UBS

Global Research

21 May 2020

UBS Global I/O

Autos/Industrial Semiconductors

Q2 should mark the trough, what pace of recovery?

Equities

Global

Semiconductors

David Mulholland, CFA
Analyst
david.mulholland@ubs.com
+44-20-7568 4069

Francois-Xavier Bouvignies
Analyst
francois.bouvignies@ubs.com
+44-20-7568 7105

Timothy Arcuri
Analyst
timothy.arcuri@ubs.com
+1-415-352 5676

Nicolas Gaudois
Analyst
nicolas.gaudois@ubs.com
+852-2971 5681

Kenji Yasui
Analyst
kenji.yasui@ubs.com
+81-3-5208 6211

Shingo Hirata, CFA
Analyst
shingo.hirata@ubs.com
+81-3-5208 6224

Bill Lu
Analyst
bill.lu@ubs.com
+1-415-352 4696

Patrick Hummel, CFA
Analyst
patrick.hummel@ubs.com
+41-44-239 79 23

David Lesne
Analyst
david.lesne@ubs.com
+33-1-4888 3034

Focus shifts to recovery - after -15% in '20E we see 26% growth in '21E

As investor focus shifts from short-term/balance sheet resilience towards the pace of recovery we might expect in 2021E, in this note we revisit our leading indicator analysis and revise our auto semis revenue model. We recognise risks to the pace of recovery and hurdles as Europe/US lockdowns ease but remain positive on the sector. We see a number of catalysts to support stocks including: 1) Semis y-o-y growth is likely already at trough in Q2/Q3 given the rapid slow-down with a sharp return to growth in view for 2021E; 2) Trends in auto production can't get much worse than Q2 and should improve into Q3; 3) Potential government stimulus plans in autos (as recently discussed in EU) that also might have some bias towards EV (positive for semis content).

Revising our autos semis revenue model

We revisit our autos semis revenue model reflecting our latest production estimates - we now forecast -15% auto semis revenues in 2020E (was -3%) before recovering +26% in 2021E (was +13%). We continue to see a very strong content opportunity in auto semis (+8% through cycle) driven by increasing share of EV deployments and rising penetration of ADAS safety systems (both undiminished by COVID-19). There is some potential that auto semis sales could be helped in 2020E by mix shifting towards premium cars (something being seen in China) and inventory build as Tier 1s / OEMs look to ensure more resilience but our focus is more on the reacceleration in 2021E.

State of play - sector leading indicators trending positively

Our leading indicator work points to: 1) y-o-y semis rev growth troughing in Q2'20 at -16% y-o-y then recovering in H2. We also note that on a 2-year CAGR basis (given '19 was a challenging year) this '19-20 downcycle is seeing a similar pace of slow-down for the industry as that seen in '08-09. 2) Inventory within semis remains elevated (6 days above normal); autos OEMs/Tier 1s are currently 8 days above normal (though in absolute in-line with normal levels) while industrial OEMs are in-line with normal trends. 3) We believe semis are over-shipping demand in Q2 but should normalise in Q3.

Valuation / preferred stocks

The sector is trading on 19x '21E P/E, not cheap compared to 1y forward average of 18x but we see potential for earnings momentum to accelerate as end demand stabilises/recovers. Our most preferred names are Infineon, Renesas, Rohm and STMicro. Least preferred are Melexis and TXN (though we recently upgraded to Neutral).

www.ubs.com/investmentresearch

This report has been prepared by UBS AG London Branch. **ANALYST CERTIFICATION AND REQUIRED DISCLOSURES BEGIN ON PAGE 17.** UBS does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

每日免费获取报告

1.每日微信群内分享7+最新重磅报告；

2.定期分享华尔街日报、金融时报、经济学人；

3.和群成员切磋交流，对接优质合作资源；

4.累计解锁8万+行业报告/案例，7000+工具/模板

申明：行业报告均为公开整理，权利归原作者所有，小编整理自互联网，仅分发做内部学习。

限时领取【行业资料大礼包】，回复“2020”获取

手机用户建议先截屏本页，微信扫一扫

或搜索公众号“有点报告”

回复<进群>，加入每日报告分享微信群

（此页只为需要行业资料的朋友提供便利，如果影响您的阅读体验，请多多理解）

Revising our auto semis revenue model

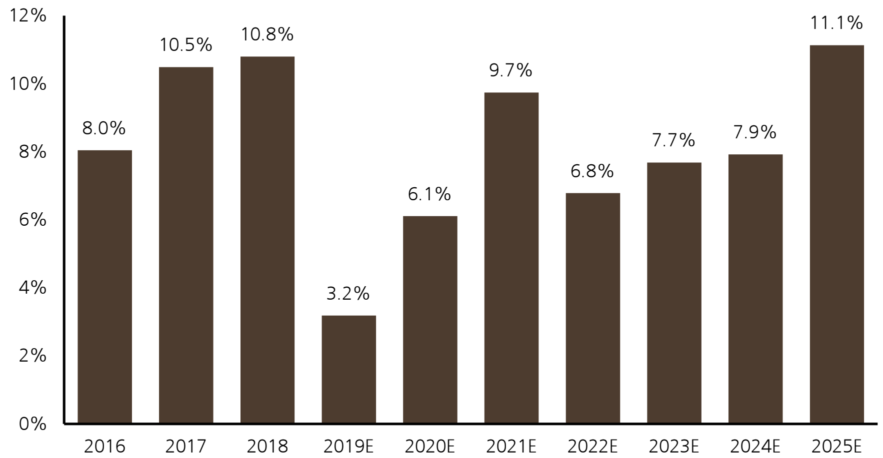
Our autos colleagues recently reduced our autos production forecasts to -19% y-o-y in 2020 before a +15% recovery in 2021E (UBS Global Autos Sales Monthly) and hence we revise our bottom-up autos semis revenue model. With the pace of correction being seen through supplies due to the COVID-19 outbreak we had already largely reflected the changes in our company forecasts through earnings season (or in some cases before). The key question for us in revising the model however has been to understand the potential pace of recovery in content growth that we might see as we progress into 2021E. We see four main drivers of our forecasts into 2021E that give us confidence growth will reaccelerate strongly:

(1) **Autos production recovery:** Clearly the absolute autos units are one of the most important drivers. We currently assume a recovery of +15% y-o-y in 2021E to 82m units; this is still well below the last peak of 95m units and even 2019's 89m units.

(2) **Change in inventory levels:** We saw through 2019 a major headwind to auto semis sales as inventory was worked down through the channel. We currently assume some moderate inventory reduction still in 2020 (though less than in 2019) and we believe it is quite possible 2021E could then benefit from some rebuild of inventory through the supply chain.

(3) **Underlying content growth:** While the market has been highly disrupted through 2019/2020 the underlying dynamics of new model launches to drive rising EV penetration and greater adoption of ADAS features with new model launches are largely unchanged. This means that whilst the headline content growth that we show in our model in 2019/2020 has been below trend (we believe trend is c8%), this has largely been a consequence of the inventory changes rather than anything structural in the industry. If anything some of the commentary we see on current auto sales suggest that the sales recovery is biased towards high-end models which would be helpful for content.

Figure 1: UBS auto semis model - content growth assumptions



Source: UBS estimates

We include below our auto semis revenue model along with the key assumptions we are making regarding rising EV mix.

Figure 2: UBS Auto semis revenue model (US$m)

	GARTNER HISTORICS					UBS ESTIMATES						
Semi sales (US$bn)	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**2025E**	**% CAGR ('19-'24)**
ADAS	1.7	3.0	4.1	5.1	5.9	5.6	8.3	9.6	11.4	13.8	18.0	19%
Aftermarket	2.2	2.2	2.3	2.5	2.5	1.9	2.3	2.5	2.5	2.6	2.7	1%
Body	4.6	5.5	6.6	7.4	6.9	5.6	6.6	7.2	7.7	8.2	8.7	4%
Chassis	4.6	4.5	5.1	5.4	5.1	4.1	4.9	5.4	5.7	5.8	5.9	3%
Infotainment	7.2	7.7	8.4	9.0	8.4	6.8	8.2	9.0	9.6	10.0	10.4	4%
Powertrain	5.4	6.8	7.4	8.0	8.2	7.6	9.8	11.3	12.8	14.7	17.0	12%
Safety	4.4	4.3	4.6	4.7	4.1	3.5	4.1	4.3	4.4	4.5	4.5	2%
Total	**30.1**	**34.1**	**38.5**	**42.2**	**41.0**	**35.1**	**44.3**	**49.1**	**54.2**	**59.5**	**67.2**	**7.7%**
% y-o-y		**13.3%**	**13.1%**	**9.5%**	**-2.8%**	**-14.5%**	**26.3%**	**10.9%**	**10.4%**	**9.8%**	**12.8%**	
Autos production(m)	**88.8**	**93.1**	**95.3**	**94.2**	**88.7**	**71.5**	**82.2**	**85.4**	**87.6**	**89.1**	**90.5**	
% y-o-y		**4.9%**	**2.3%**	**-1.2%**	**-5.8%**	**-19.4%**	**15.1%**	**3.9%**	**2.5%**	**1.8%**	**1.5%**	
$ content / car	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**2025E**	**% CAGR ('19-'24)**
ADAS	19	32	44	54	66	79	101	112	130	154	198	19%
Aftermarket	24	24	24	27	28	26	28	29	29	30	30	1%
Body	52	59	69	78	78	78	80	84	88	92	96	3%
Chassis	51	48	53	58	57	58	60	63	65	65	65	3%
Infotainment	81	83	88	96	95	95	100	105	110	112	115	3%
Powertrain	61	74	78	85	93	106	119	132	147	165	188	12%
Safety	50	46	48	50	46	49	50	50	50	50	50	2%
$ Content per car	**339**	**366**	**404**	**448**	**462**	**490**	**538**	**575**	**619**	**668**	**742**	**7.6%**
% y-o-y		**8.0%**	**10.5%**	**10.8%**	**3.2%**	**6.1%**	**9.7%**	**6.8%**	**7.7%**	**7.9%**	**11.1%**	

Source: UBS estimates, Gartner historics

Figure 3: UBS auto semis revenue model - powertrain / EV estimates

Powertrain mix	**2015**	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**	**2024E**	**2025E**
Gasoline			83%	81%	78%	73%	70%	66%	62%	56%	49%
Diesel			12%	12%	11%	9%	8%	7%	6%	4%	3%
48V/mild hybrid (gas)			1%	3%	6%	9%	12%	15%	17%	20%	24%
HEV			2%	3%	3%	4%	4%	5%	6%	6%	7%
PHEV			1%	1%	1%	2%	2%	2%	1%	1%	2%
BEV			1%	1%	2%	3%	4%	6%	9%	12%	16%
FCV			0%	0%	0%	0%	0%	0%	0%	0%	0%
Content mix ($/car)			**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Gasoline			65	65	67	68	70	69	68	67	65
Diesel			75	79	75	80	80	80	80	80	80
48V/mild hybrid (gas)			100	100	100	100	100	100	100	100	100
HEV			225	225	225	225	225	225	225	225	225
PHEV			400	400	400	400	400	400	400	400	400
BEV			550	550	550	550	550	550	550	550	550
FCV			550	550	550	550	550	550	550	550	550
Semis market ($m)			**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Gasoline			5,386	5,335	5,172	4,279	5,075	5,143	5,090	4,994	4,769
Diesel			879	855	712	534	524	463	387	306	223
48V/mild hybrid (gas)			91	300	513	668	991	1,262	1,497	1,816	2,171
HEV			448	539	617	602	822	979	1,122	1,262	1,403
PHEV			195	314	288	431	659	591	395	408	557
BEV			402	680	810	1,032	1,742	2,785	4,306	5,857	7,765
FCV			2	3	5	7	16	30	48	71	105
Total powertrain			**7,403**	**8,027**	**8,116**	**7,552**	**9,827**	**11,252**	**12,844**	**14,714**	**16,994**

Source: UBS estimates

Coronavirus tracker

Most companies have announced (or already implemented) plans for when they intend to restart production. We have summarised the major announcements over the past several weeks **(newest on top)**:

• **Audi** plant in Hungary resumed two-shift production on May 18

• **Tesla** received approval to resume production at Fremont plant on May 17

• **FCA** to return to almost full production at Melfi (Italy) plant from May 21

• **VW** indefinitely delaying restart of the US production that was previously set for May 03

• **PSA** plants in France to gradually re-start production from May 11 onwards

• **FCA**, Ford and GM are targeting to resume some US production on May 18

• **BMW** aims to resume production in Spartanburg and Goodwood on May 4; Dingolfing and San Luis Potosi on May 11; Munich, Regensburg, Oxford and Rosslyn on May 18

• **JLR** plans to resume production at its plants Solihull, England, and Nitra, Slovakia on May 10; UK Halewood plant to resume on June 8

• **Toyota** plants in the US are expected to resume work on May 11

• **Nissan** plans to restart production at its Barcelona factory on May 4

• **Daimler** plans to resume Tuscaloosa production on April 27

• **FCA** restarts production in Mexico (Van plant) on April 20 and in the US (Jeep Wrangler plant in Toledo) & Canada facilities on May 4 & 18

• **Bentley** said to extend production UK stoppage by 3 more weeks and plans to re-open on May 11

• **Hyundai** and Honda plan to restart production in Alabama on May 4

• **Subaru** resumes production in Indiana on May 11

• **Volkswagen** said to resume production at its factories in Zwickau (ID3 production plant), Bratislava and Slovakia on April 20 and in Germany (Wolfsburg, Emden and Hanover plants), Portugal, Spain and Russia on April 27

• **Dacia** will resume component and stamping operations in Romania on April 21, car production on May 4

• **Ford** plans to restart production at EU plants on May 4

Our view: Most plants have restarted across the globe. A restart will likely have to happen gradually because of potential supply chain bottlenecks, and it needs to be synchronised with a likely slow recovery in demand. In case of a bleak demand situation for several months, it is even more likely that governments step in with stimulus, i.e., a substantial recovery kicking in in the course of H2 would be a likely consequence in our view. However, we expect material double-digit decline rates in Europe and the US in the next few months.

EU said considering VAT exemption for EVs and other green stimulus

Bloomberg reported yesterday that the EU Commission is considering additional financial support for EVs in its green recovery plan. According to a draft seen by Bloomberg, the EU Commission is considering incentives for OEMs to produce and sell clean cars, investment in charging infrastructure, an EU-wide purchasing facility for EVs amounting to €20bn over the next 2 years, an automotive investment fund of €40-60bn to develop clean powertrains, and an exemption of EVs from VAT.

Our View: This sounds like a comprehensive plan that, in its entirety, could strongly accelerate the shift to EVs. Two caveats: (1) It is just a draft, and lawmaking in the EU is complex, as all proposals by the EU Commission need to be approved by EU Parliament and national governments; (2) the reported proposed measures, such as the VAT exemption, could interfere with national budgets and policies, and there is a risk of a pushback by several EU member states. Nonetheless, the proposed measures, as reported, suggest the EU is fully committed to making the COVID-19 recovery plan "green" across industries, including automotive. We continue to believe the EU car market is set to benefit the most from such stimulus measures, with Germany and France setting the pace. Germany is likely to be the first country to decide on potential (green) auto stimulus in early June, which will likely comprise financial incentives for the purchase of a new car, and be skewed towards lower-emission vehicles, but not exclusively for EVs and hybrids.

Q2 likely to mark the trough in y-o-y growth

The pace of deceleration that has been seen in the autos industry in reaction to the COVID-19 outbreak is unparalleled. The containment measures have led to most auto production in the US and Europe ceasing after some significant impact to production in Asia in Q1 that is still taking time to recover. Given the rapid pace of slow-down – we believe it is highly likely Q2 will mark the trough in terms of end demand for the analog semis industry and those with significant autos exposure as we should start seeing some production resumption during Q2 and back towards more normal levels in H2'20. Below we briefly assess some of the key leading indicators we look at and we feel are valuable leading indicators for the sector.

Figure 4: UBS leading indicators for Autos / Industrial semis

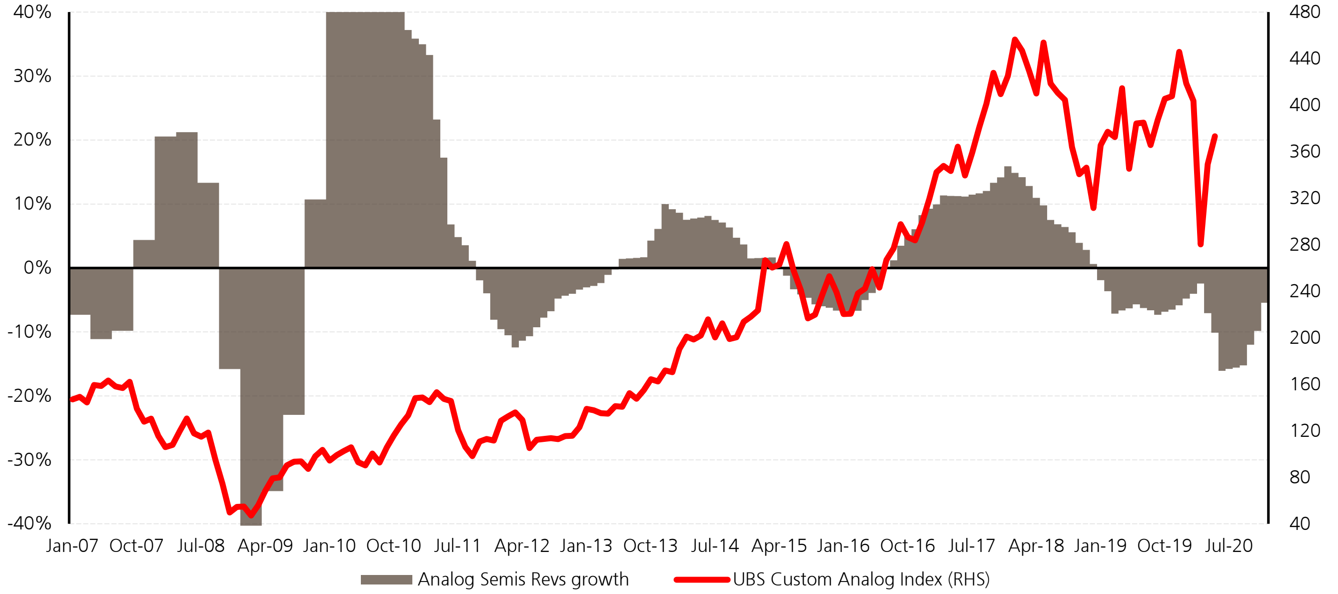
Indicator	Q1'19	Q2'19	Q3'19	Q4'19	Q1'20	Q2'20E	Q3'20E	Q4'20E	Commentary
1) Semis Revs gr. y/y %	-7%	-6%	-7%	-6%	-2%	-16%	-15%	-5%	Positive - Semis revs likely to get hurt by lockdowns but reorganisations of 2019 should ease
2) Semis vs OEM Revs gap	-2%	-4%	-9%	-4%	9%	22%	-3%	0%	Neutral - Semis are over-shipping in Q2'20 and slightly insulated from end demand but should normalise in Q3.
3) Inventory days - Semis	122	121	111	110	119				Negative - Inventory days are still high at semis and will likely mean it takes time before utilisation rates normalise.
4) Inventory days - OEMs	71	66	66	62	73				Neutral - Inventory days are elevated in autos but in-line with normal levels within industrial.
5) Autos production y-o-y	-5%	-8%	-3%	-4%	-25%				Positive - we now forecast -19% y-o-y autos production in 2020E (UBSe) from -10% y-o-y, previously

Source: UBS estimates

1) y-o-y growth likely to trough in Q2 and reaccelerate through 2021E

Possibly the most positive signal for the stocks is that we believe Q2 is highly likely to mark the trough in terms of y-o-y growth for the sector, before then starting to recover in H2'20. There is clearly still significant debate around the H2 recovery and the stocks do appear to be pricing much of this in having rallied already >30% from the trough towards the end of March but the inflection is still very much a positive data point in our view.

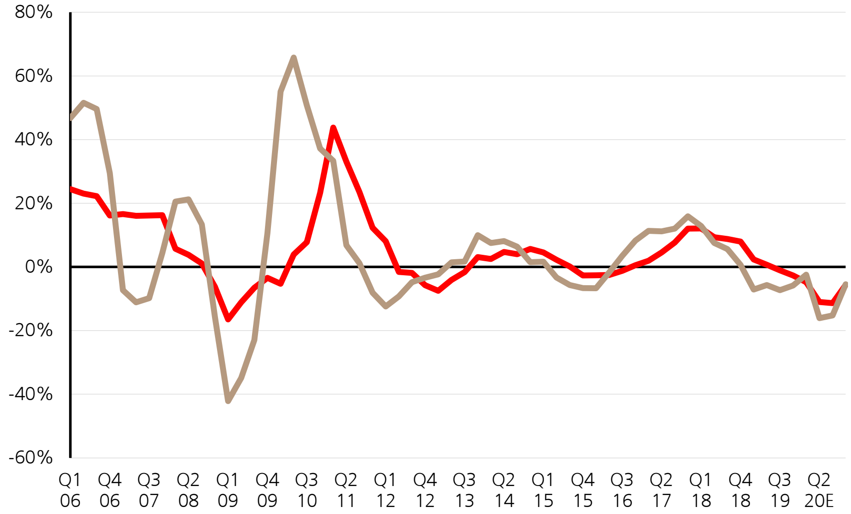
Figure 5: Analog semis revenue growth vs. stock performance



Source: UBS, Company data, Datastream

In many of our investor discussions we find many pointing back to the 08/09 Global Financial Crisis to show there is further downside risk to the sector given we reached >-40% y-o-y declines at that point in time while this crisis is only going to -15% on current estimates. That perception - whilst valid - we believe misses the point that the context between the two is very different and in particular how we have entered this COVID-19 crisis. Most importantly - the fact that 2007 and into early 2008 were actually quite good years for the industry and saw growth rates rise to >20%. As we entered this crisis - it is off the back of a year in which the industry saw already high-single digit revenue declines. If we look at 2-year rolling growth rates to try and adjust for this, we find that actually the impact is of a similar magnitude to 08/09 it is just that the inventory correction element of it already happened last year.

Figure 6: y-o-y growth in autos / industrial semis vs 2-year CAGR

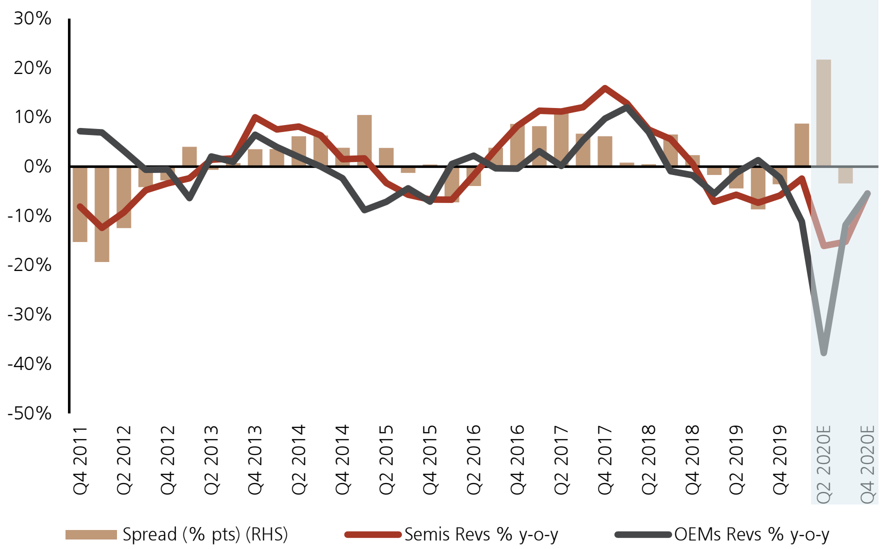


Source: UBS estimates, Company data

The question is already shifting towards how strong the recovery for the sector might be in 2021E - something that we will address more directly in the next section when we look at the bottom-up OEM forecasts for those that we track.

2) Semis vs. OEM gap analysis - some inventory build in Q1/Q2: Given the pace at which demand slowed down towards the end of Q1 for most OEMs both automotive and industrial and with the lockdown continuing into Q2 in most of Europe and the US - we are seeing some inventory build-up through the supply chain. This is not unexpected and is primarily a result of how the demand and supply shock to many OEM businesses and production sites has occurred. The positive in our view is that having spent most of 2019 destocking through the supply chain - there is scope for OEMs to accept (and potentially even desire) some level of inventory build of components during the lockdown in order to prepare for a potentially sharp recovery in demand. Positively - if we align our OEM and semis revenue forecasts we see semis under-shipping OEM consumption in Q3 and then tracking in-line with OEMs by Q4.

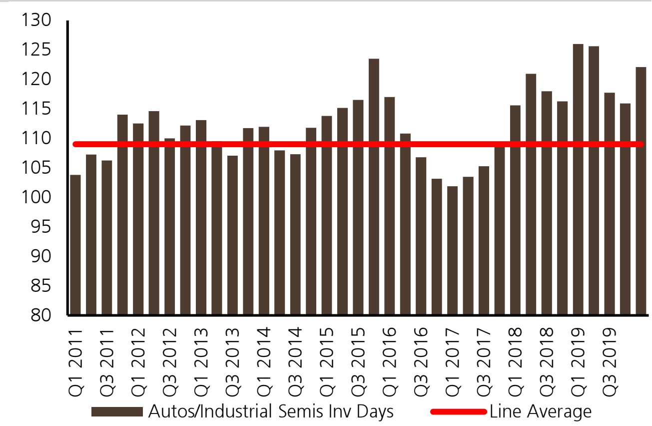
Figure 7: Semis revenue growth vs. OEM revenue growth



Source: UBS estimates, Company data

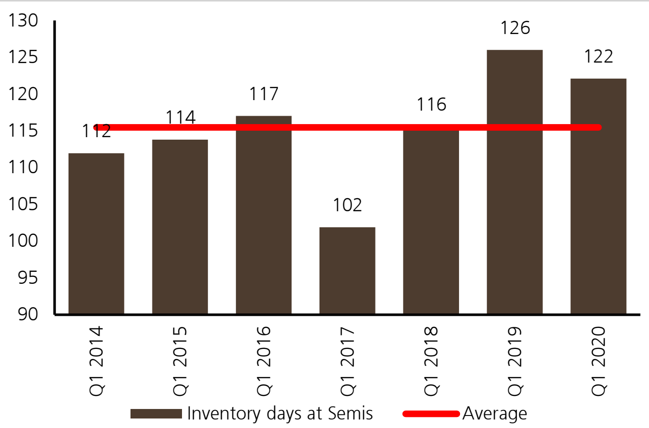
3) Semis inventory - normalisation will take longer: Through the end of 2018 and into 2019 we were in the midst of an inventory correction through the semis autos / industrial supply chain. Q1 did show some improvement on a y-o-y basis on inventory but it was still elevated compared to normal seasonal levels. This had been expected to have cleared through Q1/Q2 that we might start seeing some normalisation of utilisation rates into Q2. Clearly the correction due to COVID-19 is going to delay when we see a recovery (we now assume H1'21).

Figure 8: Autos / industrial semis inventory days



Source:

Figure 9: Q1 autos / industrial inventory days

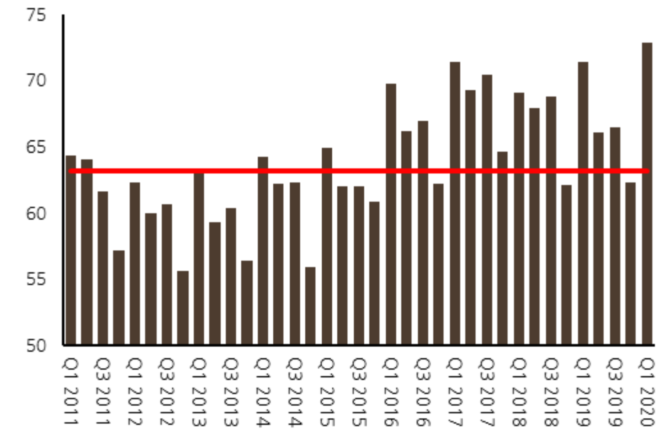


Source:

4) OEM Inventory - autos build but industrial managed: The demand shock and cessation of sales have not surprisingly seen an optically sharp increase in inventory within the auto supply chain. Given many OEMs and Tier 1's would have seen limited sales in the last 2-3 weeks of Q1 along with a rapid halt to production while raw material deliveries likely continued - we are not surprised to see some optical increase in inventory days. Inventory is now keenly focused on (as seen by the following corporate commentary) as an area of cash management but from a semis perspective we do not see the inventory build as a major headwind. This is primarily as mentioned due to the fact that most of 2019 saw inventory destocking and in absolute terms - inventory levels aren't significantly above what we would normally expect - if anything in industrial absolute inventory appears low - we try to illustrate the inventory situation in the charts below.

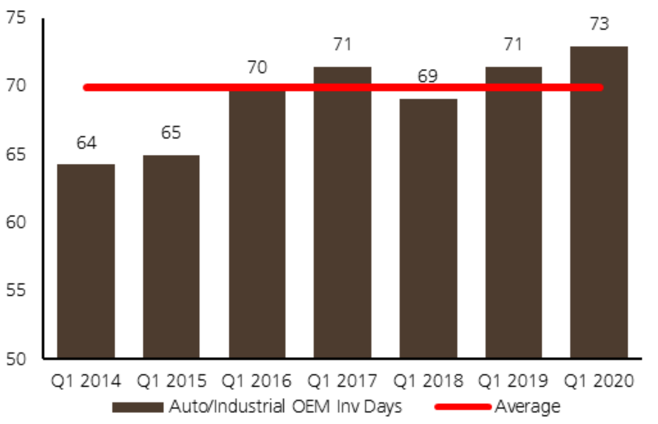
- **Overall autos / industrial inventory days:** On a combined basis - the inventory level appears slightly elevated but not overly so considering the magnitude of slow-down seen at the end of the quarter. We calculate inventory days of 73, up 1 day vs. Q1'19 although slightly above the normal 70 days level for Q1.

Figure 10: Autos / industrial inventory days



Source: UBS, Company data

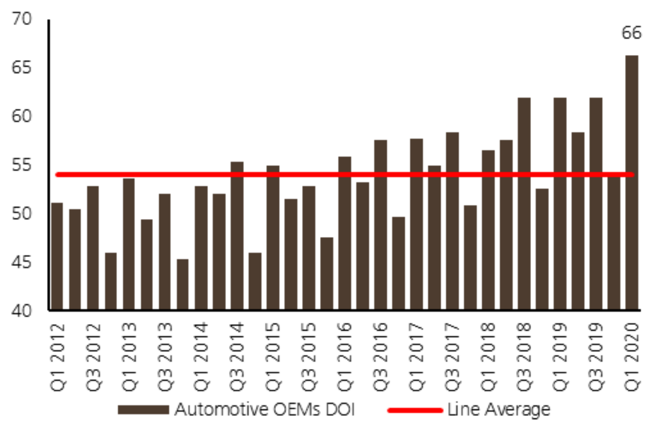
Figure 11: Q1 trend - autos / industrial inventory days



Source: UBS, Company data

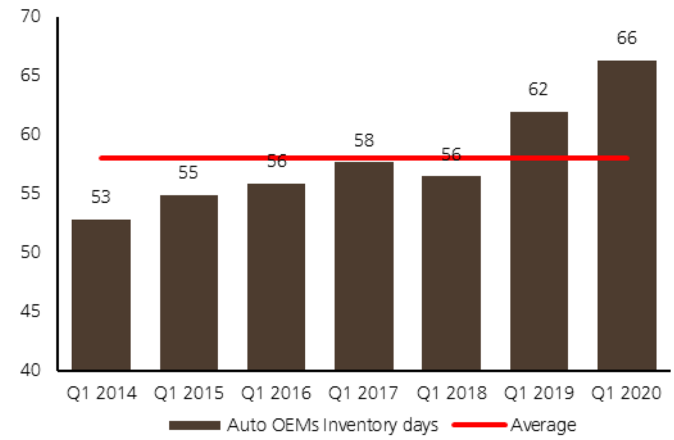
- **Automotive inventory days - step up not surprising:** As mentioned the slow-down in sales towards the end of the quarter (and hence impact on COGS) has led to a significant increase in inventory days in Q1 through the autos supply chain.

Figure 12: Auto Tier 1 / OEM inventory days



Source: UBS, Company data

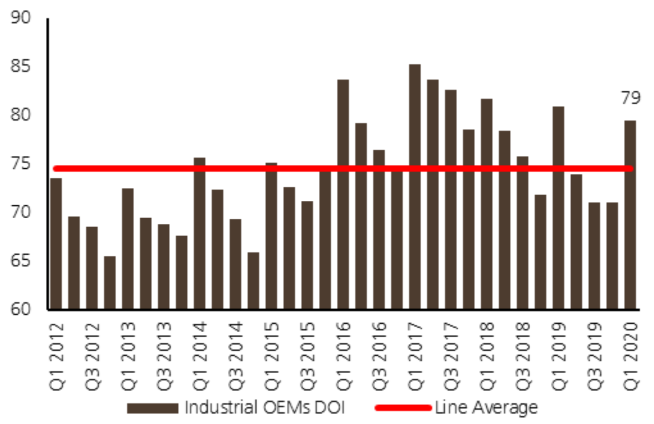
Figure 13: Q1 Auto Tier 1 / OEM inventory days



Source: UBS, Company data

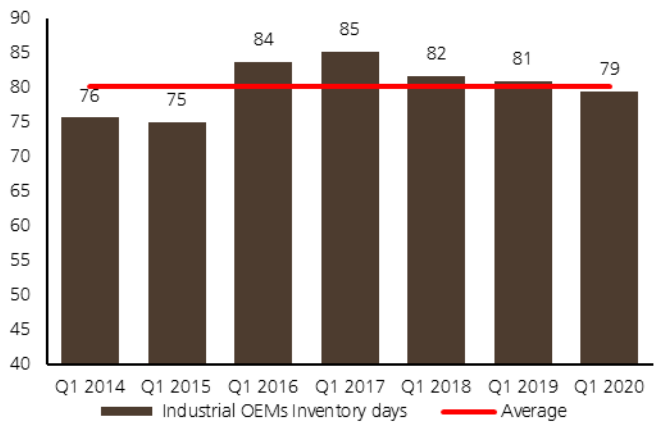
- **Industrial inventory days normal:** If we look at the inventory situation within industrial - even with some slow-down in demand towards the end of the quarter - the inventory situation is still in-line with levels normally expected in Q1. We believe the inventory situation in both Autos and Industrial will quickly worsen in Q2 as mentioned above we expect semis are over-shipping end demand, but that this will then again quickly correct when OEM demand starts to normalise in Q3.

Figure 14: Industrial OEM inventory days



Source: UBS, Company data

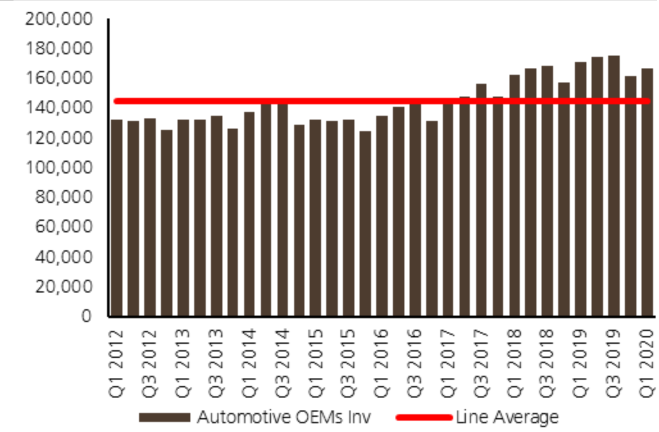
Figure 15: Q1 Industrial OEM inventories



Source: UBS, Company data

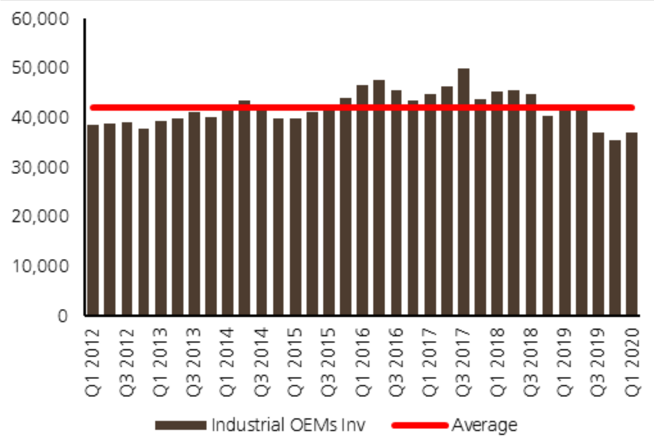
- **Absolute inventory levels leave less concern:** If we dig into the absolute inventory levels - to remove the impact of the sharp reduction in COGS towards the end of the quarter - this illustrates that COGS are tracking largely in-line with normal levels. Within automotive - we had seen inventory rise a lot in 2017/18 which was then starting to normalise. In industrial the inventory level has fallen in recent years although part of this is due to some disposals which are hard to adjust for.

Figure 16: Absolute automotive inventory level (US$m)



Source: UBS, Company data

Figure 17: Absolute industrial inventory level (US$m)



Source: UBS, Company data

We include below a summary of some of the inventory comments made by OEMs both in the automotive and industrial end markets post Q1. They highlight the emphasis being placed on managing inventory near-term to preserve cash and is why we expect Q2/Q3 will likely be challenging quarters for the industry.

Figure 18: Comments on inventory from Automotive OEMs/suppliers

Companies	Comments
BMW	1/ A key indicator for us in this will be monitoring our **inventories**. 2/ The first quarter also saw a seasonal increase in **inventories**, which was amplified by the closure of retail outlets. While the plants are ramping up production, we will focus on systematically reducing our **inventory** levels as soon as sale channels reopen. 3/ So why did **inventory** build up? Well, because we had a very, very good level of incoming orders in the first couple of weeks. So we were really running full steam on top. If you look at the value of our products, we had a very positive mix effect, X7 for the first time with a full year effect. So in Q1 2019, no X7, 8 series fully available. So this definitely didn't help. However, of course, clear focus is on reducing **inventory** level in order to reduce our working capital. 4/ On the **inventory** management, almost any plant currently produces cars for China. 5/ If we look as of 31st of March, where -- in which markets did we have **inventory**? Number one, U.S.; number two, U.K.; number three, China. 6/ And then in U.K. full stop and in the U.S., plus/minus 70% of the dealers closing, and this is why we had most of our **inv** in those 2 markets.
Continental	1/ In terms of **inventories**, elevated tire stocks from retail projects that started in March have been mitigated by production shutdowns, putting us in a position to have a lower year-on year **inventory** figures in Tires in Q2. 2/ Some **inventory** buildup at the OEM level may have occurred as well in Q1. 3/ There also was a slight raw material tailwind, but this was partially offset by **inventory** valuation effects. 4/ To start with the **inventory** buildup, we have seen it on 2 dimensions. One was just an overall **inventory** buildup of finished cars, which we observed in the U.S. I think there was a 5% **inventory** increase from February to March, which is probably something where we had a level of effects, which might -- and this is your following question, which might impact then the ramp up phase because this buildup in **inventories** at the ramp-up phase will probably be used. 5/ (…) we -- I mean we don't know one by one, but we suppose there was some **inventory** buildup specifically at electronic components. 6/ But we want to make sure that at the end of each month and basically (inaudible) each month and for you important at the end of each quarter, we achieve on the sales last -- of the last month of this quarter and the sales of the next month following the quarter, which is obviously for the **inventory** is important, that there, we are on the same level and the same quarters, which we have had before.
Daimler	1/ In terms of production, it follows a similar pattern as we see it on the cars and vans side, that we manage a balance between the demand and the production to not run out the **inventories**.
GM	1/ We also had finished goods **inventory** in transit of $2 billion, which we expect to liquidate during the same time period. 2/ Our **inventory** levels remain lean and well positioned as we came out of the strike. We ended April with 550,000 units of **inventory**. 3/ And John, as we think about coming back online here, we obviously have a close eye on dealer **inventory** by vehicle line. And all the geographies as well, not all of them are created equal, and we have different levels of **inventory** in different regions. So as we come back online, we will prioritize, to Mary's point, trucks as well as the specific terms and the mixes of the most profitable vehicles as well as geographies that are running right from an **inventory** standpoint. 4/ From a dealer **inventory** and sales perspective, I would say that you cannot paint the entire country with the same brush. In the geographies that are not the coasts, Brian, we're continuing to see strength in trucks and therefore, lower levels of **inventory**. 5/ I would say, Ryan, in addition to what I already said, the other data point I would give you is just coming out of the strike, as you pointed out, the dealers have done an exceptionally good job of selling from a low **inventory** base. They're selling pretty deep, and they learned to -- learned how to operate at a low **inventory** level.
PSA	1/ After closing its production sites in China, the group was very reactive in closing all its European plants in order to control its **inventories** and protect its cash. 2/ As a result, the level of **inventory** at the end of March was slightly below the level of last year in spite of the very low sales in March. 3/ But the question is what is the speed in which we ramp up because we definitely want to avoid building more **inventories** that's what we have. We will be helped by the fact that we entered the crisis with a huge order book. 4/ So it's difficult to say what will be the final working capital effect. And clearly, the payable -- among the 3 factors, payable **inventories** and receivable are the most volatile one in the coming 3 months. 5/ The top priority in the coming days and weeks is the restart of the production and to manage correctly the cash flow to avoid generating too many **inventories**. 6/ But on the short term, I think what is logical is to have a decrease in total **inventories**. So the level of production compared to the level of sales should be lower, which should not be a huge issue in the coming weeks and months.
Renault	1/ (...) global **inventories** stood at 660,000 units versus 656,000 units a year ago. 2/ Well, on the **inventory**, I think it looks maybe high, but versus other references, and, Denis, correct me if I'm wrong, we have a lot of orders, very strict orders, strong orders, which were supposed to be delivered in this 660,000 -- that could not be delivered at the end of the minute. So it looks high but a big portion of that is really orders which were about to be delivered and could not be delivered. So that's the first point I would say on the **inventory**.
Volkswagen	1/ In relation to **inventory**, we ended Q1 with a certain amount of overstock when comparing the balance sheet level of **inventory** at the end of Q1 versus the amount at the end of 2019. 2/ However, we need to be very carefully -- we need to very carefully balance ramping up production with **inventory** management. 3/ Certainly, one of the areas where we need to do probably even a little better than in the past is certainly on **inventory** management, but we have a clear focus, and I think in my elaborations earlier this afternoon, I made it very clear that we will continue to balance very carefully, deliveries and production. 4/ So from today's perspective, I don't think that the school book on proper **inventory** management needs to be rewritten. 5/ And in terms of money tied up, I would need to dig into the numbers a bit deeper. I think generally speaking, yes, we had a quite relevant build-up of **inventories**. 6/ But we will watch like hawks, the balance between production, **inventory** and sales and deliveries.

Source: Company conference call transcripts and Q1 20 press releases, UBS

Figure 18 (con't): Comments on inventory from industrial OEMs / Distributors

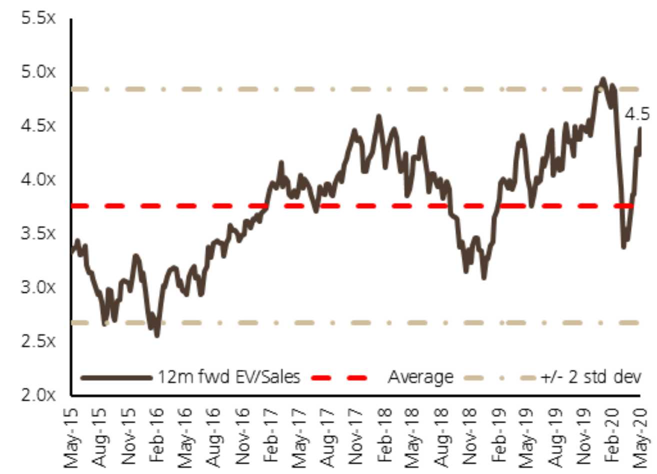
Companies	Comments
ABB	1/ On the **stocking** side, yes, I think we mentioned on the **stocking** side a little bit on the discrete automation side that we thought there were some increases on the **inventory**. That probably might be some of our partners that also wanted to secure their businesses. It's difficult to know exactly in the details what that has coming. We have also seen a small buildup in **inventory** within the group, but that is more related to these difficult trading conditions and the logistic issues that you are getting to move goods and people all around the world as we have said. But I don't think we see the **inventory** buildup among all our partners as the biggest issue. I think it's more the demand on the other side, which -- the end customer demand that is going to be challenged during the second quarter.
Aptiv	1/ As China's economic activity continues to improve, the recovery in vehicle production has been relatively slow as dealer **inventories** remain high and retail demand is slowly improving.
Arrow Electronics	1/ Through January, operations were relatively normal and undisturbed by COVID-19, although broader electronic component and IT demand were softening exiting the 2019 **inventory** correction and tariff-driven market slowdown. 2/ The portion of customers saying they had appropriate levels of **inventory** increased compared to last year. The portion of customers saying they had too much **inventory** remained higher than normal but decreased compared to last year. To-date, we have not faced significant challenges securing the parts our customers need when they need them. Nor do we see signs of hoarding or excess **inventory** accumulation. 3/ And you have to kind of remember that we've been in a 5-quarter decline already with what was the market slowdown prior to COVID hitting. And so customers were reducing their **inventory**. Now albeit, are they still reducing their **inventory**? Possibly. 4/ So when you have a drop like that of year-over-year sales, just be cautious, that book-to-bill is less meaningful because customers are positioning their **inventories** to match what their MRP requirements are.
Atlas Copco	1/ I would also say that we also maintain 50% of the capacity in our distribution centers. So everything that was available from **inventory**, we could shift to customers as well.
Avnet	1/ The same goes with **inventory**. Our global teams focus daily on managing **inventory**, and we have various contractual arrangements with suppliers should our **inventories** become aged, obsolete or affected by changes in market prices. 2/ Going forward, we want to remind you that we have a countercyclical balance sheet, meaning that when revenues decline, we collect receivables and reduce **inventory** purchases, both of which contribute to positive cash flow. 3/ We're also very cautious to be sure that all the **inventory** coming in is going to go back out. 4/ Well, we think Asia will improve **inventory** velocity. I think the bottom line, what we want to be able to achieve in June, is positive cash flow.
Emerson Electric	1/ Trade working capital ended higher as a percentage of sales as ending **inventory** increased due to the sharp drop in demand in March. 2/ But as we liquidate the balance sheet in the second half of the year, the toughest of it will be **inventory** because inventory -- the volume has dropped dramatically right now.
GE	1/ And this is where lean is particularly relevant from daily management through traditional Kanban systems, which help reset **inventory** levels; to new problem-solving tools we're rolling out across GE. 2/ Moreover, I see in our response to COVID-19 signs of how we're moving faster to change GE for the good: more lean work to help reduce **inventories** in the face of demand challenges in Aviation, travel restrictions spurring on the use of remote digital technology to complete fieldwork in Renewables and more capital discipline across the board. 3/ Third, we increased **inventory** to support an expected second and third quarter volume ramp in Onshore Wind and shop output decline in Aviation. 4/ With respect to working capital, I think our primary challenge is really **inventory** at Aviation, right? We came this year knowing we were going to have to adjust to a different schedule with the MAX, chasing the step-up at Airbus with the 320 NEO while dealing with a good bit of past due on the commercial side, both OE and aftermarket, while having pretty good Military demand to contend with. That all gets reset here. And 1 of the real pressures we saw from a cash flow perspective was in **inventory** at Aviation in the quarter. (…) But the team, as you can imagine, is keenly focused on using some of the lean tools, working with our supply base, to make sure that we not only take the cost out of the business, but bring those **inventory** levels down in light of current demand.
Honeywell Intl	1/ Therefore, we condensed our sales, **inventory** and operations planning process from a traditional monthly cycle to a weekly cycle. Combining this with sales leading indicators, we are sensing demand changes and realigning our **inventory** and production schedules faster than ever. 2/ And we absolutely are going to do all the things Darius described on working capital, including readjusting our supply plans to these new realities from the standpoint of our **inventory** plan, and that's going on as we speak. 3/ I mean the 2 biggest areas we're focusing on, as you can imagine, is **inventory** and receivables.
Legrand	1/ William, so to answer your first question, we have seen, in a number of geographies, some destocking, even though you know that it's always difficult for us to precisely assess because we don't always and everywhere have the exact size of **inventory** of our distributors. 2/ Our **inventory** buildup and the Q1 performance was a bit negatively impacted by some destocking, which again is not a surprise for us in the context of declining sales and of a tough environment. 3/ This being said, beyond **inventory** changes at our distributor level, what I have to also indicate is that our distributors are acting and reacting very professionally in this crisis.
Philips	1/ We have a strong grip on performance management and are taking actions to manage **inventory** and manufacturing capacity accordingly. 2/ We -- on top of that, we also curbed our production because if on top of this we built a lot of **inventory**, then from a cash position, we would be in strike. So we basically cut back production so that we could keep our **inventories** in check and that, of course, doesn't help the P&L at that time.
Schneider Electric	1/ Very difficult to value what it can be but, as we were seeing news coming from Europe, some people building **inventory** in case there will be some disruption on the supply chain. 2/ And I do expect that, if the top line is going down significantly, there will be a reduction of **inventory** ultimately, and there will be also reduction in the receivables. 3/ So the first consequence of that can be that the **inventory** reduction can take more time. 4/ So we have to ensure that we have the **inventory** and the availability to do that. So I would say, maybe in the next phase, we'll have some impacts due to the specificity of the crisis that will not fully align, I will say, the evolution of **inventory** with the top line, but ultimately once we have absorbed that, we are in the same position as in 2009, and reduced sales will mean a positive contribution coming from the working capital.

Source: Company conference call transcripts and Q1 20 press releases, UBS

VALUATION

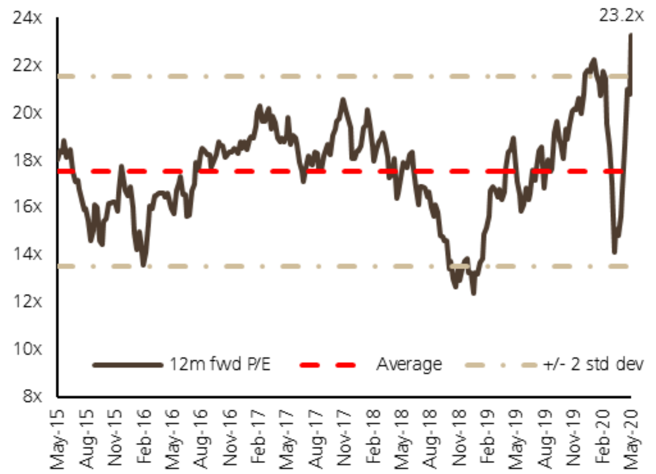
return ↑

Figure 19: Autos/Industrial semis Forward EV/Sales



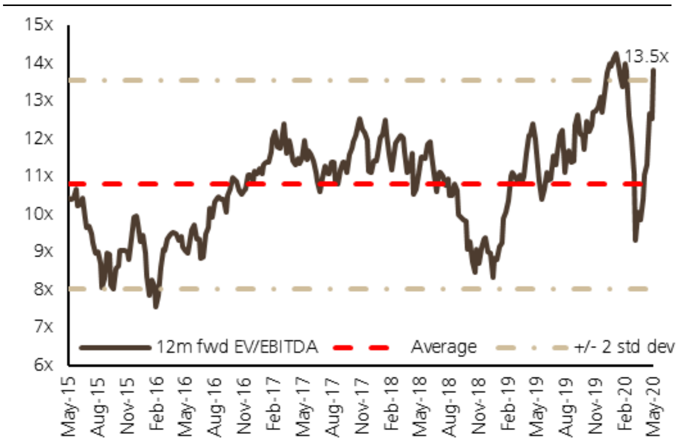
Source: UBS, DataStream

Figure 20: Autos/Industrial semis Forward P/E



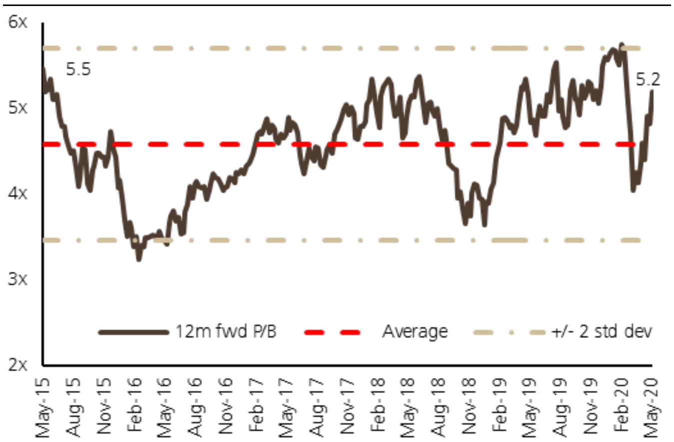
Source: UBS, DataStream

Figure 21: Autos/Industrial semis Forward EV/EBITDA



Source: UBS, DataStream

Figure 22: Autos/Industrial semis Forward P/BV



Source: UBS, DataStream

Figure 23: Analog Semis Global Valuation Multiples (Priced on 20 May 2020)

		Price	Price	Market	EV/Sales		EV/EBIT		Price/Earnings		FCF Yield	
Company	Rating	(lc)	Target (lc)	Cap ($m)	2020E	2021E	2020E	2021E	2020E	2021E	2020E	2021E
Analog Devices	Not Covered	114.57	-	42,210	8.8	8.1	23.3	20.1	26.4	22.7	4.0%	3.9%
Infineon	Buy	19.37	23.50	26,498	3.2	2.8	24.0	15.3	28.5	16.3	0.8%	3.6%
Maxim Integrated	Not Covered	56.98	-	15,192	6.8	6.6	21.2	20.1	26.2	24.2	4.7%	5.0%
Microchip Technology	Not Covered	91.30	-	21,870	6.0	5.3	16.6	14.4	16.5	14.5	6.3%	6.9%
Melexis	Neutral	55.60	54.70	2,469	4.8	4.0	39.7	20.5	47.5	24.7	2.1%	5.9%
NXP	Not Covered	103.60	-	28,908	4.5	4.0	20.0	14.3	22.4	15.2	4.2%	5.7%
ON Semi	Not Covered	16.27	-	6,671	1.9	1.7	24.3	12.6	32.3	12.8	6.0%	8.9%
Renesas Electronics	Buy	572	800	9,094	2.4	2.1	nm	31.0	66.4	24.6	11.8%	13.8%
Rohm	Buy	7,250	8,600	6,702	1.1	1.0	16.4	10.1	35.2	22.8	5.5%	4.4%
STMicroelectronics	Buy	22.48	23.00	21,935	2.4	2.0	29.2	13.8	37.7	18.5	2.0%	3.6%
TE Connectivity	Not Covered	78.35	-	25,844	2.4	2.3	17.4	13.9	19.5	15.8	5.5%	6.3%
Texas Instruments	Neutral	117.48	111.00	109,926	8.9	6.2	25.9	14.0	31.3	16.9	3.3%	5.8%
Analog Semis				*Mean*	4.4	3.8	23.5	16.7	32.5	19.1	4.7%	6.1%
				Median	3.9	3.4	23.3	14.4	29.9	17.7	4.4%	5.8%

Source: UBS estimates, IBES consensus used for non-covered stocks

Figure 24: Recent commentary from major Analog Semis

Company	Date	Current Qtr	Next Qtr guide	Comments				
				Inventories	Autos trend H2/FY	Industrials trend H2/FY	Orders book-to-bill	General comments
Texas Instruments	21-Apr	-1% q/q, -7% y/y	-2% q/q and -11% y/y/ (mid-point)	Inventory days were up c1 day y/y to c145 and up c1.5 days q/q, sequentially, while distribution inventory	(…) even though in the near term, people will see SAR no. come down, this sec. trend on semis gr. inside of auto is going to make it a great market to be in for the l-t.	But I just think l-t, you look at ind. products, ind. equipment (…) this sec. trend on semis gr. inside of auto is going to make it a great market to be in for the long term.	NA	For the 2nd quarter we expect TI Revenues in the range of $2.61bn-$3.19bn and EPS to be in the range of $0.64-$1.04.
STMicro	22-Apr	-19% q/q, +7.5% y/y	-10% q/q and -8% y/y/	Inventory days up to c115 days (up c24 days q/q) but down c11 days y/y.	(…) the auto to be down between 25% to 15% in terms of car production, which means a range between 67m and 77m units light vehicles.	The dynamics in the qtr were mixed, with some application already showing signs of demand slowdown, appliance, lighting; while orders, such as health care, as could be exp. (…)	NA	On Q2'20, at the midpoint of our guidance, we expect net Revenues in the 2nd quarter to be ab. $2bn, leading to a GM of about 34.6%, that incl. ab. 400bps of unsaturated charges.
NXP	27-Apr	-12% q/q, -3.5% y/y	-11% q/q and -19% y/y	DOI was 113 days, an incr. of 11 days seq. as Rev levels decl. We cont. to closely manage our distr. channel with inventory in the channel at 2.4 months, definitely within our l-t targets.	(...) automotive is expected to be down about 30% versus quarter 2 2019 and down in the high 20% range versus quarter 1 2020.	(...) industrial and IoT is expected to be up low single digits versus quarter 2 '19 and up mid-single digits versus quarter 1 2020.	NA	(...) our short-term outlook more uncertain, we do continue to execute consistently to our long-term strategy, deeply engaged with a sharp focus on enabling our customers' success, albeit from a virtual distance.
Maxim	28-Apr	+2% q/q, +4% y/y	-9% up q/q and -8% y/y	Q3 inventory days ended at 106 down 3 days from Q2 and inventory dollars were down 1% from the prior quarter. Days of inventory in the channel remained similar to the prior quarter and were well below our target of 60 days.	So we are getting a fairly sign. benefit in the June qtr assoc. with mix with lower auto and lower cons. from a mix perspective. That's providing tailwinds on the GM.	In the June qtr, we exp. Ind. to be up seq., prim. driven by expedited med products to help our cust. meet a surge in demand. Ind. is exp. to be up from the same qtr last yr.	NA	We forecast fiscal Q4 Revs to be b. $480m and $540m, down 9% from the prior qtr and down 8% y-o-y at the midpoint. Our bgn fiscal Q4 backlog was $509m, almost eq. to the midpoint of our Rev guid. range.
Infineon	5-May	+4% q/q, 0% y/y	-4% q/q and -7% y/y	DOI stood at 120 days (i.e., down 8 days sequentially and down 4 days y/y).	In general, content growth continues to be a stronger driver of automotive semiconductor than car units.	For ind. drives, we exp. the impact to be less severe, starting from an already red. level.	Our book-to-bill ratio stood at 0.9 for the March quarter.	For our hitherto exist. scope business, it is incl. Cypress and based on an assumed dollar ex rate of $1.1 to the EUR, we now exp. to gen. total Revs of ar. EUR 70.6bn in the 2020 FY.
Microchip	7-May	+3% q/q, 0% y/y	-6% q/q and -6% y/y	We had 122 days of inv at the end of the March qtr, down 7 days from the prior quarter's level. Inv of our dist. in the Mar qtr were at 29 days comp. to 28 days at the end of Dec.	And on the demand side of it, our customers' factories shut down, the worst being in the automotive business where, I think, you guys keep track of star data.	We believe we have the new prod. mom. and cust. engagement to cont. to gain even more sh. in '20 as we further build the best perf. microcontroller franchise in the ind.	NA	We exp. non-GAAP operating profit to be between 35.2% and 36.8% of sales, and we expect our non-GAAP EPS to be between $1.25 per share to $1.45 per share.
On Semi	11-May	-9% q/q, -8% y/y	-8% q/q and -12% y/y	At the end of the 1st qtr, DOI were 131 days, up by 8 days as comp. to 123 in the 4th qtr of 2019. The incr. in DOI was driven primarily by a lower exp. Revs. Distribution inv incr. slightly in terms of weeks of inv due to lower resales. In terms of dollars, distribution inv decl. q-o-q.	In automotive, we expect the key secular trends such as ADAS, vehicle electrification and fuel efficiency will continue along a steep upward trajectory.	In Industrial, we expect to see acceleration in factory and warehouse automation, robotics, energy efficiency and personal medical devices.	NA	As is the case with most of our peers, our results for the 1st qtr of 2020, and outlook for the 2nd qtr have been meaningfully impacted by COVID-19. Although our near-term results have been impacted by the pandemic, we believe that l-t drivers of our business remain intact.

Source: Company results, call transcripts; Note: Implied from the midpoint guidance.

Valuation Method and Risk Statement

The upside risks to the semiconductor sector include stronger end demand from OEMs and tightness of supply due to the financial distress of competitors. Downside risks include macro-economic factors, over-capacity in times of peaking demand and poor yields. The semiconductor sector is high cyclical and vulnerable to sudden shifts in customer sentiment while many companies also have high cost bases meaning they can go loss-making in the downturn.

Infineon is a top 10 global semiconductor company with exposure to auto, industrial and chipcard semiconductors and hence, in spite of its broad portfolio, the company is exposed to fluctuations of the semiconductor cycle. The company is also exposed to overall autos production volumes and the mix towards hybrid and electric vehicles (which have higher semiconductor content). There are also risks of disruptions with new forthcoming technologies such as silicon carbide. Infineon also has ongoing litigation related to the Qimonda bankruptcy that could be a negative. The company is also exposed to fluctuations in the USD:EUR exchange rate with a strong USD positive for the business. We value Infineon using a DCF methodology with a WACC of 9% and a terminal growth rate of 2%.

Melexis: There are a number of company specific risks facing Melexis including 1) Customer concentration with its largest customer being 16% of sales, 2) Significant dependence on a single product family with magnetic sensor accounting for 56% of Group revenues, 3) Risk of disruption if OEMs were to change to a different magnetic sensor technology. More generally the business is exposed to fluctuations in both the semiconductor inventory cycle and underlying demand for automotive vehicles in particular. The company is also exposed to the pricing and competitive risk in key markets given it operates in attractive growth markets. We value Melexis using a DCF based on a WACC of 9% and g of 2%.

Texas Instruments: Our valuation is based on an EV/FCF multiple methodology. Texas Instruments faces a variety of risks, including rapidly changing technology, intense competition, high required capital investments, pricing pressure, and cyclical end-market demand. Other risks include company's ability to grow revenue to increase utilization of its newly acquired capacity and ability to successfully integrate National Semiconductor operations.

STMicro: Risk factors include GDP growth rates, continuing weakening of US$/EURO exchange rate, technology product life cycles, capacity growth, demand and supply and utilisation rates which contribute to general semiconductor growth. STMicro's biggest medium term risk is centred on being able to deliver new image sensing products into smartphones. Our valuation for STMicro is based on a DCF methodology with a WACC of 9% and a terminal growth rate of 2%.

Renesas: Our price target is based on EV/EBITDA. Potential risks include: 1) a rapid slowdown in the US economy; 2) intensification of competition in the MCU market due to continued new entrants; and 3) a need for further restructuring in the absence of prospects for growth in system LSI sales.

Rohm: Our PT is based on PER. Risk factors include a sales slowdown due to weakness in semiconductor demand alongside a slowdown in the macro economy, a loss of share or price declines as a result of stiffer competition, profit erosion from the strong yen, and deterioration in competitiveness. Also production declines for autos, smartphones, game equipment and PCs.

Required Disclosures

This report has been prepared by UBS AG London Branch, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS.

For information on the ways in which UBS manages conflicts and maintains independence of its research product; historical performance information; certain additional disclosures concerning UBS research recommendations; and terms and conditions for certain third party data used in research report, please visit www.ubs.com/disclosures. The figures contained in performance charts refer to the past; past performance is not a reliable indicator of future results. Additional information will be made available upon request. UBS Securities Co. Limited is licensed to conduct securities investment consultancy businesses by the China Securities Regulatory Commission. UBS acts or may act as principal in the debt securities (or in related derivatives) that may be the subject of this report. This recommendation was finalized on: 21 May 2020 07:23 PM GMT. UBS has designated certain Research department members as Derivatives Research Analysts where those department members publish research principally on the analysis of the price or market for a derivative, and provide information reasonably sufficient upon which to base a decision to enter into a derivatives transaction. Where Derivatives Research Analysts co-author research reports with Equity Research Analysts or Economists, the Derivatives Research Analyst is responsible for the derivatives investment views, forecasts, and/or recommendations.

Analyst Certification: Each research analyst primarily responsible for the content of this research report, in whole or in part, certifies that with respect to each security or issuer that the analyst covered in this report: (1) all of the views expressed accurately reflect his or her personal views about those securities or issuers and were prepared in an independent manner, including with respect to UBS, and (2) no part of his or her compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by that research analyst in the research report.

UBS Investment Research: Global Equity Rating Definitions

12-Month Rating	**Definition**	**Coverage**[1]	**IB Services**[2]
Buy	FSR is > 6% above the MRA.	48%	32%
Neutral	FSR is between -6% and 6% of the MRA.	40%	28%
Sell	FSR is > 6% below the MRA.	13%	20%
Short-Term Rating	**Definition**	**Coverage**[3]	**IB Services**[4]
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%

Source: UBS. Rating allocations are as of 31 March 2020.
1:Percentage of companies under coverage globally within the 12-month rating category.
2:Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.
3:Percentage of companies under coverage globally within the Short-Term rating category.
4:Percentage of companies within the Short-Term rating category for which investment banking (IB) services were provided within the past 12 months.

KEY DEFINITIONS:Forecast Stock Return (FSR) is defined as expected percentage price appreciation plus gross dividend yield over the next 12 months. In some cases, this yield may be based on accrued dividends. **Market Return Assumption (MRA)** is defined as the one-year local market interest rate plus 5% (a proxy for, and not a forecast of, the equity risk premium). **Under Review (UR)** Stocks may be flagged as UR by the analyst, indicating that the stock's price target and/or rating are subject to possible change in the near term, usually in response to an event that may affect the investment case or valuation. **Short-Term Ratings** reflect the expected near-term (up to three months) performance of the stock and do not reflect any change in the fundamental view or investment case. **Equity Price Targets** have an investment horizon of 12 months.

EXCEPTIONS AND SPECIAL CASES:UK and European Investment Fund ratings and definitions are: Buy: Positive on factors such as structure, management, performance record, discount; **Neutral:** Neutral on factors such as structure, management, performance record, discount; **Sell:** Negative on factors such as structure, management, performance record, discount. **Core Banding Exceptions (CBE):** Exceptions to the standard +/-6% bands may be granted by the Investment Review Committee (IRC). Factors considered by the IRC include the stock's volatility and the credit spread of the respective company's debt. As a result, stocks deemed to be very high or low risk may be subject to higher or lower bands as they relate to the rating. When such exceptions apply, they will be identified in the Company Disclosures table in the relevant research piece.

Research analysts contributing to this report who are employed by any non-US affiliate of UBS Securities LLC are not registered/qualified as research analysts with FINRA. Such analysts may not be associated persons of UBS Securities LLC and therefore are not subject to the FINRA restrictions on communications with a subject company, public appearances, and trading securities held by a research analyst account. The name of each affiliate and analyst employed by that affiliate contributing to this report, if any, follows.

UBS AG London Branch: David Mulholland, CFA; Francois-Xavier Bouvignies. **UBS Securities LLC:** Timothy Arcuri; Bill Lu. **UBS AG Hong Kong Branch:** Nicolas Gaudois. **UBS Securities Japan Co., Ltd.:** Kenji Yasui; Shingo Hirata, CFA. **UBS AG:** Patrick Hummel, CFA. **UBS Securities France S.A.:** David Lesne.

Company Disclosures

Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
Infineon Technologies AG[18]	IFXGn.DE	Buy	N/A	€19.37	20 May 2020
Melexis NV	MLXS.BR	Neutral	N/A	€55.60	20 May 2020
Renesas Electronics	6723.T	Buy	N/A	¥574	21 May 2020
Rohm	6963.T	Buy	N/A	¥7,300	21 May 2020
STMicroelectronics[5, 16, 18]	STM.PA	Buy	N/A	€22.48	20 May 2020
Texas Instruments Inc[16]	TXN.O	Neutral	N/A	US$117.48	20 May 2020

Source: UBS. All prices as of local market close.
Ratings in this table are the most current published ratings prior to this report. They may be more recent than the stock pricing date

5. UBS AG, its affiliates or subsidiaries expect to receive or intend to seek compensation for investment banking services from this company/entity within the next three months.
16. UBS Securities LLC makes a market in the securities and/or ADRs of this company.
18. UBS AG London branch or affiliates acts as liquidity provider or market maker in the financial instruments of this company.

Unless otherwise indicated, please refer to the Valuation and Risk sections within the body of this report. For a complete set of disclosure statements associated with the companies discussed in this report, including information on valuation and risk, please contact UBS Securities LLC, 1285 Avenue of Americas, New York, NY 10019, USA, Attention: Investment Research.

Company profile and fee and risk statement under the Japanese Financial Instruments & Exchange Law

Company Name etc: UBS Securities Japan Co., Ltd., Financial Instruments & Exchange Firm, Kanto Local Financial Bureau (Kinsho) No.2633

Associated Memberships: Japan Securities Dealers' Association, the Financial Futures Association of Japan, and Type II Financial Instruments Firms Association and Japan Investment Advisers Association

UBS Securities Japan Co., Ltd. will receive a brokerage fee (excluding tax) from clients of Wealth Management calculated by multiplying the executed amount by 1.00% at maximum (excluding tax) for trading domestic stocks; and by 1.25% at maximum (excluding tax) for trading foreign stocks. However, in the case of trading other than the auction market trading such as OTC trading and Tostnet trading, a higher fee may be charged based on an individual agreement with a client. The method of fee calculation is not explained here because fee varies depending on the market condition and the content of trading, etc. From the clients of the Investment Bank, UBS Securities Japan Co., Ltd. will receive a brokerage fee based on an individual contract and no standard upper limit or calculating method. For the trading of domestic stocks, consumption tax is added to the fee. For the trading of foreign stock, fee on the foreign stock exchange or foreign tax may be charged in addition to the domestic fee and tax. Those amounts may vary depending on the jurisdiction. There is a risk that a loss may occur due to a change in the price of the stock in the case of trading stocks, and that a loss may occur due to the exchange rate in the case of trading foreign stocks. There is a risk that a loss may occur due to a change in the price or performance of the properties in the portfolio in the case of trading REITs.

UBS Securities Japan Co., Ltd. will only receive the purchasing amounts for trading unlisted bonds (JGBs, municipals, government guaranteed bonds, corporate bonds) when UBS Securities Japan Co., Ltd. is the counterparty. There is a risk that a loss may occur due to a change in the price of the bond caused by the fluctuations in the interest rates, and that a loss may occur due to the exchange rate in the case of trading foreign bonds.

The Disclaimer relevant to Global Wealth Management clients follows the Global Disclaimer.

Global Disclaimer

This document has been prepared by UBS AG London Branch, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS.

This Document is provided solely to recipients who are expressly authorized by UBS to receive it. If you are not so authorized you must immediately destroy the Document.

Global Research is provided to our clients through UBS Neo, and in certain instances, UBS.com and any other system or distribution method specifically identified in one or more communications distributed through UBS Neo or UBS.com (each a system) as an approved means for distributing Global Research. It may also be made available through third party vendors and distributed by UBS and/or third parties via e-mail or alternative electronic means. The level and types of services provided by Global Research to a client may vary depending upon various factors such as a client's individual preferences as to the frequency and manner of receiving communications, a client's risk profile and investment focus and perspective (e.g., market wide, sector specific, long-term, short-term, etc.), the size and scope of the overall client relationship with UBS and legal and regulatory constraints.

All Global Research is available on UBS Neo. Please contact your UBS sales representative if you wish to discuss your access to UBS Neo.

When you receive Global Research through a system, your access and/or use of such Global Research is subject to this Global Research Disclaimer and to the UBS Neo Platform Use Agreement (the "Neo Terms") together with any other relevant terms of use governing the applicable System.

When you receive Global Research via a third party vendor, e-mail or other electronic means, you agree that use shall be subject to this Global Research Disclaimer, the Neo Terms and where applicable the UBS Investment Bank terms of business (https://www.ubs.com/global/en/investment-bank/regulatory.html) and to UBS's Terms of Use/Disclaimer (http://www.ubs.com/global/en/legalinfo2/disclaimer.html). In addition, you consent to UBS processing your personal data and using cookies in accordance with our Privacy Statement (http://www.ubs.com/global/en/legalinfo2/privacy.html) and cookie notice (http://www.ubs.com/global/en/homepage/cookies/cookie-management.html).

If you receive Global Research, whether through a System or by any other means, you agree that you shall not copy, revise, amend, create a derivative work, provide to any third party, or in any way commercially exploit any UBS research provided via Global Research or otherwise, and that you shall not extract data from any research or estimates provided to you via Global Research or otherwise, without the prior written consent of UBS.

This document is for distribution only as may be permitted by law. It is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or would subject UBS to any registration or licensing requirement within such jurisdiction.

This document is a general communication and is educational in nature; it is not an advertisement nor is it a solicitation or an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Nothing in this document constitutes a representation that any investment strategy or recommendation is suitable or appropriate to an investor's individual circumstances or otherwise constitutes a personal recommendation. By providing this document, none of UBS or its representatives has any responsibility or authority to provide or have provided investment advice in a fiduciary capacity or otherwise. Investments involve risks, and investors should exercise prudence and their own judgment in making their investment decisions. None of UBS or its representatives is suggesting that the recipient or any other person take a specific course of action or any action at all. By receiving this document, the recipient acknowledges and agrees with the intended purpose described above and further disclaims any expectation or belief that the information constitutes investment advice to the recipient or otherwise purports to meet the investment objectives of the recipient. The financial instruments described in the document may not be eligible for sale in all jurisdictions or to certain categories of investors.

Options, structured derivative products and futures (including OTC derivatives) are not suitable for all investors. Trading in these instruments is considered risky and may be appropriate only for sophisticated investors. Prior to buying or selling an option, and for the complete risks relating to options, you must receive a copy of "The Characteristics and Risks of Standardized Options." You may read the document at http://www.theocc.com/publications/risks/riskchap1.jsp or ask your salesperson for a copy. Various theoretical explanations of the risks associated with these instruments have been published. Supporting documentation for any claims, comparisons, recommendations, statistics or other technical data will be supplied upon request. Past performance is not necessarily indicative of future results. Transaction costs may be significant in option strategies calling for multiple purchases and sales of options, such as spreads and straddles. Because of the importance of tax considerations to many options transactions, the investor considering options should consult with his/her tax advisor as to how taxes affect the outcome of contemplated options transactions.

Mortgage and asset-backed securities may involve a high degree of risk and may be highly volatile in response to fluctuations in interest rates or other market conditions. Foreign currency rates of exchange may adversely affect the value, price or income of any security or related instrument referred to in the document. For investment advice, trade execution or other enquiries, clients should contact their local sales representative.

The value of any investment or income may go down as well as up, and investors may not get back the full (or any) amount invested. Past performance is not necessarily a guide to future performance. Neither UBS nor any of its directors, employees or agents accepts any liability for any loss (including investment loss) or damage arising out of the use of all or any of the Information.

Prior to making any investment or financial decisions, any recipient of this document or the information should take steps to understand the risk and return of the investment and seek individualized advice from his or her personal financial, legal, tax and other professional advisors that takes into account all the particular facts and circumstances of his or her investment objectives.

Any prices stated in this document are for information purposes only and do not represent valuations for individual securities or other financial instruments. There is no representation that any transaction can or could have been effected at those prices, and any prices do not necessarily reflect UBS's internal books and records or theoretical model-based valuations and may be based on certain assumptions. Different assumptions by UBS or any other source may yield substantially different results.

No representation or warranty, either expressed or implied, is provided in relation to the accuracy, completeness or reliability of the information contained in any materials to which this document relates (the "Information"), except with respect to Information concerning UBS. The Information is not intended to be a complete statement or summary of the securities, markets or developments referred to in the document. UBS does not undertake to update or keep current the Information. Any opinions expressed in this document may change without notice and may differ or be contrary to opinions expressed by other business areas or groups, personnel or other representative of UBS. Any statements contained in this report attributed to a third party represent UBS's interpretation of the data, information and/or opinions provided by that third party either publicly or through a subscription service, and such use and interpretation have not been reviewed by the third party. In no circumstances may this document or any of the Information (including any forecast, value, index or other calculated amount ("Values")) be used for any of the following purposes:

(i) valuation or accounting purposes;

(ii) to determine the amounts due or payable, the price or the value of any financial instrument or financial contract; or

(iii) to measure the performance of any financial instrument including, without limitation, for the purpose of tracking the return or performance of any Value or of defining the asset allocation of portfolio or of computing performance fees.

By receiving this document and the Information you will be deemed to represent and warrant to UBS that you will not use this document or any of the Information for any of the above purposes or otherwise rely upon this document or any of the Information.

UBS has policies and procedures, which include, without limitation, independence policies and permanent information barriers, that are intended, and upon which UBS relies, to manage potential conflicts of interest and control the flow of information within divisions of UBS and among its subsidiaries, branches and affiliates. For further information on the ways in which UBS manages conflicts and maintains independence of its research products, historical performance information and certain additional disclosures concerning UBS research recommendations, please visit www.ubs.com/disclosures.

Research will initiate, update and cease coverage solely at the discretion of UBS Research Management, which will also have sole discretion on the timing and frequency of any published research product. The analysis contained in this document is based on numerous assumptions. All material information in relation to published research reports, such as valuation methodology, risk statements, underlying assumptions (including sensitivity analysis of those assumptions), ratings history etc. as required by the Market Abuse Regulation, can be found on UBS Neo. Different assumptions could result in materially different results.

The analyst(s) responsible for the preparation of this document may interact with trading desk personnel, sales personnel and other parties for the purpose of gathering, applying and interpreting market information. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS into other areas, units, groups or affiliates of UBS. The compensation of the analyst who prepared this document is determined exclusively by research management and senior management (not including investment banking). Analyst compensation is not based on investment banking revenues; however, compensation may relate to the revenues of UBS and/or its divisions as a whole, of which investment banking, sales and trading are a part, and UBS's subsidiaries, branches and affiliates as a whole.

For financial instruments admitted to trading on an EU regulated market: UBS AG, its affiliates or subsidiaries (excluding UBS Securities LLC) acts as a market maker or liquidity provider (in accordance with the interpretation of these terms under English law or, if not carried out by UBS in the UK the law of the relevant jurisdiction in which UBS determines it carries out the activity) in the financial instruments of the issuer save that where the activity of liquidity provider is carried out in accordance with the definition given to it by the laws and regulations of any other EU jurisdictions, such information is separately disclosed in this document. For financial instruments admitted to trading on a non-EU regulated market: UBS may act as a market maker save that where this activity is carried out in the US in accordance with the definition given to it by the relevant laws and regulations, such activity will be specifically disclosed in this document. UBS may have issued a warrant the value of which is based on one or more of the financial instruments referred to in the document. UBS and its affiliates and employees may have long or short positions, trade as principal and buy and sell in instruments or derivatives identified herein; such transactions or positions may be inconsistent with the opinions expressed in this document.

Within the past 12 months UBS AG, its affiliates or subsidiaries may have received or provided investment services and activities or ancillary services as per MiFID II which may have given rise to a payment or promise of a payment in relation to these services from or to this company.

Where Global Research refers to "UBS Evidence Lab Inside" or has made use of data provided by UBS Evidence Lab you understand that UBS Evidence Lab is a separate department to Global Research and that UBS Evidence Lab does not provide research, investment recommendations or advice.

United Kingdom: This material is distributed by UBS AG, London Branch to persons who are eligible counterparties or professional clients. UBS AG, London Branch is authorised by the Prudential Regulation Authority and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. **Europe:** Except as otherwise specified herein, these materials are distributed by UBS Europe SE, a subsidiary of UBS AG, to persons who are eligible counterparties or professional clients (as detailed in the Bundesanstalt fur Finanzdienstleistungsaufsicht (BaFin) Rules and according to MIFID) and are only available to such persons. The information does not apply to, and should not be relied upon by, retail clients. UBS Europe SE is authorised by the [European Central Bank (ECB)] and regulated by the BaFin and the ECB. **France:** Prepared by UBS Europe SE and distributed by UBS Europe SE and UBS Securities France S.A. UBS Securities France S.A. is regulated by the ACPR (Autorité de Contrôle Prudentiel et de Résolution) and the Autorité des Marchés Financiers (AMF). Where an analyst of UBS Securities France S.A. has contributed to this document, the document is also deemed to have been prepared by UBS Securities France S.A. **Germany:** Where an analyst of UBS Europe SE has contributed to this document, the document is also deemed to have been prepared by UBS Europe SE. In all cases it is distributed by UBS Europe SE and UBS AG, London Branch. **Luxembourg, the Netherlands, Belgium and Ireland:** Where an analyst of UBS Europe SE has contributed to this document, the document is also deemed to have been prepared by UBS Europe SE. In all cases it is distributed by UBS Europe SE and UBS AG, London Branch. **Spain:** Prepared by UBS Europe SE and distributed by UBS Europe SE and UBS Securities España SV, SA. UBS Securities España SV, SA is regulated by the Comisión Nacional del Mercado de Valores (CNMV). **Turkey:** Distributed by UBS AG, London Branch. No information in this document is provided for the purpose of offering, marketing and sale by any means of any capital market instruments and services in the Republic of Turkey. Therefore, this document may not be considered as an offer made or to be made to residents of the Republic of Turkey. UBS AG, London Branch is not licensed by the Turkish Capital Market Board under the provisions of the Capital Market Law (Law No. 6362). Accordingly, neither this document nor any other offering material related to the instruments/services may be utilized in connection with providing any capital market services to persons within the Republic of Turkey without the prior approval of the Capital Market Board. However, according to article 15 (d) (ii) of the Decree No. 32, there is no restriction on the purchase or sale of the securities abroad by residents of the Republic of Turkey. **Poland:** Distributed by UBS Europe SE (spolka z ograniczona odpowiedzialnoscia) Oddzial w Polsce regulated by the Polish Financial Supervision Authority. Where an analyst of UBS Europe SE (spolka z ograniczona odpowiedzialnoscia) Oddzial w Polsce has contributed to this document, the document is also deemed to have been prepared by UBS Europe SE (spolka z ograniczona odpowiedzialnoscia) Oddzial w Polsce. **Russia:** Prepared and distributed by UBS Bank (OOO). Should not be construed as an individual Investment Recommendation for the purpose of the Russian Law – Federal Loaw #39-FZ ON THE SECURITIES MARKET Articles 6.1-6.2. **Switzerland:** Distributed by UBS AG to persons who are institutional investors only. UBS AG is regulated by the Swiss Financial Market Supervisory Authority (FINMA). **Italy:** Prepared by UBS Europe SE and distributed by UBS Europe SE and UBS Europe SE, Italy Branch. Where an analyst of UBS Europe SE, Italy Branch has contributed to this document, the document is also deemed to have been prepared by UBS Europe SE, Italy Branch.**South Africa:** Distributed by UBS South Africa (Pty) Limited (Registration No. 1995/011140/07), an authorised user of the JSE and an authorised Financial Services Provider (FSP 7328). **Saudi Arabia:** This document has been issued by UBS AG (and/or any of its subsidiaries, branches or affiliates), a public company limited by shares, incorporated in Switzerland with its registered offices at Aeschenvorstadt 1, CH-4051 Basel and Bahnhofstrasse 45, CH-8001 Zurich. This publication has been approved by UBS Saudi Arabia (a subsidiary of UBS AG), a Saudi closed joint stock company incorporated in the Kingdom of Saudi Arabia under commercial register number 1010257812 having its registered office at Tatweer Towers, P.O. Box 75724, Riyadh 11588, Kingdom of Saudi Arabia. UBS Saudi Arabia is authorized and regulated by the Capital Market Authority to conduct securities business under license number 08113-37. **UAE / Dubai:** The information distributed by UBS AG Dubai Branch is only intended for Professional Clients and/or Market Counterparties, as classified under the DFSA rulebook. No other person should act upon this material/communication. The information is not for further distribution within the United Arab Emirates. UBS AG Dubai Branch is regulated by the DFSA in the DIFC. UBS is not licensed to provide banking services in the UAE by the Central Bank of the UAE, nor is it licensed by the UAE Securities and Commodities Authority. **United States:** Distributed to US persons by either UBS Securities LLC or by UBS Financial Services Inc., subsidiaries of UBS AG; or by a group, subsidiary or affiliate of UBS AG that is not registered as a US broker-dealer (a **'non-US affiliate'**) to major US institutional investors only. UBS Securities LLC or UBS Financial Services Inc. accepts responsibility for the content of a report prepared by another non-US affiliate when distributed to US persons by UBS Securities LLC or UBS Financial Services Inc. All transactions by a US person in the securities mentioned in this report must be effected through UBS Securities LLC or UBS Financial Services Inc., and not through a non-US affiliate. UBS Securities LLC is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the "Municipal Advisor Rule"), and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of the Municipal Advisor Rule. **Canada:** Distributed by UBS Securities Canada Inc., a registered investment dealer in Canada and a Member-Canadian Investor Protection Fund, or by another affiliate of UBS AG that is registered to conduct business in Canada or is otherwise exempt from registration. **Brazil:** Except as otherwise specified herein, this material is prepared by UBS Brasil CCTVM S.A. to persons who are eligible investors residing in Brazil, which are considered to be Investidores Profissionais, as designated by the applicable regulation, mainly the CVM Instruction No. 539 from the 13th of November 2013 (determines the duty to verify the suitability of products, services and transactions with regards to the client´s profile). **Hong Kong:** Distributed by UBS Securities Asia Limited and/or UBS AG, Hong Kong Branch, which is incorporated in Switzerland with limited liability. Please contact local licensed/registered representatives of UBS Securities Asia Limited and/or UBS AG, Hong Kong Branch in respect of any matters arising from, or in connection with, the analysis or document. **Singapore:** Distributed by UBS Securities Pte. Ltd. [MCI (P) 079/08/2019 and Co. Reg. No.: 198500648C] or UBS AG, Singapore Branch. Please contact UBS Securities Pte. Ltd., an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110); or UBS AG, Singapore Branch, an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110) and a wholesale bank licensed under the Singapore Banking Act (Cap. 19) regulated by the Monetary Authority of Singapore, in respect of any matters arising from, or in connection with, the analysis or document. The recipients of this document represent and warrant that they are accredited and institutional investors as defined in the Securities and Futures Act (Cap. 289). **Japan:** Distributed by UBS Securities Japan Co., Ltd. to professional investors (except as otherwise permitted). Where this report has been prepared by UBS Securities Japan Co., Ltd., UBS Securities Japan Co., Ltd. is the author, publisher and distributor of the report. Distributed by UBS AG, Tokyo Branch to Professional Investors (except as otherwise permitted) in relation to foreign exchange and other banking businesses when relevant. **Australia:** Clients of UBS AG: Distributed by UBS AG (ABN 47 088 129 613 and holder of Australian Financial Services License No. 231087). Clients of UBS Securities Australia Ltd: Distributed by UBS Securities Australia Ltd (ABN 62 008 586 481 and holder of Australian Financial Services License No. 231098). This Document contains general information and/or general advice only and does not constitute personal financial product advice. As such, the Information in this document has been prepared without taking into account any investor's objectives, financial situation or needs, and investors should, before acting on the Information, consider the appropriateness of the Information, having regard to their objectives, financial situation and needs. If the Information contained in this document relates to the acquisition, or potential acquisition of a particular financial product by a 'Retail' client as defined by section 761G of the Corporations Act 2001 where a Product Disclosure Statement would be required, the retail client should obtain and consider the Product Disclosure Statement relating to the product before making any decision about whether to acquire the product. The UBS Securities Australia Limited Financial Services Guide is available at: www.ubs.com/ecs-research-fsg. **New Zealand:** Distributed by UBS New Zealand Ltd. UBS New Zealand Ltd is not a registered bank in New Zealand. You are being provided with this UBS publication or material because you have indicated to UBS that you are a "wholesale client" within the meaning of section 5C of the Financial Advisers Act 2008 of New Zealand (Permitted Client). This publication or material is not intended for clients who are not Permitted Clients (non-permitted Clients). If you are a non-permitted Client you must not rely on this publication or material. If despite this warning you nevertheless rely on this publication or material, you hereby (i) acknowledge that you may not rely on the content of this publication or material and that any recommendations or opinions in such this publication or material are not made or provided to you, and (ii) to the maximum extent permitted by law (a) indemnify UBS and its associates or related entities (and their respective Directors, officers, agents and Advisors) (each a 'Relevant Person') for any loss, damage, liability or claim any of them may incur or suffer as a result of, or in connection with, your unauthorised reliance on this publication or material and (b) waive any rights or remedies you may have against any Relevant Person for (or in respect of) any loss, damage, liability or claim you may incur or suffer as a result of, or in connection with, your unauthorised reliance on this publication or material. **Korea:** Distributed in Korea by UBS Securities Pte. Ltd., Seoul Branch. This report may have been edited or contributed to from time to time by affiliates of UBS Securities Pte. Ltd., Seoul Branch. This material is intended for professional/institutional clients only and not for distribution to any retail clients. **Malaysia:** This material is authorized to be distributed in Malaysia by UBS Securities Malaysia Sdn. Bhd (Capital Markets Services License No.: CMSL/A0063/2007). This material is intended for professional/institutional clients only and not for distribution to any retail clients. **India:** Distributed by UBS Securities India Private Ltd. (Corporate Identity Number U67120MH1996PTC097299) 2/F, 2 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai (India) 400051. Phone: +912261556000. It provides brokerage services bearing SEBI Registration Number: INZ000259830; merchant banking services bearing SEBI Registration Number: INM000010809 and Research Analyst services bearing SEBI Registration Number: INH000001204. UBS AG, its affiliates or subsidiaries may have debt holdings or positions in the subject Indian company/companies. Within the past 12 months, UBS AG, its affiliates or subsidiaries may have received compensation for non-investment banking securities-related services and/or non-securities services from the subject Indian company/companies. The subject company/companies may have been a client/clients of UBS AG, its affiliates or subsidiaries during the 12 months preceding the date of distribution of the research report with respect to investment banking and/or non-investment banking securities-related services and/or non-securities services. With regard to information on associates, please refer to the Annual Report at: http://www.ubs.com/global/en/about_ubs/investor_relations/annualreporting.html**Taiwan:** Except as otherwise specified herein, this material may not be distributed in Taiwan. Information and material on securities/instruments that are traded in a Taiwan organized exchange is deemed to be issued and distributed by UBS Securities Pte. LTD., Taipei Branch, which is licensed and regulated by Taiwan Financial Supervisory Commission. Save for securities/instruments that are traded in a Taiwan organized exchange, this material should not constitute "recommendation" to clients or recipients in Taiwan for the covered companies or any companies mentioned in this document. No portion of the document may be reproduced or quoted by the press or any other person without authorisation from UBS. **Indonesia:** This report is being distributed by PT UBS Sekuritas Indonesia and is delivered by its licensed employee(s), including marketing/sales person, to its client. PT UBS Sekuritas Indonesia, having its registered office at Wisma GKBI, 22nd floor, JL. Jend. Sudirman, kav.28, Jakarta 10210, Indonesia, is a subsidiary company of UBS AG and licensed under Capital Market Law no. 8 year 1995, a holder of broker-dealer and underwriter licenses issued by the Capital Market and Financial Institution Supervisory Agency (now Otoritas Jasa Keuangan/OJK). PT UBS Sekuritas Indonesia is also a member of Indonesia Stock Exchange and supervised by Otoritas Jasa Keuangan (OJK). Neither this report nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens except in compliance with applicable Indonesian capital market laws and regulations. This report is not an offer of securities in Indonesia and may not be distributed within the territory of the Republic of Indonesia or to Indonesian citizens in circumstance which constitutes an offering within the meaning of Indonesian capital market laws and regulations.

The disclosures contained in research documents produced by UBS AG, London Branch or UBS Europe SE shall be governed by and construed in accordance with English law.

UBS specifically prohibits the redistribution of this document in whole or in part without the written permission of UBS and in any event UBS accepts no liability whatsoever for any redistribution of this document or its contents or the actions of third parties in this respect. Images may depict objects or elements that are protected by third party copyright, trademarks and other intellectual property rights. © UBS 2020. The key symbol and UBS are among the registered and unregistered trademarks of UBS. All rights reserved.

Global Wealth Management Disclaimer

You receive this document in your capacity as a client of UBS Global Wealth Management. This publication has been distributed to you by UBS Switzerland AG (regulated by FINMA in Switzerland) or its affiliates ("UBS") with whom you have a banking relationship with. The full name of the distributing affiliate and its competent authority can be found in the country-specific disclaimer at the end of this document.

The date and time of the first dissemination of this publication is the same as the date and time of its publication.

Risk information:

You agree that you shall not copy, revise, amend, create a derivative work, provide to any third party, or in any way commercially exploit any UBS research, and that you shall not extract data from any research or estimates, without the prior written consent of UBS.

This document is for distribution only as may be permitted by law. It is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or would subject UBS to any registration or licensing requirement within such jurisdiction.

This document is a general communication and is educational in nature; it is not an advertisement nor is it a solicitation or an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Nothing in this document constitutes a representation that any investment strategy or recommendation is suitable or appropriate to an investor's individual circumstances or otherwise constitutes a personal recommendation. By providing this document, none of UBS or its representatives has any responsibility or authority to provide or have provided investment advice in a fiduciary capacity or otherwise. Investments involve risks, and investors should exercise prudence and their own judgment in making their investment decisions. None of UBS or its representatives is suggesting that the recipient or any other person take a specific course of action or any action at all. By receiving this document, the recipient acknowledges and agrees with the intended purpose described above and further disclaims any expectation or belief that the information constitutes investment advice to the recipient or otherwise purports to meet the investment objectives of the recipient. The financial instruments described in the document may not be eligible for sale in all jurisdictions or to certain categories of investors.

Options, derivative products and futures are not suitable for all investors, and trading in these instruments is considered risky. Mortgage and asset-backed securities may involve a high degree of risk and may be highly volatile in response to fluctuations in interest rates or other market conditions. Foreign currency rates of exchange may adversely affect the value, price or income of any security or related instrument referred to in the document. For investment advice, trade execution or other enquiries, clients should contact their local sales representative.

The value of any investment or income may go down as well as up, and investors may not get back the full (or any) amount invested. Past performance is not necessarily a guide to future performance. Neither UBS nor any of its directors, employees or agents accepts any liability for any loss (including investment loss) or damage arising out of the use of all or any of the information (as defined below).

Prior to making any investment or financial decisions, any recipient of this document or the information should take steps to understand the risk and return of the investment and seek individualized advice from his or her personal financial, legal, tax and other professional advisors that takes into account all the particular facts and circumstances of his or her investment objectives.

Any prices stated in this document are for information purposes only and do not represent valuations for individual securities or other financial instruments. There is no representation that any transaction can or could have been effected at those prices, and any prices do not necessarily reflect UBS's internal books and records or theoretical model-based valuations and may be based on certain assumptions. Different assumptions by UBS or any other source may yield substantially different results.

No representation or warranty, either expressed or implied, is provided in relation to the accuracy, completeness or reliability of the information contained in any materials to which this document relates (the "Information"), except with respect to Information concerning UBS. The Information is not intended to be a complete statement or summary of the securities, markets or developments referred to in the document. UBS does not undertake to update or keep current the Information. Any opinions expressed in this document may change without notice and may differ or be contrary to opinions expressed by other business areas or groups, personnel or other representative of UBS. Any statements contained in this report attributed to a third party represent UBS's interpretation of the data, information and/or opinions provided by that third party either publicly or through a subscription service, and such use and interpretation have not been reviewed by the third party. In no circumstances may this document or any of the Information (including any forecast, value, index or other calculated amount ("Values")) be used for any of the following purposes:

(i) valuation or accounting purposes;

(ii) to determine the amounts due or payable, the price or the value of any financial instrument or financial contract; or

(iii) to measure the performance of any financial instrument including, without limitation, for the purpose of tracking the return or performance of any Value or of defining the asset allocation of portfolio or of computing performance fees.

By receiving this document and the Information you will be deemed to represent and warrant to UBS that you will not use this document or any of the Information for any of the above purposes or otherwise rely upon this document or any of the Information.

UBS has policies and procedures, which include, without limitation, independence policies and permanent information barriers, that are intended, and upon which UBS relies, to manage potential conflicts of interest and control the flow of information within divisions of UBS (including between Global Wealth Management and Research) and among its subsidiaries, branches and affiliates. For further information on the ways in which UBS manages conflicts and maintains independence of its research products, historical performance information and certain additional disclosures concerning UBS research recommendations, please visit www.ubs.com/disclosures.

Research will initiate, update and cease coverage solely at the discretion of research management, which will also have sole discretion on the timing and frequency of any published research product. The analysis contained in this document is based on numerous assumptions. Different assumptions could result in materially different results.

The analyst(s) responsible for the preparation of this document may interact with trading desk personnel, sales personnel and other parties for the purpose of gathering, applying and interpreting market information. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS into other areas, units, groups or affiliates of UBS. The compensation of the analyst who prepared this document is determined exclusively by research management and senior management (not including investment banking). Analyst compensation is not based on investment banking revenues; however, compensation may relate to the revenues of UBS and/or its divisions as a whole, of which investment banking, sales and trading are a part, and UBS's subsidiaries, branches and affiliates as a whole.

For financial instruments admitted to trading on an EU regulated market: UBS AG, its affiliates or subsidiaries (excluding UBS Securities LLC) acts as a market maker or liquidity provider (in accordance with the interpretation of these terms in the UK) in the financial instruments of the issuer save that where the activity of liquidity provider is carried out in accordance with the definition given to it by the laws and regulations of any other EU jurisdictions, such information is separately disclosed in this document. For financial instruments admitted to trading on a non-EU regulated market: UBS may act as a market maker save that where this activity is carried out in the US in accordance with the definition given to it by the relevant laws and regulations, such activity will be specifically disclosed in this document. UBS may have issued a warrant the value of which is based on one or more of the financial instruments referred to in the document. UBS and its affiliates and employees may have long or short positions, trade as principal and buy and sell in instruments or derivatives identified herein; such transactions or positions may be inconsistent with the opinions expressed in this document.

Options and futures are not suitable for all investors, and trading in these instruments is considered risky and may be appropriate only for sophisticated investors. Prior to buying or selling an option, and for the complete risks relating to options, you must receive a copy of "Characteristics and Risks of Standardized Options". You may read the document at https://www.theocc.com/about/publications/character-risks.jsp or ask your financial advisor for a copy.

Investing in structured investments involves significant risks. For a detailed discussion of the risks involved in investing in any particular structured investment, you must read the relevant offering materials for that investment. Structured investments are unsecured obligations of a particular issuer with returns linked to the performance of an underlying asset. Depending on the terms of the investment, investors could lose all or a substantial portion of their investment based on the performance of the underlying asset. Investors could also lose their entire investment if the issuer becomes insolvent. UBS Financial Services Inc. does not guarantee in any way the obligations or the financial condition of any issuer or the accuracy of any financial information provided by any issuer. Structured investments are not traditional investments and investing in a structured investment is not equivalent to investing directly in the underlying asset. Structured investments may have limited or no liquidity, and investors should be prepared to hold their investment to maturity. The return of structured investments may be limited by a maximum gain, participation rate or other feature. Structured investments may include call features and, if a structured investment is called early, investors would not earn any further return and may not be able to reinvest in similar investments with similar terms. Structured investments include costs and fees which are generally embedded in the price of the investment. The tax treatment of a structured investment may be complex and may differ from a direct investment in the underlying asset. UBS Financial Services Inc. and its employees do not provide tax advice. Investors should consult their own tax advisor about their own tax situation before investing in any securities.

Within the past 12 months UBS Switzerland AG, its affiliates or subsidiaries may have received or provided investment services and activities or ancillary services as per MiFID II which may have given rise to a payment or promise of a payment in relation to these services from or to this company.

If you require detailed information on disclosures of interest or conflict of interest as required by Market Abuse Regulation please contact the mailbox MAR_disclosures_twopager@ubs.com. Please note that e-mail communication is unsecured.

External Asset Managers / External Financial Consultants: In case this research or publication is provided to an External Asset Manager or an External Financial Consultant, UBS expressly prohibits that it is redistributed by the External Asset Manager or the External Financial Consultant and is made available to their clients and/or third parties.

Distributed to US persons by UBS Financial Services Inc. or UBS Securities LLC, subsidiaries of UBS AG. UBS Switzerland AG, UBS Europe SE, UBS Bank, S.A., UBS Brasil Administradora de Valores Mobiliarios Ltda, UBS Asesores Mexico, S.A. de C.V., UBS Securities Japan Co., Ltd, UBS Wealth Management Israel Ltd and UBS Menkul Degerler AS are affiliates of UBS AG. UBS Financial Services Incorporated of Puerto Rico is a subsidiary of UBS Financial Services Inc. **UBS Financial Services Inc. accepts responsibility for the content of a report prepared by a non-US affiliate when it distributes reports to US persons. All transactions by a US person in the securities mentioned in this report should be effected through a US-registered broker dealer affiliated with UBS, and not through a non-US affiliate. The contents of this report have not been and will not be approved by any securities or investment authority in the United States or elsewhere. UBS Financial Services Inc. is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the "Municipal Advisor Rule") and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of the Municipal Advisor Rule.**

Austria: This publication is not intended to constitute a public offer under Austrian law. It is distributed only for information purposes to clients of UBS Europe SE, Niederlassung Österreich, with place of business at Wächtergasse 1, A-1010 Wien. UBS Europe SE, Niederlassung Österreich is subject to the joint supervision of the European Central Bank ("ECB"), the German Central Bank (Deutsche Bundesbank), the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht), as well as of the Austrian Financial Market Authority (Finanzmarktaufsicht, FMA), to which this publication has not been submitted for approval. UBS Europe SE is a credit institution constituted under German law in the form of a Societas Europaea, duly authorized by the ECB. **Bahrain**: UBS is a Swiss bank not licensed, supervised or regulated in Bahrain by the Central Bank of Bahrain and does not undertake banking or investment business activities in Bahrain. Therefore, clients have no protection under local banking and investment services laws and regulations. **Canada**: The information contained herein is not, and under no circumstances is to be construed as, a prospectus, an advertisement, a public offering, an offer to sell securities described herein, solicitation of an offer to buy securities described herein, in Canada or any province or territory thereof. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the dealer registration requirement in the relevant province or territory of Canada in which such offer or sale is made. Under no circumstances is the information contained herein to be construed as investment advice in any province or territory of Canada and is not tailored to the needs of the recipient. To the extent that the information contained herein references securities of an issuer incorporated, formed or created under the laws of Canada or a province or territory of Canada, any trades in such securities must be conducted through a dealer registered in Canada or, alternatively, pursuant to a dealer registration exemption. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon these materials, the information contained herein or the merits of the securities described herein and any representation to the contrary is an offence. In Canada, this publication is distributed by UBS Investment Management Canada Inc. **China**: This research report is neither intended to be distributed to PRC investors nor to provide securities investment consultancy services within the territory of PRC. **Czech Republic**: UBS is not a licensed bank in the Czech Republic and thus is not allowed to provide regulated banking or investment services in the Czech Republic. Please notify UBS if you do not wish to receive any further correspondence. **Denmark**: This publication is not intended to constitute a public offer under Danish law. It is distributed only for information purposes to clients of UBS Europe SE, Denmark Branch, filial af UBS Europe SE, with place of business at Sankt Annae Plads 13, 1250 Copenhagen, Denmark, registered with the Danish Commerce and Companies Agency, under No. 38 17 24 33. UBS Europe SE, Denmark Branch, filial af UBS Europe SE is subject to the joint supervision of the European Central Bank ("ECB"), the German Central Bank (Deutsche Bundesbank), the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht), as well as of the Danish Financial Supervisory Authority (Finanstilsynet), to which this publication has not been submitted for approval. UBS Europe SE is a credit institution constituted under German law in the form of a Societas Europaea, duly authorized by the ECB. **Egypt**: Securities or other investment products are not being offered or sold by UBS to the public in Egypt and they have not been and will not be registered with the Egyptian Financial Supervisory Authority. **France**: This publication is distributed by UBS (France) S.A., French "société anonyme" with share capital of € 132.975.556, 69, boulevard Haussmann F-75008 Paris, R.C.S. Paris B 421 255 670, to its clients and prospects. UBS (France) S.A. is a provider of investment services duly authorized according to the terms of the "Code Monétaire et Financier", regulated by French banking and financial authorities as the "Autorité de Contrôle Prudentiel et de Résolution." **Germany**: This publication is not intended to constitute a public offer under German law. It is distributed only for information purposes to clients of UBS Europe SE, Germany, with place of business at Bockenheimer Landstrasse 2-4, 60306 Frankfurt am Main. UBS Europe SE is a credit institution constituted under German law in the form of a Societas Europaea, duly authorized by the European Central Bank ("ECB"), and supervised by the ECB, the German Central Bank (Deutsche Bundesbank) and the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht), to which this publication has not been submitted for approval. **Greece**: UBS Switzerland AG and its affiliates (UBS) are not licensed as a bank or financial institution under Greek legislation and do not provide banking and financial services in Greece. Consequently, UBS provides such services from branches outside of Greece, only. This document may not be considered as a public offering made or to be made to residents of Greece. **Hong Kong**: This publication is distributed to clients of UBS AG Hong Kong Branch by UBS AG Hong Kong Branch, a licensed bank under the Hong Kong Banking Ordinance and a registered institution under the Securities and Futures Ordinance. UBS AG Hong Kong Branch is incorporated in Switzerland with limited liability. **Indonesia, Malaysia, Phillipines, Thailand**: This material was provided to you as a result of a request received by UBS from you and/or persons entitled to make the request on your behalf. Should you have received the material erroneously, UBS asks that you kindly destroy/delete it and inform UBS immediately. Any and all advice provided and/or trades executed by UBS pursuant to the material will only have been provided upon your specific request or executed upon your specific instructions, as the case may be, and may be deemed as such by UBS and you. The material may not have been reviewed, approved, disapproved or endorsed by any financial or regulatory authority in your jurisdiction. The relevant investments will be subject to restrictions and obligations on transfer as set forth in the material, and by receiving the material you undertake to comply fully with such restrictions and obligations. You should carefully study and ensure that you understand and exercise due care and discretion in considering your investment objective, risk appetite and personal circumstances against the risk of the investment. You are advised to seek independent professional advice in case of doubt. **India**: UBS Securities India Private Ltd. (Corporate Identity Number U67120MH1996PTC097299) 2/F, 2 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai (India) 400051. Phone: +912261556000. It provides brokerage services bearing SEBI Registration Number INZ000259830; merchant banking services bearing SEBI Registration Number: INM000010809 and Research Analyst services bearing SEBI Registration Number: INH000001204. UBS AG, its affiliates or subsidiaries may have debt holdings or positions in the subject Indian company/companies. Within the past 12 months, UBS AG, its affiliates or subsidiaries may have received compensation for non-investment banking securities-related services and/or non-securities services from the subject Indian company/companies. The subject company/companies may have been a client/clients of UBS AG, its affiliates or subsidiaries during the 12 months preceding the date of distribution of the research report with respect to investment banking and/or non-investment banking securities-related services and/or non-securities services. With regard to information on associates, please refer to the Annual Report at: http://www.ubs.com/global/en/about_ubs/investor_relations/annualreporting.html. **Israel**: UBS is a premier global financial firm offering wealth management, asset management and investment banking services from its headquarters in Switzerland and its operations in over 50 countries worldwide to individual, corporate and institutional investors. In Israel, UBS Switzerland AG is registered as Foreign Dealer in cooperation with UBS Wealth Management Israel Ltd., a wholly owned UBS subsidiary. UBS Wealth Management Israel Ltd. is a Portfolio Manager licensee which engages also in Investment Marketing and is regulated by the Israel Securities Authority. This publication is intended for information only and is not intended as an offer to buy or solicitation of an offer. Furthermore, this publication is not intended as an investment advice and/or investment marketing and is not replacing any investment advice and/or investment marketing provided by the relevant licensee which is adjusted to each person needs. No action has been, or will be, taken in Israel that would permit an offering of the product(s) mentioned in this document or a distribution of this document to the public in Israel. In particular, this document has not been reviewed or approved by the Israeli Securities Authority. The product(s) mentioned in this document is/are being offered to a limited number of sophisticated investors who qualify as one of the investors listed in the first supplement to the Israeli Securities Law, 5728-1968. This document may not be reproduced or used for any other purpose, nor be furnished to any other person other than those to whom copies have been sent. Anyone who purchases the product(s) mentioned herein shall do so for its own benefit and for its own account and not with the aim or intention of distributing or offering the product(s) to other parties. Anyone who purchases the product(s) shall do so in accordance with its own understanding and discretion and after it has received any relevant financial, legal, business, tax or other advice or opinion required by it in connection with such purchase(s). The word "advice" and/or any of its derivatives shall be read and construed in conjunction with the definition of the term "investment marketing" as defined under the Israeli Regulation of Investment Advice, Investment Marketing and Portfolio Management Law, 1995.**Italy**: This publication is not intended to constitute a public offer under Italian law. It is distributed only for information purposes to clients of UBS Europe SE, Succursale Italia, with place of business at Via del Vecchio Politecnico, 3-20121 Milano. UBS Europe SE, Succursale Italia is subject to the joint supervision of the European Central Bank ("ECB"), the German Central Bank (Deutsche Bundesbank), the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht), as well as of the Bank of Italy (Banca d'Italia) and the Italian Financial Markets Supervisory Authority (CONSOB - Commissione Nazionale per le Società e la Borsa), to which this publication has not been submitted for approval. UBS Europe SE is a credit institution constituted under German law in the form of a Societas Europaea, duly authorized by the ECB. **Jersey**: UBS AG, Jersey Branch, is regulated and authorized by the Jersey Financial Services Commission for the conduct of banking, funds and investment business. Where services are provided from outside Jersey, they will not be covered by the Jersey regulatory regime. UBS AG, Jersey Branch is a branch of UBS AG a public company limited by shares, incorporated in Switzerland whose registered offices are at Aeschenvorstadt 1, CH-4051 Basel and Bahnhofstrasse 45, CH 8001 Zurich. UBS AG, Jersey Branch's principal place business is 1, IFC Jersey, St Helier, Jersey, JE2 3BX. **Luxembourg**: This publication is not intended to constitute a public offer under Luxembourg law. It is distributed only for information purposes to clients of UBS Europe SE, Luxembourg Branch, with place of business at 33A, Avenue J. F. Kennedy, L-1855 Luxembourg. UBS Europe SE, Luxembourg Branch is subject to the joint supervision of the European Central Bank ("ECB"), the German Central bank (Deutsche Bundesbank), the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht), as well as of the Luxembourg supervisory authority (Commission de Surveillance du Secteur Financier), to which this publication has not been submitted for approval. UBS Europe SE is a credit institution constituted under German law in the form of a Societas Europaea, duly authorized by the ECB. **Mexico**: This information is distributed by UBS Asesores México, S.A. de C.V. ("UBS Asesores"), an affiliate of UBS Switzerland AG, incorporated as a non-independent investment advisor under the Securities Market Law due to the relation with a Foreign Bank. UBS Asesores is a regulated entity and it is subject to the supervision of the Mexican Banking and Securities Commission ("CNBV"), which exclusively regulates UBS Asesores regarding the rendering of portfolio management, as well as on securities investment advisory services, analysis and issuance of individual investment recommendations, so that the CNBV has no surveillance faculties nor may have over any other service provided by UBS Asesores. UBS Asesores is registered before CNBV under Registry number 30060. You are being provided with this UBS publication or material because you have indicated to UBS Asesores that you are a Sophisticated Qualified Investor located in Mexico. The compensation of the analyst(s) who prepared this report is determined exclusively by research management and senior management of any entity of UBS Group to which such analyst(s) render services. **Nigeria**: UBS Switzerland AG and its affiliates (UBS) are not licensed, supervised or regulated in Nigeria by the Central Bank of Nigeria or the Nigerian Securities and Exchange Commission (SEC) and do not undertake banking or investment business activities in Nigeria. The investment products mentioned in this material are not being offered or sold by UBS to the public in Nigeria and they have not been submitted for approval nor registered with the Nigerian SEC. If you are interested in products of this nature, please let us know and we will direct you to someone who can advise you. The investment products mentioned in this material are not being directed to, and are not being made available for subscription by any persons within Nigeria other than the selected investors to whom the offer materials have been addressed as a private sale or domestic concern within the exemption and meaning of Section 69(2) of the Investments and Securities Act, 2007 (ISA). **Poland**: UBS is a premier global financial services firm offering wealth management services to individual, corporate and institutional investors. UBS is established in Switzerland and operates under Swiss law and in over 50 countries and from all major financial centres. UBS Switzerland AG is not licensed as a bank or as an investment firm under Polish legislation and is not permitted to provide banking and financial services in Poland. **Portugal**: UBS Switzerland AG is not licensed to conduct banking and financial activities in Portugal nor is UBS Switzerland AG supervised by the Portuguese regulators (Bank of Portugal "Banco de Portugal" and Portuguese Securities Exchange Commission "Comissão do Mercado de Valores Mobiliários"). **Russia**: This document or information contained therein is for information purposes only and constitute neither a public nor a private offering, is not an invitation to make offers, to sell, exchange or otherwise transfer any financial instruments in the Russian Federation to or for the benefit of any Russian person or entity and does not constitute an advertisement or offering of securities in the Russian Federation within the meaning of Russian securities laws. **Singapore**: This material was provided to you as a result of a request received by UBS from you and/or persons entitled to make the request on your behalf. Should you have received the material erroneously, UBS asks that you kindly destroy/delete it and inform UBS immediately. Clients of UBS AG Singapore branch are asked to please contact UBS AG Singapore branch, an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110) and a wholesale bank licensed under the Singapore Banking Act (Cap. 19) regulated by the Monetary Authority of Singapore, in respect of any matters arising from, or in connection with, the analysis or report. **Spain**: This publication is is not intended to constitute a public offer under Spanish law. It is distributed only for information purposes to clients of UBS Europe SE, Sucursal en España, with place of business at Calle María de Molina 4, C.P. 28006, Madrid. UBS Europe SE, Sucursal en España is subject to the joint supervision of the European Central Bank ("ECB"), the German Central bank (Deutsche Bundesbank), the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht), as well as of the Spanish supervisory authority (Banco de España), to which this publication has not been submitted for approval. Additionally it is authorized to provide investment services on securities and financial instruments, regarding which it is supervised by the Comisión Nacional del Mercado de Valores as well. UBS Europe SE, Sucursal en España is a branch of UBS Europe SE, a credit institution constituted under German law in the form of a Societas Europaea, duly authorized by the ECB. **Sweden**: This publication is not intended to constitute a public offer under Swedish law. It is distributed only for information purposes to clients of UBS Europe SE, Sweden Bankfilial, with place of business at Regeringsgatan 38, 11153 Stockholm, Sweden, registered with the Swedish Companies Registration Office under Reg. No 516406-1011. UBS Europe SE, Sweden Bankfilial is subject to the joint supervision of the European Central Bank ("ECB"), the German Central bank (Deutsche Bundesbank), the German Federal Financial Services Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht), as well as of the Swedish supervisory authority (Finansinspektionen), to which this publication has not been submitted for approval. UBS Europe SE is a credit institution constituted under German law in the form of a Societas Europaea, duly authorized by the ECB. **Taiwan**: This material is provided by UBS AG, Taipei Branch in accordance with laws of Taiwan, in agreement with or at the request of clients/prospects. **Turkey**: No information in this document is provided for the purpose of offering, marketing and sale by any means of any capital market instruments and services in the Republic of Turkey. Therefore, this document may not be

considered as an offer made or to be made to residents of the Republic of Turkey in the Republic of Turkey. UBS Switzerland AG is not licensed by the Turkish Capital Market Board (the CMB) under the provisions of the Capital Market Law (Law No. 6362). Accordingly neither this document nor any other offering material related to the instruments/services may be utilized in connection with providing any capital market services to persons within the Republic of Turkey without the prior approval of the CMB. However, according to article 15 (d) (ii) of the Decree No. 32 there is no restriction on the purchase or sale of the instruments by residents of the Republic of Turkey. **UAE**: UBS is not licensed in the UAE by the Central Bank of UAE or by the Securities & Commodities Authority. The UBS AG Dubai Branch is licensed in the DIFC by the Dubai Financial Services Authority as an authorised firm. **United Kingdom**: This document is issued by UBS Wealth Management, a division of UBS AG which is authorised and regulated by the Financial Market Supervisory Authority in Switzerland. In the United Kingdom, UBS AG is authorised by the Prudential Regulation Authority and is subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details about the extent of regulation by the Prudential Regulation Authority are available from us on request. A member of the London Stock Exchange. This publication is distributed to retail clients of UBS Wealth Management. **Ukraine**: UBS is not registered and licensed as a bank/financial institution under Ukrainian legislation and does not provide banking and other financial services in Ukraine. UBS has not made and will not make any offer of the mentioned products to the public in Ukraine. No action has been taken to authorize an offer of the mentioned products to the public in Ukraine and the distribution of this document shall not constitute financial services for the purposes of the Law of Ukraine "On Financial Services and State Regulation of Financial Services Markets" dated 12 July 2001. Accordingly, nothing in this document or any other document, information or communication related to the mentioned products shall be interpreted as containing an offer or invitation to offer, or solicitation of securities in the territory of Ukraine. Electronic communication must not be considered as an offer to enter into an electronic agreement or electronic instrument within the meaning of the Law of Ukraine "On Electronic Commerce" dated 3 September 2015.

This document is strictly for private use by its holder and may not be passed on to third parties or otherwise publicly distributed.

© UBS 2020. The key symbol and UBS are among the registered and unregistered trademarks of UBS. All rights reserved.

UBS

有点报告社群

分 享8万+行业报告/案例、7000+工具/模版;
精选各行业前沿数据、经典案例、职场干货等。

截屏本页，微信扫一扫或搜索公众号 “**有点报告**”
回复<**进群**> 即刻加入