6%	6.9%	7.6%	7.9%
Non-recurring costs	-7.2	-4.7	-1.4	-4.0	-1.0	-1.0
EBIT	25.0	28.5	26.5	22.9	31.2	34.5
Growth	89%	14%	-7%	-14%	36%	11%
EBIT margin	7.3%	7.3%	7.2%	5.8%	7.4%	7.7%
Net financial profit/Expenses	-3.6	-0.7	0.5	-0.4	-0.3	-0.3
Other financial profit/Exp	0.0	0.0	0.0	0.0	0.0	0.0
Total financial expenses	-3.6	-0.7	0.5	-0.4	-0.3	-0.3
Non recurring pre tax	0.0	0.0	0.0	0.0	0.0	0.0
Profit before tax	21.5	27.9	27.0	22.5	30.9	34.2
Growth	243%	30%	-3%	-16%	37%	11%
Taxes	0.3	-2.0	0.0	-1.5	-1.5	-1.6
Tax rate	-2%	7%	0%	7%	5%	5%
Minority interests	-3.6	-1.5	-0.8	-1.2	-1.3	-1.4
Non recurring post tax	na	na	na	na	na	na
Net income	18.2	24.3	26.2	19.8	28.1	31.2
Growth	1260%	34%	8%	-24%	42%	11%
Net income margin	5.3%	6.3%	7.1%	5.1%	6.6%	7.0%
Adj. net income	21.8	26.9	21.2	23.5	28.5	31.6
Growth	63%	23%	-21%	11%	21%	11%
Adj. net income margin	6.3%	6.9%	5.7%	6.0%	6.7%	7.1%
CF Statement	2017	2018	2019	2020E	2021E	2022E
Cash Flow from Operations	36.0	39.8	43.0	38.6	47.5	51.2
(Increase) decrease in OWC	46.2	3.7	12.0	-27.4	1.2	-2.1
(Purchase of fixed assets)	-28.6	-22.9	-28.6	-33.0	-27.0	-25.0
(Other net investments)	67.0	0.2	-2.7	0.0	0.0	0.0
(Distribution of dividends)	0.0	-10.0	-11.6	0.0	-11.6	-11.6
Rights issue	0.2	0.0	0.0	0.0	0.0	0.0
Other	-60.5	-3.3	-3.6	-5.0	-5.0	-5.0
(Increase) Decrease in Net Debt	60.3	7.4	8.7	-26.8	5.0	7.4

Source: Equita SIM estimates and company data

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REDUCE	3.6%	3.9%
NOT RATED	1.8%	2.6%

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