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Batteries-Battery Sys
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Blackstone Resources

Banking big on battery technology initiatives

Opinion	**Buy**
Upside (%)	658
Price (CHF)	0.47
Target Price (CHF)	3.56
Bloomberg Code	BLS SW
Market Cap (CHFM)	20.1
Enterprise Value (CHFM)	79.7

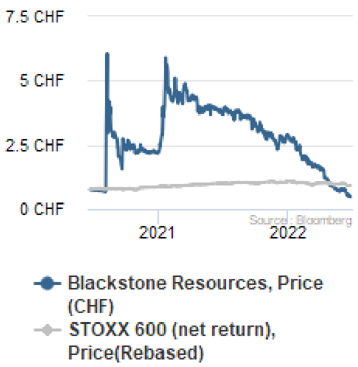
Momentum	NEGATIVE
Sustainability	4/10
Credit Risk	C↗

Research Analysts

Varun Sikka

+33 (0) 1 70 61 10 50

capitalgoods@alphavalue.eu



PROS

- Blackstone Resources is investing heavily in next-gen, i.e. solid-state battery technology and 3D-printed mass production, thereby moving up the (battery) metal value chain
- Ownership of key materials (like manganese, cobalt, lithium and nickel) is a good start to battery initiatives at the R&D stage
- Monetisation (even if partial) of owned assets should somewhat limit the dependence on external borrowings

CONS

- Battery materials and manufacturing are challenging ventures facing a host of technological and financial hurdles
- Blackstone Resources is not cash generative and faces high execution risks across its businesses; the funding bet is on German R&D subsidies

KEY DATA	12/19A	12/20A	12/21E	12/22E	12/23E
Adjusted P/E (x)	**12.8**	**3.60**	**4.70**	**-1.06**	**1.09**
Dividend yield (%)	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*
EV/EBITDA(R) (x)	-83.4	-38.9	-23.0	ns	1.23
Adjusted EPS (CHF)	**0.13**	**0.42**	**0.78**	**-0.44**	**0.43**
Growth in EPS (%)	*n/a*	*225*	*88.4*	*n/a*	*n/a*
Dividend (CHF)	0.00	0.00	0.00	0.00	0.00
Sales (CHFM)	0.00	0.01	1.59	80.5	329
EBITDA/R margin (%)	*ns*	*ns*	*ns*	*0.25*	*20.7*
Attributable net profit (CHFM)	5.31	17.7	15.0	-18.9	18.4
ROE (after tax) (%)	**26.7**	**55.5**	**23.7**	**-18.3**	**13.8**
Gearing (%)	*123*	*53.9*	*9.27*	*-12.6*	*-21.8*

Conflicts of interest

Corporate broking	No
Trading in corporate shares	No
Analyst ownership	No
Advice to corporate	No
Research paid for by corporate	Yes
Corporate access	No
Brokerage activity at AlphaValue	No
Client of AlphaValue Research	No

Blackstone (Buy)

Detailed financials at the end of this report

Key Ratios

		12/20A	12/21E	12/22E	12/23E
Adjusted P/E	x	3.60	4.70	-1.06	1.09
EV/EBITDA	x	-38.9	-23.0	ns	1.23
P/Book	x	1.64	1.79	0.17	0.14
Dividend yield	%	0.00	0.00	0.00	0.00
Free Cash Flow Yield	%	-6.17	-23.0	-320	-57.9
ROE (after tax)	%	55.5	23.7	-18.3	13.8
ROCE	%	12.8	17.3	-6.53	7.56
Net debt/EBITDA	x	-4.34	-0.34	-163	-0.47

Consolidated P&L

		12/20A	12/21E	12/22E	12/23E
Sales	CHFM	0.01	1.59	80.5	329
EBITDA	CHFM	-3.06	-8.76	0.20	68.0
Underlying operating profit	CHFM	-4.43	-9.33	-17.0	23.2
Operating profit (EBIT)	CHFM	17.7	33.4	-17.0	23.2
Net financial expenses	CHFM	-0.64	-0.27	-0.06	0.66
Pre-tax profit before exceptional items	CHFM	17.1	33.1	-17.0	23.8
Corporate tax	CHFM	0.16	0.74	-0.85	-2.38
Attributable net profit	CHFM	17.7	15.0	-18.9	18.4
Adjusted attributable net profit	CHFM	17.7	33.4	-18.9	18.4

Cashflow Statement

		12/20A	12/21E	12/22E	12/23E
Total operating cash flows	CHFM	-3.30	4.10	-7.29	57.7
Capital expenditure	CHFM	0.00	-40.0	-56.9	-70.0
Total investment flows	CHFM	0.19	6.44	43.4	-59.7
Dividends (parent company)	CHFM	0.00	0.00	0.00	0.00
New shareholders' equity	CHFM	-0.08	0.00	0.00	0.00
Total financial flows	CHFM	2.07	8.55	4.66	-7.16
Change in net debt position	CHFM	-3.29	10.3	36.0	-1.30
Free cash flow (pre div.)	CHFM	-3.94	-36.1	-64.3	-11.6

Balance Sheet

		12/20A	12/21E	12/22E	12/23E
Goodwill	CHFM	88.5	81.2	81.2	81.2
Total intangible	CHFM	88.5	81.2	81.2	81.2
Tangible fixed assets	CHFM	10.1	49.5	89.2	114
WCR	CHFM	-1.60	4.67	11.3	19.2
Total assets (net of short term liabilities)	CHFM	102	191	187	220
Ordinary shareholders' equity (group share)	CHFM	39.0	87.7	119	148
Provisions for pensions	CHFM	0.13	-0.43	-0.63	-0.84
Net debt / (cash)	CHFM	13.3	2.99	-33.0	-31.7
Total liabilities and shareholders' equity	CHFM	102	191	187	220

Per Share Data

		12/20A	12/21E	12/22E	12/23E
Adjusted EPS (bfr gwill amort. & dil.)	**CHF**	**0.42**	**0.78**	**-0.44**	**0.43**
Net dividend per share	**CHF**	**0.00**	**0.00**	**0.00**	**0.00**
Free cash flow per share	CHF	-0.09	-0.85	-1.51	-0.27
Book value per share	CHF	0.91	2.05	2.79	3.47
Number of diluted shares (average)	**Mio**	**42.7**	**42.7**	**42.7**	**42.7**

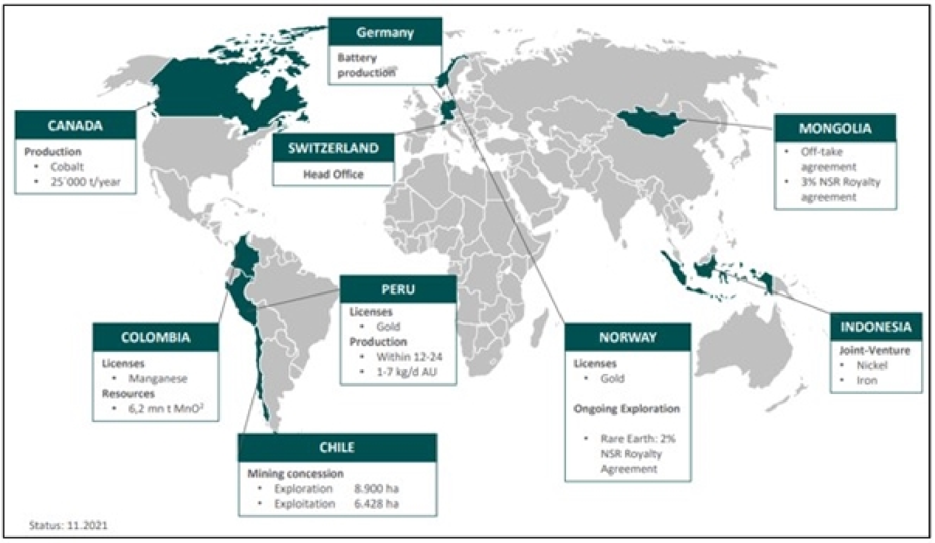
Contents

Businesses & Trends

Blackstone Resources AG is a Switzerland-incorporated next-gen battery technology company, which is poised to undertake mass production of 3D-printed solid-state lithium-ion batteries, though its roots lie in mining, i.e. exploration and development of (battery) metals for the global markets. Established in 1995, the company has over the years – through various acquisitions and strategic stake purchases – carved out a diversified commodity portfolio, which comprises gold, silver, manganese, lithium, cobalt, molybdenum, nickel, iron ore and rare earth metals. The group has a presence across the supply chain, with operations ranging from mining to refining and trading.

With the electric vehicle (EV) revolution and clean energy demand gathering momentum, Blackstone has made a major foray in research and development (R&D) and eventually production of batteries, thereby leveraging its (under-development) mining exposure to key materials like manganese, cobalt, nickel and lithium. Fortunately, after the COVID-19 outbreak, the emphasis on EVs and green energy has been further catalysed by material stimuli and, simultaneously, Blackstone has achieved progress on the battery R&D front.

A global footprint



Source: Company Presentation 2022

Battery (R&D) foray …

With Blackstone's mining and trading ventures slowly nearing fruition (discussed below) – also impacted by COVID-19 disruption, the group is implementing a €200m investment project, with the ultimate objective of undertaking battery manufacturing. For this purpose, in 2019, Blackstone Research GmbH was established in Saxony (Germany), where research and manufacturing has already begun. Moreover, research cooperation agreements have been inked in with institutes and universities, such as the Swiss Federal Laboratories for Materials Science and Technology, Bern University of Applied Sciences and Frauenhofer Institute in Germany. Over the years, there are plans to expand the manufacturing footprint to the US, Brazil, France, China, India and Indonesia.

… promises various USPs

Technology	Proven and patent pending 3D-printing technology applied to Li-Ion battery production provides maximum flexibility in production.
Cost Saving	Phase 1: CAPEX saving 30%, OPEX saving 10% Phase 2: CAPEX saving 70%, OPEX saving 30%
Solid State Battery	The world´s first 3D printing production process will be implemented. SBB can be produced in series.
Performance	Phase 1: Increase energy desity by 20% Phase 2: Increase energy desity by 100% (with SBB)
Raw Materials	Blackstone supplies its own resources. Shortening the supply chain and ensuring long-term access to whilst hedging exposure of LIB materials.

Source: Company Presentation 2022

Aggressive plans

Despite being a late entrant in the battery space, which is dominated by Asian companies and Tesla, Blackstone's patented 3D-printing process to manufacture (more-efficient) solid-state batteries, if proven to be successful and scaleable, could be a game-changer. Management claims that its 3D-printing process can result in sizeable capex and opex savings. The group plans to embark its debut battery journey on a cautionary note, with the initial aim of targeting the relatively-smaller markets and, after successful adoption, there should be a mass roll-out for automobile markets. Interestingly, Blackstone has already signed / is (in advanced stages of) discussing battery purchase agreements with diversified clientele in motorcycle, bus, forklift, telecom and marine businesses.

Given the growing focus on EVs and clean-tech, massive funds are being invested for battery R&D and manufacturing by various companies and governments. In fact, there are numerous smaller firms (like Blackstone), besides the legacy battery and automobile giants, which are trying to make a mark. While names of bigwigs like Quantumscape and Toyota often come up as key players in the next-gen solid-state battery (tech) space, it's worth noting that this innovation won't be an easy nut to crack – with large scale deliveries still to be tested / a couple of years away. And, to Blackstone's credit, given its smaller size and, hence, better agility, and patented multilayer printing process, it may have the flexibility to adapt to rapidly changing markets. Remember, since the second half of 2020, the group reported various milestones in the battery (R&D) division, including: 1/ progress on 3D printing for next generation battery cells; 2/ CHF30m equity commitment from GEM Global; 3/ Innosuisse (Swiss Innovation Agency) approving a grant application – providing 50% funding for a CHF1.3m project; 4/ EU grant for battery project; 5/ CHF20m convertible loan facility to mass produce next-gen batteries;and 6/ successfully printed and tested the working solid-state battery cell, thereby resulting in the completion of R&D for the 3D screen-printing process and paving the way for the mass production of solid-state batteries.

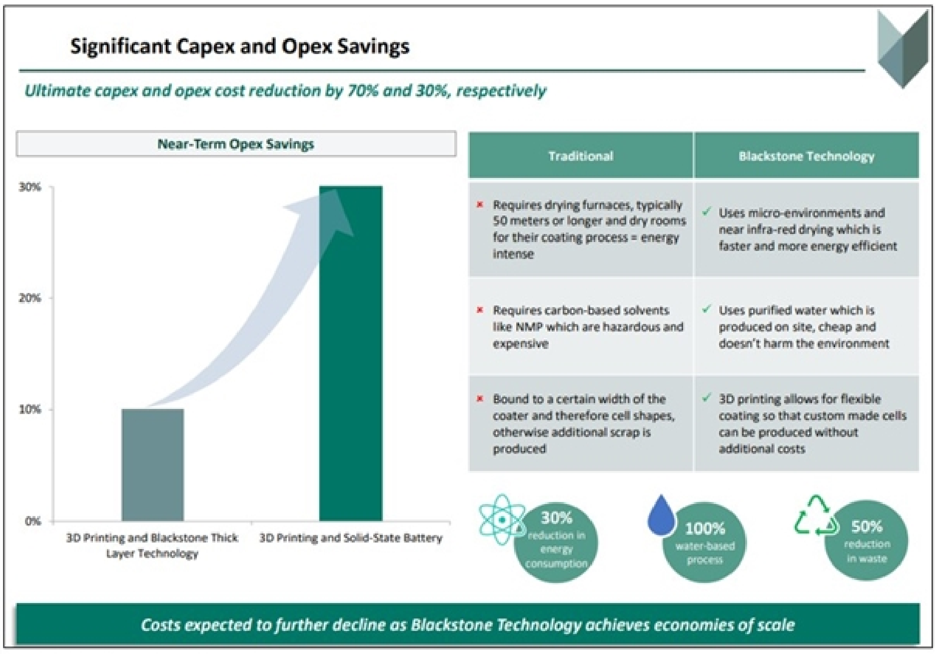
Still growing list of achievements

After its market rediscovery of a promising battery tech firm in 2020, Blackstone Resources continues to achieve newer milestones. Below is a summary of the key events/breakthroughs over the past couple of months:

1/ in May 2021, ownership of lithium concession assets increased by 900 hectares (to 8,900 hectares);
2/ in June 2021, unveiled plans to list Blackstone Technology GmbH (fully-owned subsidiary) in the US, and leadership team was beefed up with the appointment of a CTO;
3/ in July 2021, announced plans for a ten-fold increase in lithium-ion battery capacity to 500MWh by 2022; signed / discussed letter of intent worth combined value of €184m with diverse clientele; appointed a CFO; received permit to begin production of 3D-printed lithium-ion battery cells and, simultaneously, applied for funding from Sächsische Aufbaubank;
4/ in August 2021, signed a supply cooperation agreement with IBU-tec advanced materials AG for the key cathode material, i.e. lithium iron phosphate, and secured €40m of debt for expansion of battery manufacturing;
5/ in September 2021, appointed a CMO and decided to commission a new development laboratory for battery cell research at its Döbeln facility; and
6/ in October 2021, 3D-printed battery cells' manufacturing passed critical tests.

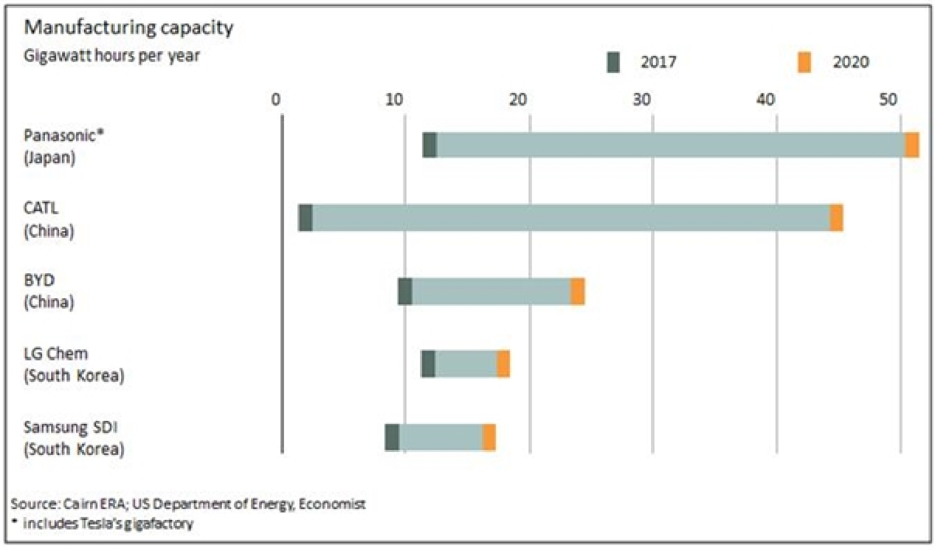
As a result, Blackstone presented its first lithium-ion battery – entirely produced in Germay – at a press conference on 9 December 2021.

Critical advantages



Source: Company Presentation 2022

Asian dominance in the battery space



As markets have over the years become open to alternate energy-powered vehicles, the Asian firms, besides of course Tesla, capitalised on the opportunity and, hence, today, they collectively account for most global battery manufacturing (capacities). This has also been a function of them executing various long-term supply agreements for key battery metals. Such a dominance hasn't been comforting for the developed world, especially in the context of escalating trade frictions.

While Europe has been a front-runner in implementing stricter (economic) regulations to combat the effect(s) of climate change, it has clearly lagged behind with respect to its know-how of energy storage technology. Such a scenario opened a big window of opportunity for players like Blackstone. Remember, in December 2019, the European Commission approved €3.2bn of funding support for R&D across the battery value chain. This, along with Germany's own efforts to help create a local battery giant, is likely to ensure that adequate funding/grants are made available to home-grown companies to combat the Asian dependency threat.

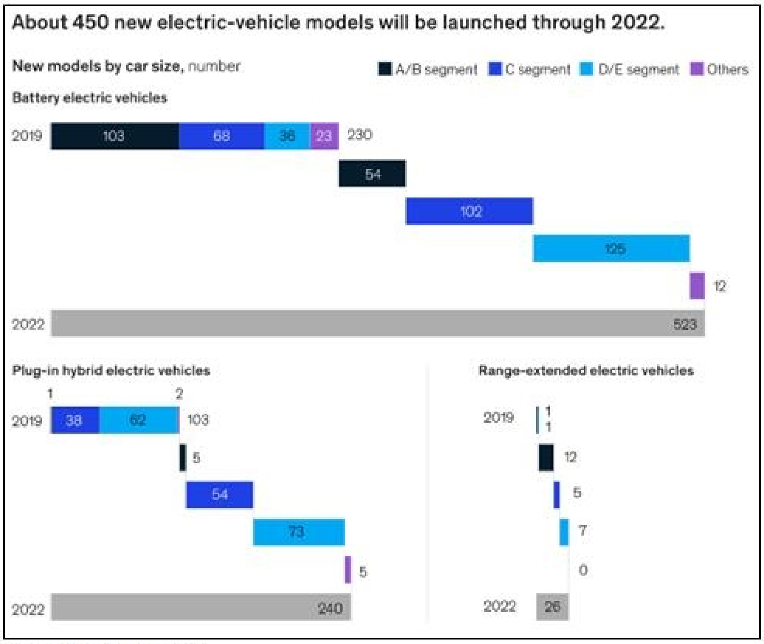
But Europe is making-up for lost ground

LARGE SERIES SCALE			
1 | LG Chem	South Korea	Wroclaw, Poland	6 GWh[1]
2 | Samsung SDI	South Korea	Goed, Hungary	3 GWh
3 | SK Innovation	South Korea	Komarom, Hungary	in construction
4 | Northvolt AB	Sweden	Skellefteå, Sweden	in construction
5 | CATL	China	Erfurt, Germany	in planning
6 | Farasis	USA	Bitterfeld-Wolfen, Germany	in planning
SMALL SERIES AND PROTOTYPE SCALE (SELECTION)			
7 | Leclanché	Switzerland	Yverdon-les-Bains, Switzerland	~1 GWh
8 | EAS	Germany	Nordhausen, Germany	< 1 GWh
9 | Saft	France	Bagnolet, France	~2 GWh
10 | Custom Cells	Germany	Itzehoe, Germany	< 1 GWh
11 | Volkswagen	Germany	Salzgitter, Germany	< 1 GWh
12 | Varta	Germany	Ellwangen, Germany	< 1 GWh
13 | BMW	Germany	Munich, Germany	< 1 GWh
14 | Liacon	Germany	Dresden, Germany	< 1 GWh

Source: Blackstone Resources Investor Presentation November 2020

Considering the strategic importance of localised battery-making, Europe has expedited its investments and/or JVs with industry pioneers. As a result, various new capacities have already been built or are being planned/constructed (illustrated in the above chart). Moreover, new opportunities are being identified, including Panasonic, Equinor and Norsk Hydro, in November 2020, inking in an agreement to evaluate the prospect of establishing a pan-European battery venture. Even on the next-gen innovation front, the likes of Volkswagen, in June 2020, increased its investment in US-based QuantumScape for the joint development of solid-state batteries. However, even after these (mega-)investments, Blackstone's management expects Europe to witness 100GWH of supply shortage by 2025. Hence, in the next couple of years, more action in this space is still highly likely. This is good news, particularly on the following two counts.

1# large scale EV roll-out is in top gear



Source: McKinsey July 2020

2# Europe's hunger for EVs is gathering momentum

Given that Europe had always been a big market for diesel-powered SUVs, its participation in the EV revolution, even after the VW Dieselgate scandal, had been slow – with China leading from the front. However, this trend changed in 2019 as Europe suddenly emerged as the biggest driver for global EV markets (evident in the below chart). While China was impacted by the withdrawal of state subsidies – though a temporary bottleneck, Europe's growth was broad-based – with almost every country posting double-digit growth. And now, with stricter emission norms and the EU's COVID-19 stimulus further reinforcing greener ambitions, Europe should continue doing well. Remember, despite COVID-19, Europe's 2020 sales for BEVs + PHEVs were up 137% vs. 12% and 4% growth in China and US, respectively. In H1 21, Europe sustained its exceptional momentum (+157%), while both the US and China were back on track – up 166% and 197%, respectively.

Metal diversity – for now, pushed to the backburner

Blackstone, like any other mining major, owns a number of assets in different parts of the world. The group holds 25 exploration licences in Norway via its 100%-owned subsidiary 'BS Norway Limited', giving it access to gold, manganese and rare earth metals. While the Norwegian asset is still a couple of months away from hitting production stage, the immediate-term focus is on the gold ore processing mill – akin to a safe-haven asset, given the macro downturn hedge – in Peru (whose S&P credit rating stands at BBB+ with a negative outlook), which is strategically located 230km north of Lima, where the mill purchases ore from 400 licenced miners located within a 100km radius. Production at is guided to begin soon, which should be an opportune start – given the prevalent gold market tailwinds. In H1 19, the group increased its stake in South America Invest Limited (SAI), the operator of the Peruvian gold mill, from 20% to 51% via a stake purchase from Adriatica (details in 'Worth Knowing').

Moreover, through its investment in SAI, the group also holds the permit for a manganese deposit in Colombia. After a slow start, this Colombian asset is gradually guided to reach impressive nameplate production capacity of >0.5mt by 2022. By then, sustained recovery of global steel markets and the faster up-tick of EVs and, hence, batteries, should result in healthier manganese demand (and prices).

While Blackstone had long held a controlling stake (70%) in the Mongolian molybdenum deposit, in H1 19, it sold this stake to Adriatica – though it secured a 3% royalty on revenue and offtake rights (details in 'Worth Knowing' section). Similarly, in H1 20, the group sold its rare earth metal interest in the Norwegian assets, but it retained a buy-back option and right to a 2% royalty until 2030.

Apart from the above assets, Blackstone holds a minority stake (1%) in First Cobalt (Canada), the largest cobalt exploration company in North America, which has secured $5m in refinery expansion financing from Glencore. Moreover, in May 2019, the group acquired a Chilean company, giving Blackstone the rights to explore and exploit lithium mining projects via an agreement with a national partner over 8,900 hectares and 6,428 hectares, respectively of concessions in Chile.

Interestingly, the firm's ownership of various green transition metal assets could be a big long-term advantage, especially when the development of greenfield assets is proving to be a daunting task. As a case in point, Rio Tinto's ambitious Serbian lithium investment has now been shelved after various protests (citing environmental concerns) forced the Serbian government to cancel the miner's licences. Hence, the expectation of strong long-term demand growth being fuelled by greenfield investments warrants caution and ownership of assets – even if small – by the likes of Blackstone could result in massive value unlocking in the coming decades.

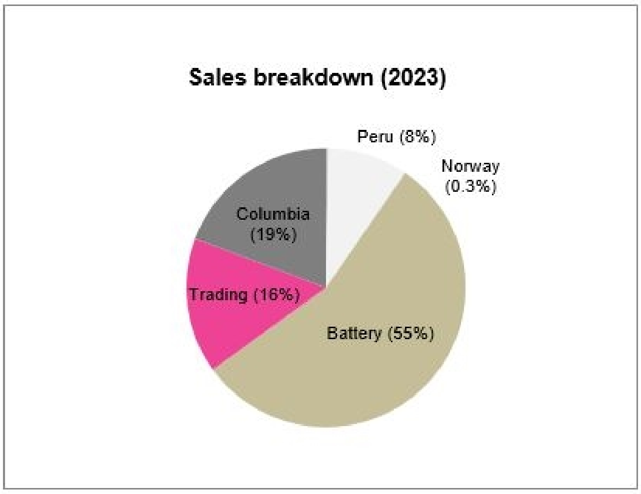
Overall, Blackstone has a host of mining projects in varying stages of implementation, which is a big operational risk. Fortunately, management's efforts to set up a trading (joint) venture (in Indonesia focused on nickel and iron ore), with the objective of leveraging its well-spread network of connections, should help bring the much-needed business stability via reduced vulnerability to commodity prices. Material trading exposure is precisely the reason why the likes of Glencore have to date managed to dodge bouts of acute market pressure.

However, COVID-19 seems to have hit the progress on the mining/smelting/trading side of the business and, hence, for now, most of the group's resources (time + money) are being funnelled towards the battery division – where the market fundamentals have instead solidified post the COVID-19 outbreak.

Fortunately, in late 2021, Blackstone managed to execute a stake sale in a subsidiary of its precious metal division – which is guided to result in CHF50m of proceeds in 2022.

Patient wait for diversity

As Blackstone's assets/businesses are not expected to start delivering immediately, the market's patience may continue to be tested, especially in the case of any development/operational issues/difficulties. However, once all divisions inch closer to their potential, the group should attain a better overall balance.



Source: AV estimates

Diverse business drivers

1/ Increasing global consciousness towards combating climate change should result in sustained healthy demand for (clean) energy storage (materials);
2/ Countercyclical business cushion via precious metals, which are in high demand in macro-economic downturns, due to their strong safe-haven characteristics;
3/ Heavy global infrastructure development/refurbishment needs should translate into demand growth for even the conventional base metals; and
4/ Both developed and developing markets should emerge as key long-term consumers.

Competitive front

Given Blackstone's unique-positioning, i.e. focus on battery tech plus presence across the mining value chain, there are no clear comparable firms.

On the battery side, while the likes of Panasonic, CATL and LG Chem seem like apt comparables, a pivotal difference is their focus on mass production of lithium-ion batteries (an old technology), while the likes of Blackstone are focused on pioneering the (next-gen) solid-state technology. Hence, Blackstone is better compared with (Bill Gates- and VW-backed) Quantumscape (>$15bn mkt cap) – which is investing heavily in solid-state technology. Both these firms are targeting similar energy cost (per kWh) efficiencies, but Quantumscape plans large scale production by 2027/28 while Blackstone is targeting a kick-start by as early as 2021/22. If Blackstone is successful in its ramp-up plans, this could trigger another re-rating and also make the firm an apt acquisition target for EV (battery) majors. Whereas, for mining, while the initiation of operations across assets is still awaited, the peers are relatively straightforward – comprising the likes of Franco Nevada, China Molybdenum and Albemarle.

COVID-19 implications

The pandemic has been a mixed bag for Blackstone Resources. While it has unleashed various operational difficulties/uncertainties for the mining/smelting/trading businesses, the reverse has been true for battery technology. In fact, COVID-19 became a major catalyst for pushing EV/clean-tech stories, which aptly is also reflected in the euphoric dash for Tesla's shares. With many countries coming up with even stricter plans to phase out fossil-powered vehicles, there should be a bigger emphasis on evolving battery technology (targeting lower costs and improved energy density) – thereby pushing the investment case for battery research (and manufacturing) firms like Blackstone. Hence, despite the near-term business / macro uncertainties – resulting in the delayed kickstart at mining/smelting operations, the long-term attractiveness of Blackstone remains unchanged.

Divisional Breakdown Of Revenues

	Sector	12/20A	12/21E	12/22E	12/23E	Change 21E/20		Change 22E/21E	
						CHFM	of % total	CHFM	of % total
Total sales		**0.01**	**1.59** (1)	**80.5** (1)	**329** (1)	**2↑**	**100%**	**79↑**	**100%**
Norway	Diversified Minerals	0.00	0.00	0.00	0.96	0↑	0%	0↑	0%
Peru	Diversified Minerals	0.00	0.00	5.25	30.6	0↑	0%	5↑	7%
Battery	Batteries-Battery Sys	0.00	0.00	8.16	182	0↑	0%	8↑	10%
Trading	Diversified Minerals	0.00	1.59	28.3	51.7	2↑	101%	27↑	34%
Columbia	Diversified Minerals	0.00	0.00	38.8	63.4	0↑	0%	39↑	49%
Other		0.01	0.00	0.00	0.00	0↓	-1%	0↑	0%

1. Based on corporate figures; although varying discounts have been applied, wherever applicable

Key Exposures

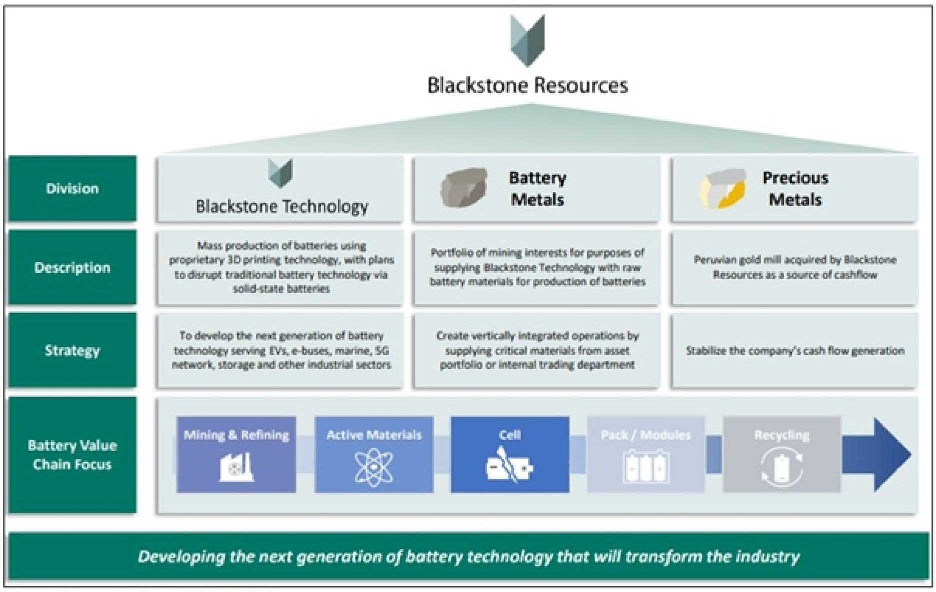
	Revenues	Costs	Equity
Dollar	80.0%	20.0%	0.0%
Emerging currencies	0.0%	50.0%	50.0%
Long-term global warming	30.0%	30.0%	40.0%

Sales By Geography

We address exposures (eg. how much of the turnover is exposed to the $) rather than sensitivities (say, how much a 5% move in the $ affects the bottom line). This is to make comparisons easier and provides useful tools when extracting relevant data.
Actually, the subject is rather complex on the ground. The default position is one of an investor managing in €. An investor in £ will obviously not react to a £ based stock trading partly in € as would a € based investor. In addition, certain circumstances can prove difficult to unravel such as for eg. a € based investor confronted to a Swiss company reporting in $ but with a quote in CHF... Sales exposure is probably straightforward but one has to be careful with deep cyclicals. Costs exposure is a bit less easy to determine (we do not allow for hedges as they can only be postponing the day of reckoning). How much of the equity is exposed to a given subject is rarely straightforward but can be quite telling
In addition, subjects are frequently intertwined. A $ exposure may encompass all revenues in $ pegged currencies and an emerging currency exposure is likely to include $ pegged currencies as well.
Exposure to global warming issues is frequently indirect and may require to stretch a bit imagination.

Money Making

Blackstone has no cash-flow generation capacity as of today and is essentially an asset gatherer, which gradually planned to pivot away from precious metals and into battery materials, and thereafter into battery manufacturing. While it largely remains a funding bet at this juncture, after the COVID-19 outbreak, the near-term business focus has shifted towards battery R&D as the ramp-up plans at the respective mining/smelting/trading assets have been delayed. While this shift isn't comforting from a medium-term cash-flow standpoint, the group's recent funding commitments/agreements allay any financing concerns.



Source: Company Presentation 2022

Mining's cash positioning

With the operational start at the Peruvian gold ore processing mill, Blackstone's immediate-term cash-flow situation should ease, given that this mill's ore is procured from nearby mines and the output is a semi-pure alloy of gold and silver, hence, processing isn't as complex. Moreover, as gold demand tends to more inelastic vis-à-vis other base metals (which may have other better alternatives), the cash flows tend to be more stable. Further support should surface once other assets start producing meaningfully, which should also mark the beginning of cash flows from the sale of critical EV materials. However, these asset's low grades and/or high cost should result in weaker margins vis-à-vis large-cap miners.

Trading to provide further support

With the addition of trading, Blackstone should end-up improving the safety profile of its cash flows as periods of acute market volatility tend to be the apt operating environment for traders to capitalise on market imperfections. Though we don't expect this division to be a key source of dividend for Blackstone's shareholders, like the case for Glencore, where $1bn of dividends is almost guaranteed via trading income, it should certainly be an important source of funding for the group's numerous growth initiatives.

Brave battery bet

Blackstone's battery foray is a high risk-high return wager akin to a venture capital investment. Hence, apart from successful R&D – which again is a complex matter, much depends on sustained receipt of (state-sponsored) financing/grants. The group's integrated business structure is only an early-stage advantage, and attainment of targeted improvements in batteries' energy density and cost of development should be formidable challenges. Hence, the markets are likely to be critical of how this division progresses. Fortunately, the group attained various R&D milestones since H2 20, thereby opening the critical funding window.

Negative FCFs are here to stay

Even though Blackstone should end-up attaining average c.12% EBITDA margin during 2022-23, the group's medium-term aggressive growth pursuits are likely to prevent it from attaining a positive FCF position. Also, the immediate-term performance in conventional return metric terms (like ROCE and ROE) should remain weak – although 2020 was skewed by the material profit on asset disposals. Fortunately, given that most of the group's borrowings are owed to key shareholders (details in 'Debt' section), the possibility of a near-term cash squeeze remains low, unless realisation of (state) grants becomes difficult.

Divisional EBITDA/R

	12/20A	12/21E	12/22E	12/23E	Change 21E/20		Change 22E/21E	
					CHFM	of % total	CHFM	of % total
Total	**-2.76**	**-8.76** [1]	**0.20** [1]	**68.0** [1]	**-6**↓	**100%**	**9**↑	**100%**
Norway	0.00	-1.19	-1.60	-0.97	-1↓	20%	0↓	-5%
Peru	0.00	-0.37	0.79	7.63	0↓	6%	1↑	13%
Battery	0.00	-2.50	1.41	60.5	-3↓	42%	4↑	44%
Trading	0.00	-0.06	0.71	2.37	0↓	1%	1↑	9%
Columbia	0.00	-3.23	1.29	3.26	-3↓	54%	5↑	50%
Other/cancellations	-2.76	-1.41	-2.38	-4.82	1↑	-23%	-1↓	-11%

1. Based on corporate figures; although varying discounts have been applied, wherever applicable

Divisional EBITDA/R margin

	12/20A	12/21E	12/22E	12/23E
Total	**ns**	**-550%**	**0.25%**	**20.7%**
Norway				-101%
Peru			15.0%	24.9%
Battery			17.2%	33.2%
Trading		-3.57%	2.50%	4.58%
Columbia			3.31%	5.14%

Valuation

For the DCF valuation, in the out-years we have incorporated 4% growth rate for all factors, taking into consideration the high-growth potential of Blackstone's EV-related metals and battery offerings.

Our SOTP valuation is based on the long-term EV/Sales multiples for Blackstone's listed peers in the respective divisions – excluding Battery, which has been valued using the GAV approach. However, given Blackstone's smaller operational scale vis-vis the global mining, trading and battery giants, and high execution risk, we have incorporated a material valuation discount for the respective divisions. Yet, despite the cautiousness, the SOTP measure offers the highest upside.

For the peer-based valuation, we have taken on board a combination of mining companies and (EV) battery-related proxies. However, given the (execution-related) risks, we have incorporated a 20% discount for the relative valuation measures.

Valuation Summary

Benchmarks		Values (CHF)	Upside	Weight
DCF		4.00	750%	40%
NAV/SOTP per share		4.65	888%	40%
P/E	*Peers*	0.24	-50%	5%
EV/Ebitda	*Peers*	0.94	100%	5%
P/Book	*Peers*	0.94	100%	5%
Dividend Yield	*Peers*	0.00	-100%	5%
Target Price		**3.56**	**658%**	

Comparison based valuation

Computed on 18 month forecasts	P/E (x)	Ev/Ebitda (x)	P/Book (x)	Yield(%)
Peers ratios	23.3	6.36	3.19	0.89
Blackstone Resources's ratios	ns	2.40	0.15	0.00
Premium	-20.0%	-20.0%	-20.0%	-20.0%
Default comparison based valuation (CHF)	**0.24**	**0.94**	**0.94**	**0.00**
CATL	38.5	23.8	8.56	0.18
LG Chem	15.3	6.37	1.51	1.89
Franco Nevada	36.4	21.5	3.91	0.92
Albemarle Corp	14.5	10.6	3.13	0.80
Panasonic Corp	10.7	5.08	0.88	2.72
Boliden	7.48	4.62	1.50	3.48
Umicore	19.3	10.8	3.06	2.15
Johnson Matthey	9.93	6.99	1.44	3.53
Livent	17.8	10.6	2.52	0.00
Varta	30.7	13.5	5.95	2.28
Quantumscape	-10.8	-11.5	2.62	n/a

DCF Valuation Per Share

WACC	%	8.90	Avg net debt (cash) at book value	CHFM	-15.0
PV of cashflow FY1-FY11	CHFM	54.3	Provisions	CHFM	-0.43
FY11CF	CHFM	24.5	Unrecognised actuarial losses (gains)	CHFM	0.00
Normalised long-term growth"g"	%	2.00	Financial assets at market price	CHFM	52.2
Sustainability "g"	%	1.60	Minorities interests (fair value)	CHFM	94.4
Terminal value	CHFM	336	Equity value	CHFM	171
PV terminal value	CHFM	143	Number of shares	Mio	42.7
PV terminal value in % of total value	*%*	*72.5*	**Implied equity value per share**	**CHF**	**4.00**
Total PV	CHFM	198	Sustainability impact on DCF	%	-4.64

Assessing The Cost Of Capital

Synthetic default risk free rate	%	3.50	Company debt spread	bp	400
Target equity risk premium	%	5.00	Marginal Company cost of debt	%	7.50
Tax advantage of debt finance (normalised)	%	30.0	**Company beta (leveraged)**	**x**	**1.08**
Average debt maturity	Year	5	Company gearing at market value	%	14.9
Sector asset beta	x	1.08	Company market gearing	%	12.9
Debt beta	x	0.80	**Required return on geared equity**	**%**	**8.90**
Market capitalisation	CHFM	20.1	Cost of debt	%	5.25
Net debt (cash) at book value	CHFM	2.99	**Cost of ungeared equity**	**%**	**8.90**
Net debt (cash) at market value	CHFM	0.00	WACC	%	8.90

DCF Calculation

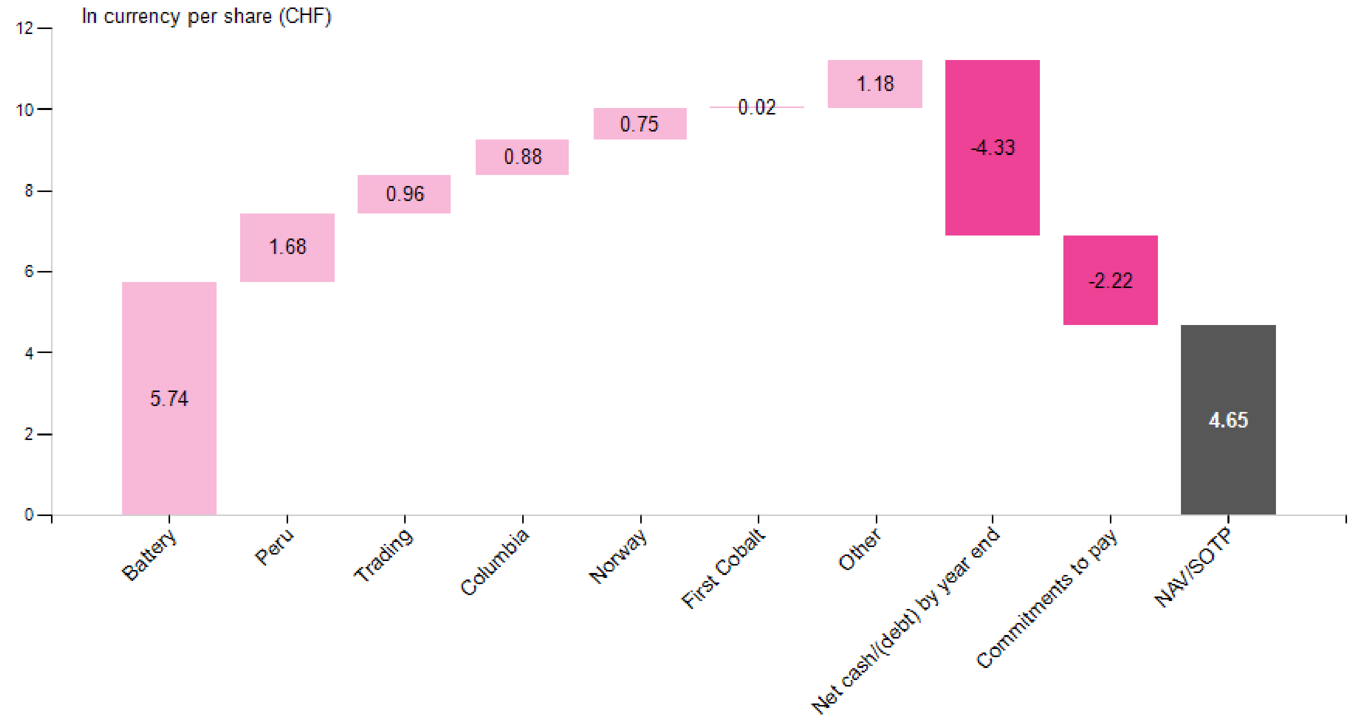
		12/20A	12/21E	12/22E	12/23E	Growth	12/24E	12/31E
Sales	CHFM	0.01	1.59	80.5	329	**4.00%**	342	450
EBITDA	CHFM	-3.06	-8.76	0.20	68.0	**4.00%**	70.7	93.1
EBITDA Margin	*%*	*-32,228*	*-550*	*0.25*	*20.7*		*20.7*	*20.7*
Change in WCR	CHFM	-0.23	-6.27	-6.64	-7.89	**4.00%**	-8.21	-10.8
Total operating cash flows (pre tax)	CHFM	-3.45	3.37	-6.44	60.1		62.5	82.3
Corporate tax	CHFM	0.16	0.74 (2)	-0.85 (2)	-2.38	**4.00%**	-2.48	-3.26
Net tax shield	**CHFM**	**-0.19**	**-0.08**	**-0.02**	**0.20**	**4.00%**	**0.21**	**0.27**
Capital expenditure	CHFM	0.00	-40.0	-56.9	-70.0	**4.00%**	-72.8	-95.8
Capex/Sales	*%*	*0.00*	*-2,511*	*-70.7*	*-21.3*		*-21.3*	*-21.3*
Pre financing costs FCF (for DCF purposes)	CHFM	-3.49	-36.0	-64.2	-12.1		-12.6	-16.5
Various add backs (incl. R&D, etc.) for DCF purposes	CHFM						40.6 (3)	40.6 (3)
Free cash flow adjusted	**CHFM**	**-3.49**	**-36.0**	**-64.2**	**-12.1**		**28.0**	**24.0**
Discounted free cash flows	**CHFM**	**-3.49**	**-36.0**	**-59.0**	**-10.2**		**21.7**	**10.2**
Invested capital	CHF	96.9	135	182	215		264	668

2. To benefit from corporate-stated tax loss carryforwards
3. To be impacted by falling capex requirements for the battery business

NAV/SOTP Calculation

	% owned	Valuation technique	Multiple used	Valuation at 100% (CHFM)	Stake valuation (CHFM)	In currency per share (CHF)	% of gross assets
Battery	100%	GAV		245	245 [1]	5.74	51.2%
Peru	100%	EV/Sales	1	71.7	71.7	1.68	15.0%
Trading	100%	EV/Sales	0.5	40.8	40.8	0.96	8.53%
Columbia	100%	EV/Sales	1	37.5	37.5	0.88	7.84%
Norway	100%	EV/Sales	1	31.9	31.9	0.75	6.67%
First Cobalt	1.00%	- Listed -		84.2	0.84	0.02	0.18%
Other					50.5 [2]	1.18	10.6%
Total gross assets					**478**	**11.2**	**100%**
Net cash/(debt) by year end					-185 [3]	-4.33	-38.7%
Commitments to pay					-94.8	-2.22	-19.8%
Commitments received							
NAV/SOTP					198	4.65	41.5%
Number of shares net of treasury shares - year end (Mio)					**42.7**		
NAV/SOTP per share (CHF)					**4.65**		
Current discount to NAV/SOTP (%)					**89.9**		

1. Based on Jefferies' 2021 assessment; though apt discounts have been applied (wherever applicable), taking on board the execution risk(s)
2. Comprises financial assets, adjusted for the 1% stake in First Cobalt
3. Adjusted for borrowings to scale-up battery venture



Debt

At the end of 2020, Blackstone's total debt stood at CHF14m. The majority (c.64%) of the group's borrowings was owed to a related party, i.e. Ulrich Ernst (CHF8.8m; CEO and largest shareholder of Blackstone). On the other hand, third-party borrowings were CHF5m, largely comprising convertible notes, right-of-use liabilities and a COVID-19 bridging loan. With well spread-out debt maturities, there's no near-term debt repayment pressure, which is a fortunate positioning, given that the respective divisions remain in the investment phase and, hence, negative FCFs should sustain.

However, compared with 2019, the group's total debt reduced significantly, with Adriatica's obligations being retired completely. Hence, the group has adequate balance sheet flexibility to pursue its (battery) growth initiatives. Moreover, Blackstone has secured: 1/ CHF30m equity funding commitment from Luxembourg-based GEM Global Yield (an alternative investment group); 2/ CHF20m convertible loan facility valid upto three years; and 3/ €40m of debt funding secured in August 2021, thereby allaying any near-term financing concerns, especially for battery R&D.

Owner-financed debt structure has played an instrumental role in averting any credit crisis to date, given that most of the group's assets are still in the development stage and (healthy) cash flows are missing. However, as Blackstone pursues its ambitions to make a major (capital-intensive) foray into battery manufacturing, access to (state-sponsored grants) and/or additional (external) borrowings should be a critical determinant of the group's overall success.

While the 2022 credit risk ('C' rating) is a reflection of high (battery) investments resulting in negative FCFs and the delayed kick-start at mining/smelting operations, the group is well-positioned – given that apt financing has been secured to pursue medium-term growth ambitions. Moreover, with the end 2021 stake sale in the precious metal division – guided to result in CHF50m of proceeds in 2022, the firm has strengthened its internal cash positioning, thereby also lowering dependence on external borrowings.

Detailed financials at the end of this report

Funding - Liquidity

		12/20A	12/21E	12/22E	12/23E
EBITDA	CHFM	-3.06	-8.76	0.20	68.0
Funds from operations (FFO)	CHFM	-3.10	10.1	-0.71	66.3
Ordinary shareholders' equity	**CHFM**	**39.0** (4)	**87.7**	**119**	**148**
Gross debt	CHFM	13.9 (5)	22.7	27.4	19.6
+ Gross Cash	CHFM	0.59	19.7	60.4 (6)	51.3
= Net debt / (cash)	**CHFM**	**13.3** (5)	**2.99**	**-33.0** (6)	**-31.7**
Gearing (at book value)	%	53.9	9.27	-12.6	-21.8
Equity/Total asset (%)	%	38.1	46.0	63.8	67.4
Adj. Net debt/EBITDA(R)	*x*	*-4.34*	*-0.34*	*-163*	*-0.47*
Adjusted Gross Debt/EBITDA(R)	*x*	*-4.58*	*-2.54*	*132*	*0.28*
Adj. gross debt/(Adj. gross debt+Equity)	*%*	*26.4*	*20.2*	*18.3*	*11.2*
Ebit cover	*x*	*-6.89*	*-35.4*	*-299*	*-34.9*
FFO/Gross Debt	*%*	*-22.2*	*45.4*	*-2.64*	*354*
FFO/Net debt	*%*	*-23.4*	*338*	*2.14*	*-209*
FCF/Adj. gross debt (%)	*%*	*-28.1*	*-162*	*-240*	*-62.1*
(Gross cash+ "cash" FCF+undrawn)/ST debt	*x*	*-2.73*	*-13.4*	*-3.90*	*50.6*
"Cash" FCF/ST debt	*x*	*-2.72*	*-29.5*	*-65.6*	*-14.8*

4. Impacted by profit on (Norwegian) asset disposal
5. Impacted by non-cash effect of (Norwegian) asset disposal
6. To be impacted by (precious metal asset) minority stake disposal

Worth Knowing

Control structure

While Ulrich Ernst (CEO) is clearly in control of Blackstone Resources, the 2018 listing of existing shares (i.e. no placing) has: 1/ led to a change in the float; and 2/ shed light on two structural shareholders, Adriatica (a BVI-based entity) and Marcor, respectively. As far as the float is concerned, smaller shareholders took the listing opportunity to sell and thereby Blackstone's share price collapsed from CHF13.5 to less than CHF1. Although, the post-IPO shareholding has widened and includes UBS Fund, Credit Suisse Fund, Basler Kantonalbank, Erste Bank Group, Bank J Saffra Sarasin, Blackrock Asset Management, Deutsche Bank and Ethos Foundation as part of their fund management operations. As for the two structural shareholders, both happen to be closely-held private companies. Public information with respect to their key businesses/assets and ownership structure is nil. Thus, it is impossible to decipher the exact economic implications of the dealings between the key shareholders.

The transition needs to be organised

Since the IPO, Blackstone has beefed up its management team to prepare gradually for the transition, i.e. the inevitable split between ownership and management. While it remains to be seen if there is a major effect on operations, it certainly looks like a risky transition for two reasons: 1/ Ulrich Ernst has so far played a host of roles and, hence, the change of guard is bound to unleash near-term uncertainties; and 2/ the group is still far away from achieving potential across businesses, including the ambitious recent foray into the battery business.

Battery (R&D + funding) milestones – triggering a re-rating

According to management, the following battery division breakthroughs were achieved in July 2020: 1/ the world's first battery cells with thick printed electrodes were successfully manufactured and tested; these printed batteries were claimed to have higher energy density (>20%) vs. traditional lithium-ion batteries; 2/ manufacturing was undertaken using environmently-friendly electrodes vs. chemical electrodes – which have the risk of high inflammation – used in lithium-ion batteries; and 3/ hence, large-scale assembly line plans were implemented to produce the above-discussed batteries / cells at high speed. Apart from these achievements, the group also began testing the printing of solid-state battery cells. Then, in mid-September 2020, the group announced the achievement of some key milestones for its proprietary 3D-printing technology to print lithium ion solid-state batteries. Management claimed that this printing process entails significantly lower costs and introduces high production flexibility, besides increasing energy density. Unsurprisingly, these events were followed by various funding commitments. In October 2020, GEM Global made an equity commitment of CHF30m for implementing commercial steps for the battery technology and related metals. In December 2020, the Swiss Innovation Agency, i.e. Innosuisse, approved Blackstone's grant application to provide 50% funding for a CHF1.3m project.

Then, in January 2021, the battery project secured EU grants, which was followed by a CHF20m convertible loan facility valid for three years.

Shareholders

Name	% owned	Of which % voting rights	Of which % free to float
Ulrich Ernst	63.5%	63.5%	0.00%
Marcor Holdings Ltd.	9.83%	9.83%	0.00%
Jupiter Asset Management	5.90%	5.90%	5.90%
Apparent free float			**26.6%**

Sustainability

Sustainability score

Sustainability is made of analytical items contributing to the E, the S and the G, that can be highlighted as sustainability precursors and can be combined in an intellectually acceptable way. This is the only scale made available

	Score	Weight
Governance		
Independent directors rate	**7/10**	25%
Board geographic diversity	**6/10**	20%
Chairman vs. Executive split	✗	5%
Environment		
CO^2 Emission	**1/10**	25%
Water withdrawal	**1/10**	10%
Social		
Wage dispersion trend	**0/10**	5%
Job satisfaction	**10/10**	5%
Internal communication	**10/10**	5%
Sustainability score	**4.2/10**	100%

Governance & Management

Blackstone's Board comprises three directors, while its management team has seven people. The Board is chaired by Ulrich Ernst – who is also the group's President, CEO, largest shareholder and major lender. This creates a key-man risk given that a host of operational/strategic/financial responsibilities hinge on one individual. 2020 compensation (excluding shares, options and social security) for the Board of directors and C-level management – including new hires – amounted to CHF563k (+145% yoy).

Regulatory risks/headwinds

While Blackstone Resources' share price had been in a downward spiral since peaking in early-2021, the negative sentiment in 2022 was further aggravated when FINMA – Swiss Financial Market Supervisory Authority – accused the firm of the following – 1/ trading and information activities, which drove up the share price; and 2/ breaches of disclosure obligations. The regulator didn't however impose any fine/other restrictions on the firm.

While Blackstone has dismissed these allegations (referring to them as 'completely unjustified') and decided to challenge the injunction in court, the near-term is likely to be marred by negative sentiment associated with these developments, which isn't good news for minority shareholders – who should be keeping a close eye on the audited results to be reported by July 2022. As a result, a 30% discount (using analyst's joker view functionality) has been incorporated for Blackstone's governance score.

Governance score

Company (Sector)	Independent board
4.6 (7.3)	Yes

Parameters	Company	Sector	Score	Weight
Number of board members	3	8	10/10	5.0%
Board feminization (%)	0	28	1/10	5.0%
Board domestic density (%)	66	65	6/10	10.0%
Average age of board's members	63	59	4/10	5.0%
Type of company : Small cap, controlled			4/10	10.0%
Independent directors rate	66	48	7/10	20.0%
One share, one vote			✓	10.0%
Chairman vs. Executive split			✗	0.0%
Chairman not ex executive			✗	5.0%
Full disclosure on mgt pay			✓	5.0%
Disclosure of performance anchor for bonus trigger			✗	5.0%
Compensation committee reporting to board of directors			✓	5.0%
Straightforward, clean by-laws			✓	15.0%
Analyst's Joker View			-30%	
Governance score			**4.6/10**	**100.0%**

Management

Name			Function	Birth date	Date in	Date out	Compensation, in kCHF (year) Cash	Equity linked
Ulrich ERNST	M		CEO	1947	1995			
Marco DAZZI	M		CFO	1967	2019		118 (2020)	
Michael HINGST	M		COO	1967	2014		53.1 (2020)	
Ingo MEYER	M		CTO	1965	2014		53.4 (2020)	
Holger GRITZKA	M		Member of the management board	1968	2019		112 (2020)	
Morné MOOLMAN	M		Member of the management board	1980	2020		26.9 (2020)	
Paul SCHLATTER	M		Member of the management board	1970	2018		169 (2020)	

Board of Directors

Name			Indep.	Function	Completion of current mandate	Birth date	Date in	Date out	Fees / indemnity, in kCHF (year)	Value of holding, in kCHF (year)
Ulrich ERNST	M		✗	President/Chairman of th...		1947	1995		10.7 (2020)	
Mathi ALAGAN	M		✓	Member		1958	2020		10.0 (2020)	
Dr. Marc WEBER	M		✓	Member		1971	2020		10.7 (2020)	

Environmental score

Data sets evaluated as trends on rolling calendar, made sector relative

Parameters	Score	Sector	Weight
CO^2 Emission	1/10	5/10	30%
Water withdrawal	1/10	5/10	30%
Energy	1/10	5/10	25%
Waste	1/10	5/10	15%
Environmental score	**1.00**		**100%**

Company (Sector)

1.00 (4.98)

Environmental metrics

Sector figures

Company	Country	Environment score	Energy (total, in GJ)	CO2 Emissions (in tons)	Water Withdrawal (in m3)	Waste (total, (in tons)
Datwyler		5/10	889,484	89,387	1,564,028	14,119
Dürr		8/10	442,832	48,372	175,587	10,556
KION Group		9/10	2,271,351	200,980	584,000	76,307
NORMA Group		8/10	468,612	43,449	160,586	12,905
PNE AG		1/10				
SFS Group		2/10		112,441		
VAT Group		1/10				
Blackstone Resources		1/10				
AutoStore		4/10		737		
Siemens		9/10	9,863,000	594,000	15,050,000	275,500
ABB		9/10	5,590,800	404,700	2,839,000	194,000
Schneider Electric		9/10	4,771,768	294,051	2,072,263	136,816
Alstom		9/10	3,592,800	230,000	796,000	34,459
Atlas Copco		10/10	1,386,000	52,000	395,000	35,071
Sandvik		9/10	7,337,000	417,000	7,858,000	352,000
Vestas Wind Systems		9/10	2,656,800	102,000	378,000	70,000
Schindler		6/10	2,267,719	172,474	541,395	41,826
Siemens Gamesa Renewable En...		9/10	1,153,471	28,805	553,270	63,127
Kone		1/10	1,905,120	130,900	328,200	37,400
GEA Group		8/10	915,239	50,803	357,849	13,037
Metso Outotec		7/10	1,482,000	134,927	1,271,000	63,700
Alfa Laval		10/10	1,158,077	28,458	665,000	25,923
Wärtsilä		6/10	1,339,000	90,773	11,348,000	16,020
Prysmian		4/10	9,448,439	832,938	8,847,815	190,984
IMI		5/10	618,387	44,130		
FLSmidth & Co		6/10		34,737	201,997	
Sulzer		7/10	878,109	81,339	987,576	19,546
Legrand		9/10	1,630,800	139,000	727,000	56,000
Bilfinger		3/10		59,373		
Quadient		10/10	64,346	9,527	27,313	1,056
Nexans		4/10	3,976,408	252,999	1,702,391	70,670
OC Oerlikon		7/10	1,403,280	146,300	706,400	20,400
Nordex SE		8/10	430,625	14,788	99,100	21,407
Georg Fischer		4/10	3,092,000	284,000	2,013,000	83,000
Elecnor		2/10		63,959		38,012
ANDRITZ		5/10	2,012,203	120,700	954,854	40,739
Heidelberger Druck		7/10	878,400	79,533	149,169	24,650
Aalberts		5/10	3,835,000	257,000	1,567,000	
Rieter		5/10	350,002	46,000	237,643	6,500

Danieli & Co		2/10	7,941,000	767,744		
Bekaert		2/10	16,477,200	1,454,875	8,088,000	
Bucher Industries		7/10	1,184,828	80,317	0	
Krones		7/10	422,157	34,155	183,534	1,657
Jungheinrich Pref.		6/10	802,505	42,166		16,275
KUKA		9/10	283,295	27,569	93,355	5,689
Burckhardt Compression		7/10	24,250		24,800	341
HUBER+SUHNER		7/10	173,448	11,203	915,933	3,941
RATIONAL		9/10	49,255	2,299	22,088	1,811
Semperit		2/10	5,662,998	422,536	9,900,000	24,890
Komax		7/10	22,777		2,880	42
Schweiter Technologies		2/10	1,494,202	110,645		19,285
Jenoptik		9/10	223,992	7,714	72,009	1,354
Bossard		1/10				
Interroll		1/10				
ITM Power		5/10			0	39
Ocado Group PLC		4/10	1,693,127	118,846		

Social score

Company (Sector)

5.2 (6.4)

Quantitative metrics (67%)

Set of staff related numerical metrics available in AlphaValue proprietary modelling aimed at ranking on social/HR matters

Parameters	Score	Weight
Staffing Trend	10/10	20%
Average wage trend	1/10	35%
Share of added value taken up by staff cost	1/10	25%
Share of added value taken up by taxes	1/10	20%
Wage dispersion trend	0/10	0%
Pension bonus (0 or 1)	0	
Quantitative score	2.8/10	100%

Qualitative metrics (33%)

Set of listed qualitative criterias and for the analyst to tick

Parameters	Score	Weight
Accidents at work	10/10	25%
Human resources development	10/10	35%
Pay	10/10	20%
Job satisfaction	10/10	10%
Internal communication	10/10	10%
Qualitative score	10.0/10	100%

AlphaValue analysts tick boxes on essential components of the social/HR corporate life.
Decision about ticking Yes or No is very much an assessment that combines the corporate's communication on relevant issue and the analyst's better judgment from experience.

Qualitative score

Parameters	Yes ✔ / No ✘	Weight
Accidents at work		**25%**
Set targets for work safety on all group sites?	✔	10.0%
Are accidents at work declining?	✔	15.0%
Human resources development		**35%**
Are competences required to meet medium term targets identified?	✔	3.5%
Is there a medium term (2 to 5 years) recruitment plan?	✔	3.5%
Is there a training strategy tuned to the company objectives?	✔	3.5%
Are employees trained for tomorrow's objectives?	✔	3.5%
Can all employees have access to training?	✔	3.5%
Has the corporate avoided large restructuring lay-offs over the last year to date?	✔	3.5%
Have key competences stayed?	✔	3.5%
Are managers given managerial objectives?	✔	3.5%
If yes, are managerial results a deciding factor when assessing compensation level?	✔	3.5%
Is mobility encouraged between operating units of the group?	✔	3.5%
Pay		**20%**
Is there a compensation committee?	✔	6.0%
Is employees' performance combining group AND individual performance?	✔	14.0%
Job satisfaction		**10%**
Is there a measure of job satisfaction?	✔	3.3%
Can anyone participate ?	✔	3.4%
Are there action plans to prop up employees' morale?	✔	3.3%
Internal communication		**10%**
Are strategy and objectives made available to every employee?	✔	10.0%
Qualitative score	10.0/10	100.0%

Staff & Pension matters

Blackstone operates a defined benefit plan in Switzerland and a defined contribution plan in Mongolia. At the end of 2020, the group recorded a net pension liability of c.CHF130k – which was around 0.1% of the current market capitalisation.

Detailed financials at the end of this report

Summary Of Pension Risks

		12/20A	12/21E	12/22E	12/23E
Pension ratio	**%**	**-0.77**	**-0.49**	**-0.54**	**-0.57**
Ordinary shareholders' equity	CHFM	39.0 [4]	87.7	119	148
Total benefits provisions	**CHFM**	**-0.30**	**-0.43**	**-0.63**	**-0.84**
of which funded pensions	*CHFM*	*-0.30*	*-0.43*	*-0.63*	*-0.84*
of which unfunded pensions	*CHFM*	*0.00*	*0.00*	*0.00*	*0.00*
of which benefits / health care	*CHFM*	*0.00*	*0.00*	*0.00*	*0.00*
Unrecognised actuarial (gains)/losses	CHFM	0.00	0.00	0.00	0.00

4. Impacted by profit on (Norwegian) asset disposal

Geographic Breakdown Of Pension Liabilities

		12/20A	12/21E	12/22E	12/23E
US exposure	%				
UK exposure	%				
Euro exposure	%				
Nordic countries	%				
Switzerland	%	100	100	100	100
Other	%				
Total	%	100	100	100	100

Recent updates

07/06/2022
End of coverage
Latest

AlphaValue has updated its model with the partial/preliminary 2021 figures. This will be the last time. This update will be available for another month.

Fact
Blackstone Resources AG, tracked by AlphaValue as sponsored research from January 2020, has pivoted away from mining assets to next-gen battery technology development. This pivot hinged on accessing some of the easy money that inundated this nascent industry. Sadly Blackstone Resources' efforts have been challenged by the Swiss market regulator (FINMA) in terms of Blackstone Resources' communication with markets and its auditors in terms of the delayed 2021 results.

Impact
AlphaValue is terminating coverage from 7 June 2022. This update and the earlier work will be freely available until 15 July 2022.

07/06/2022
Underlying potential hidden by on-going risks/uncertainties

Change in Target Price	CHF 3.67 vs 12.0	-69.4%

The FINMA allegations and, in general, negative market sentiment towards high-potential but not earnings-generative businesses/sectors has taken a major toll on Blackstone Resources. While the management has dismissed any wrong-doing/malpractices, our estimates have been rationalised and we await the audited 2021 results. For now, our target price has been slashed by c.69%.

Change in EPS	2021 : CHF 0.78 vs 0.80	-2.68%
	2022 : CHF -0.44 vs -0.45	ns

Based on the preliminary 2021 numbers disclosed by the management, our estimates have been tweaked. While the 2021 performance was a beneficiary of an asset disposal gain, a lack of earnings from the 'core' operations remains an unchanged reality. Also, the 2021 Annual Report is now targeted to be filed no later than 31 July 2022 as per a deadline extension granted by the Swiss Exchange Regulation AG.

Change in NAV	CHF 4.65 vs 25.4	-81.7%

On the back of a material sentiment reversal on battery tech firms (also impacting some of the bigger names) and the uncertainties/risks associated with FINMA allegations – which could also hamper near-term R&D initiatives and/or access to funding - the value of the Battery division (a key expected long-term value creator) has been slashed.

11/05/2022

Update on preliminary 2021 results

Latest

Blackstone Resources has released better-than-expected 2021 preliminary 'unaudited' operating results. Also, after the untimely exit of its auditor, the firm is likely to file its 2021 annual report in July 2022 – which has been authorised by the Swiss regulator. However, a big bone of contention for now happens to be clarification with respect to the Finma allegations and, hence, our estimates and recommendation remain under review, pending clarification(s) from management.

Fact

Blackstone Resources has released preliminary 2021 results, with the following highlights:

1/ Net sales were CHF49.2m (vs. AV estimate of CHF1.6m); H1 21 sales were 'NIL';
2/ EBITDA was CHF42.9m (vs. CHF8.8m loss); H1 21 loss was CHF1.6m;
3/ EBIT was CHF41.6m (vs. CHF33.4m); H1 21 loss was CHF2.3m;
4/ Net profit was CHF15.4m (vs. CHF34.3m); H1 21 loss was CHF2.7m;
5/ 2021-end total assets were CHF164m (vs. CHF191m); and
6/ 2021-end shareholders equity was CHF56.4m (vs. CHF70.2m).

Analysis

The above-mentioned figures are 'unaudited' numbers and a detailed release from management, with respect to the rationale for major performance revival in H2 21, is still awaited. It won't be a surprise if the gain on the disposal of a minority interest in a precious metal asset – claimed to be closed in late 2021 but cash guided to be realised in 2022 – was booked in sales and, hence, benefiting the respective profitability metrics. Although the correctness of such an accounting entry, if it happened at all, remains debatable.

It is worth noting that Moore Stephens Expert (Zurich) AG quit as Blackstone Resources' auditor in March 2022. As a result, the firm placed a request with Swiss Exchange Regulation AG for an extended deadline for filing the 2021 Annual Report. This request was approved by the regulator in late-April 2022. Now the deadline for filing the Annual Report is 31 July 2022.

However, since the start of 2022, the negative sentiment for Blackstone's shares has intensified, with the scrip being almost reduced to August 2020 lows, which was also the time when the firm reported various R&D breakthroughs in the battery technology venture – thereby triggering a massive rally in the following days. While the stock has been highly volatile since then, its extreme movements have been very similar to Quantumscape (another new-age battery tech firm).

Impact

Our estimates and recommendation are under review and we await clarity from management, especially with respect to recent allegations from Finma (Swiss market authority).

04/05/2022

Coverage suspension following Finma communication

Regulation

Finma's communiqué about Blackstone Resources leads to the suspension of our coverage

Fact

On 12-04- 2022, Finma, the Swiss market authority, issued a communiqué which
leads AlphaValue to suspend coverage:
https://www.finma.ch/en/news/2022/04/20220412-mm-blackstone/

Analysis

AlphaValue is not in a position to add flesh to the Finma statements. Finma argues that the information used by AlphaValue may have not been correct.

"Moreover Blackstone published sponsored buy recommendations with target prices well above the stock market prices actually paid and that were based on partially incorrect information."

Impact

The recommendation is switched to 'under review' from a Buy until such time as clarification is obtained or coverage cancelled.

25/01/2022

Taking on board the asset disposal

Change in EPS	2021 : CHF 0.80 vs -0.19	ns
	2022 : CHF -0.45 vs -0.35	ns

While underlying operating profit metrics are expected to remain under pressure – as progress in the respective divisions remains work-in-progress, 2021 should benefit from the gain on the disposal of a minority stake in the precious metal asset.

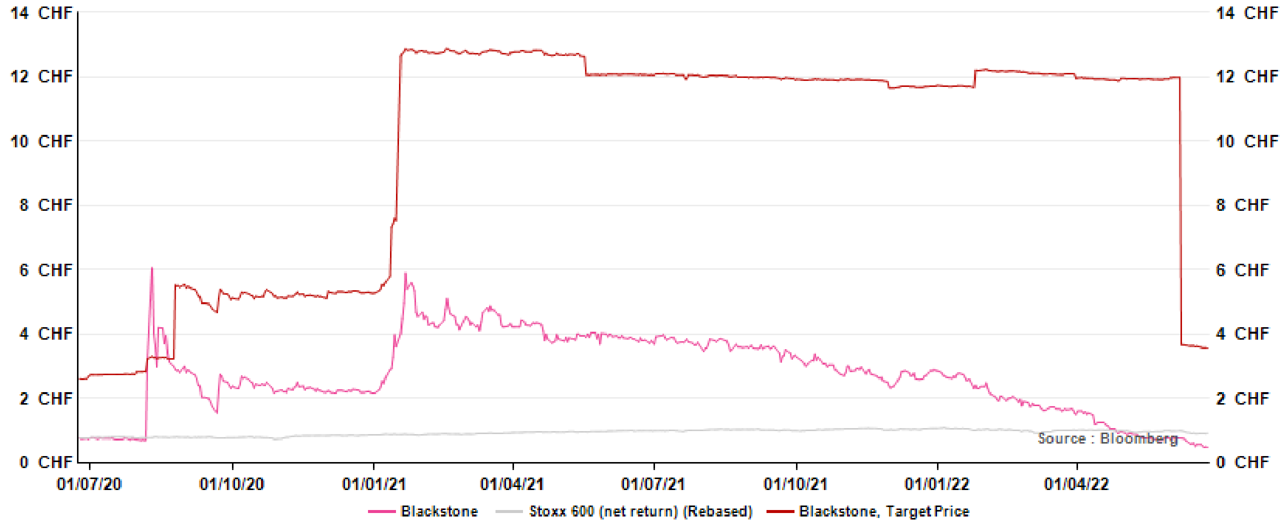
Change in NAV	CHF 25.4 vs 24.5	+3.97%

The NAV valuation benefits from cash proceeds (to be realised in 2022) from the disposal of a minority stake in the precious metal asset.

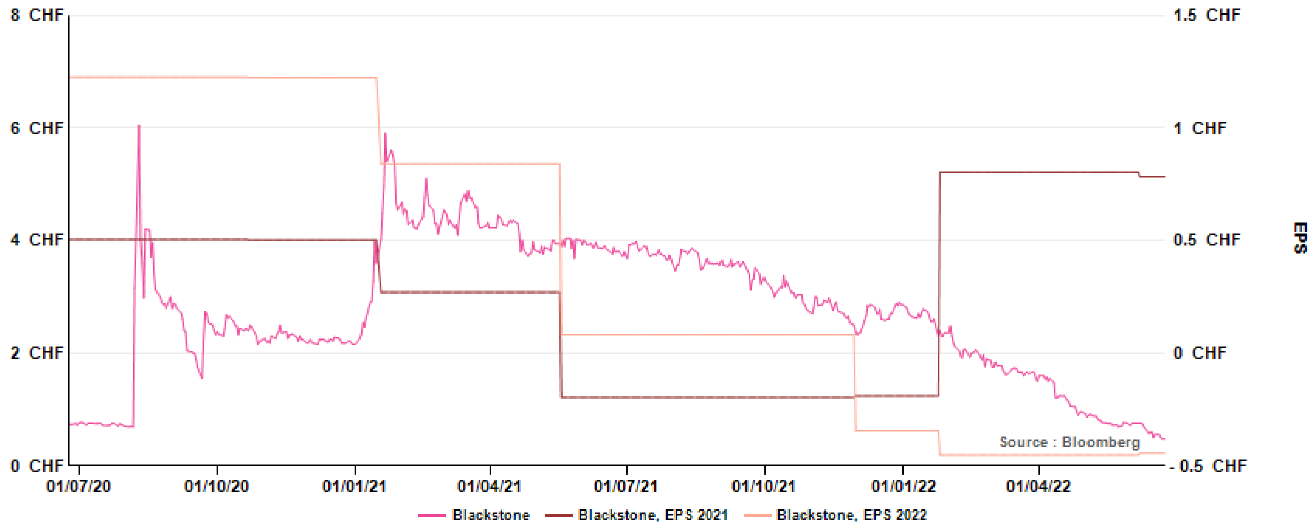
Change in DCF	CHF 4.34 vs 3.97	+9.14%

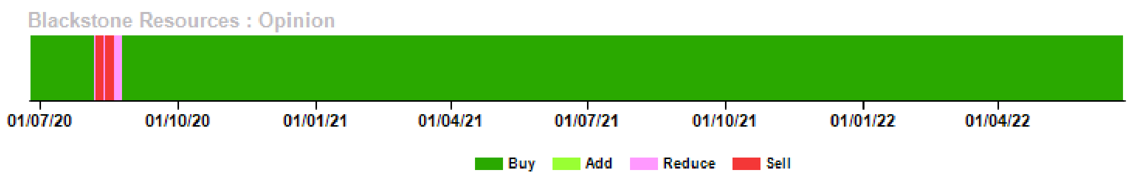
The DCF valuation benefits from cash proceeds (to be realised in 2022) from the disposal of a minority stake in the precious metal asset.

Stock Price and Target Price

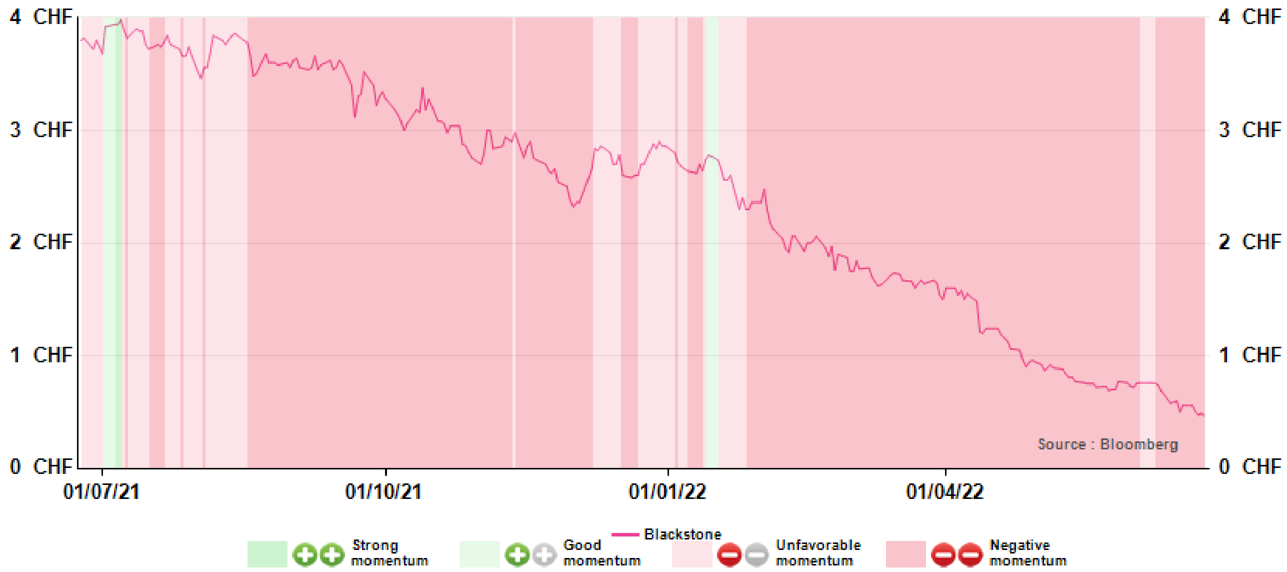


Earnings Per Share & Opinion





Momentum



Momentum analysis consists in evaluating the stock market trend of a given financial instrument, based on the analysis of its trading flows.
The main indicators used in our momentum tool are simple moving averages over three time frames: short term (20 trading days), medium term (50 days) and long term (150 days). The positioning of these moving averages relative to each other gives us the direction of the flows over these time frames.
For example, if the short and medium-term moving averages are above the long-term moving average, this suggests an uptrend which will need to be confirmed. Attention is also paid to the latest stock price relative to the three moving averages (advance indicator) as well as to the trend in these three moving averages - downtrend, neutral, uptrend - which is more of a lagging indicator.
The trend indications derived from the flows through moving averages and stock prices must be confirmed against trading volumes in order to confirm the signal. This is provided by a calculation based on the average increase in volumes over ten weeks together with a buy/sell volume ratio.

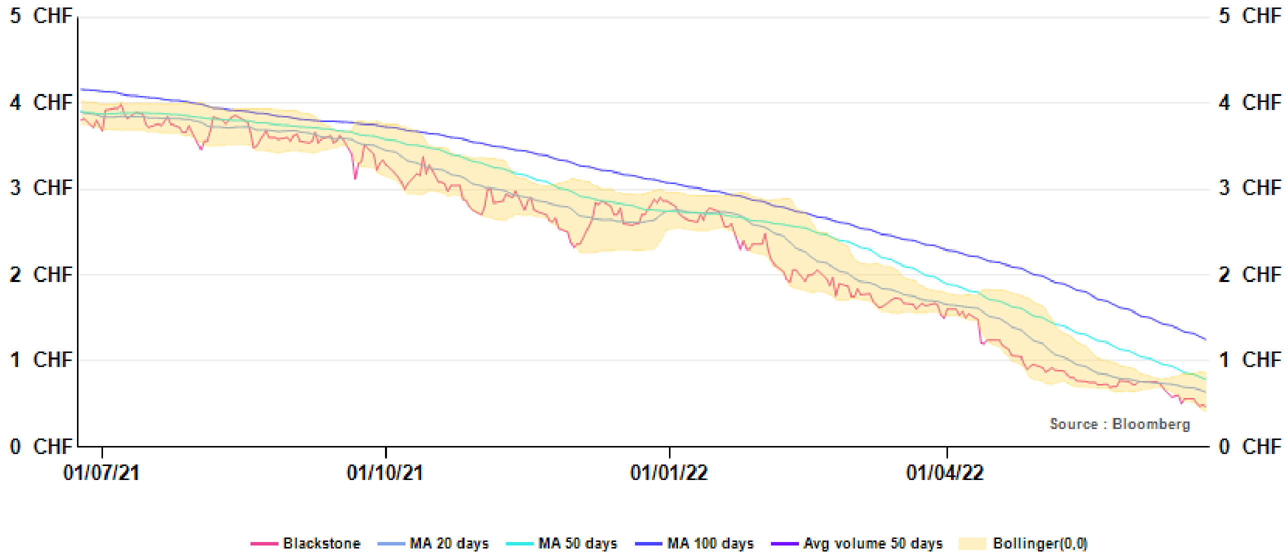
: Strong momentum corresponding to a continuous and overall positive moving average trend confirmed by volumes

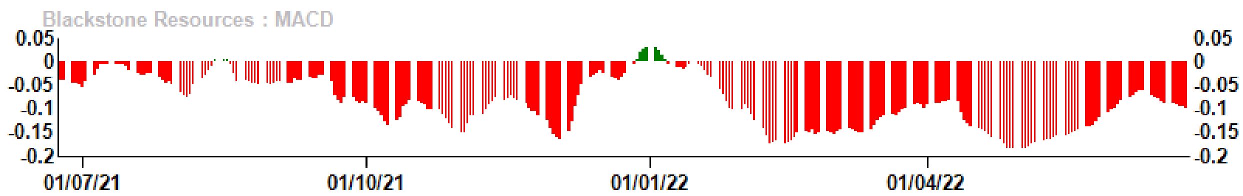
: Relatively good momentum corresponding to a positively-oriented moving average, but offset by an overbought pattern or lack of confirmation from volumes

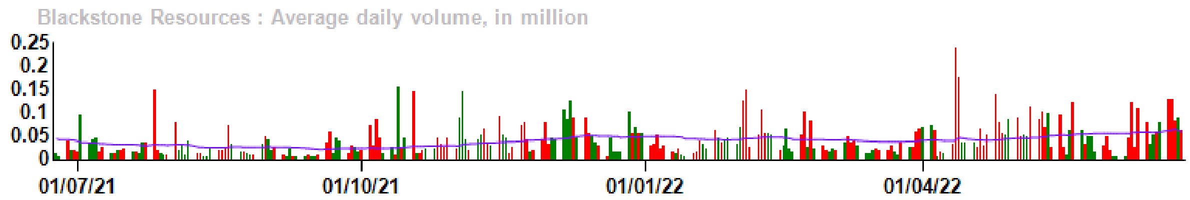
: Relatively unfavorable momentum with a neutral or negative moving average trend, but offset by an oversold pattern or lack of confirmation from volumes

: Strongly negative momentum corresponding to a continuous and overall negative moving average trend confirmed by volumes

Moving Average MACD & Volume

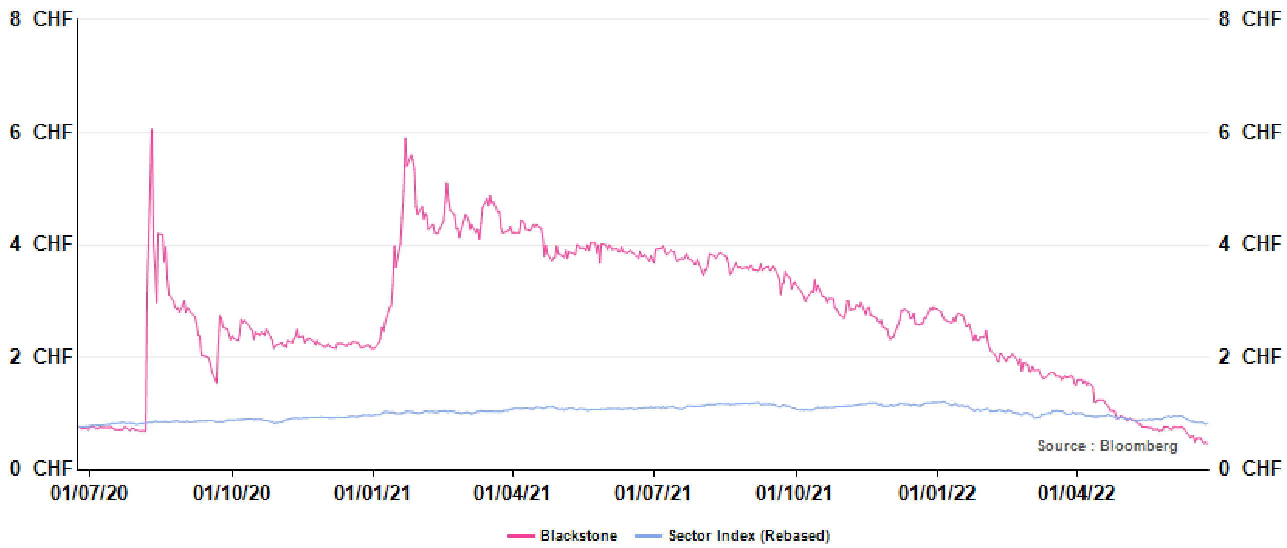






€/$ sensitivity

Sector Capital Goods



Detailed Financials

Valuation Key Data		12/20A	12/21E	12/22E	12/23E
Adjusted P/E	**x**	**3.60**	**4.70**	**-1.06**	**1.09**
Reported P/E	x	3.60	10.5	-1.06	1.09
EV/EBITDA(R)	**x**	**-38.9**	**-23.0**	**ns**	**1.23**
EV/EBIT	x	-26.8	-21.6	-4.70	3.62
EV/Sales	x	ns	ns	0.99	0.25
P/Book	**x**	**1.64**	**1.79**	**0.17**	**0.14**
Dividend yield	**%**	**0.00**	**0.00**	**0.00**	**0.00**
Free cash flow yield	*%*	*-6.17*	*-23.0*	*-320*	*-57.9*
Average stock price	CHF	1.49	3.67	0.47	0.47

Consolidated P&L

		12/20A	12/21E	12/22E	12/23E
Sales	CHFM	0.01	1.59 (1)	80.5 (1)	329 (1)
Sales growth	*%*	*ns*	*ns*	*4,955*	*309*
Sales per employee	*CHFth*	*0.05*	*5.13*	*230*	*893*
R&D costs as % of sales	%	0.00	0.00	0.00	0.00
Staff costs	CHFM	-3.03	-5.05	-5.98	-6.60
Operating lease payments	CHFM	0.00	0.00	0.00	0.00
Cost of sales/COGS (indicative)	CHFM	0.00	-2.43	-61.6	-220
EBITDA	CHFM	-3.06	-8.76	0.20	68.0
EBITDA(R)	CHFM	-3.06	-8.76	0.20	68.0
EBITDA(R) margin	*%*	*ns*	*-550*	*0.25*	*20.7*
EBITDA(R) per employee	*CHFth*	*-15.5*	*-28.2*	*0.58*	*185*
Depreciation	CHFM	-1.38	-0.57	-17.2	-44.8
Depreciations/Sales	*%*	*ns*	*35.7*	*21.3*	*13.6*
Amortisation	CHFM				
Underlying operating profit	CHFM	-4.43	-9.33 (1)	-17.0 (1)	23.2 (1)
Underlying operating margin	*%*	*ns*	*-586*	*-21.1*	*7.05*
Other income/expense (cash)	CHFM				
Other inc./ exp. (non cash; incl. assets revaluation)	CHFM	22.1 (7)	42.7 (8)	0.00	0.00
Impairment charges/goodwill amortisation	CHFM				
Operating profit (EBIT)	CHFM	17.7	33.4	-17.0	23.2
Interest expenses	CHFM	-0.64	-0.28	-0.48	-0.57
of which effectively paid cash interest expenses	*CHFM*	*-0.03*	*-0.28*	*-0.48*	*-0.57*
Financial income	CHFM	0.05	0.01	0.42	1.23
Other financial income (expense)	CHFM	-0.05	0.00	0.00	0.00
Net financial expenses	CHFM	-0.64	-0.27	-0.06	0.66
of which related to pensions	*CHFM*		*0.00*	*0.00*	*0.00*
Pre-tax profit before exceptional items	CHFM	17.1	33.1	-17.0	23.8
Exceptional items and other (before taxes)	CHFM	0.00	-18.4 (9)	0.00	0.00
Current tax	CHFM	0.16	0.74 (10)	-0.85 (10)	-2.38
Deferred tax	CHFM	0.00	0.00	0.00	0.00
Corporate tax	CHFM	0.16	0.74	-0.85	-2.38
Tax rate	*%*	*-0.91*	*-2.22*	*-5.00*	*10.0*
Net margin	*%*	*ns*	*ns*	*-22.2*	*6.53*
Equity associates	CHFM	0.00	0.00	0.00	0.00
Actual dividends received from equity holdings	*CHFM*	*0.00*	*0.00*	*0.00*	*0.00*
Minority interests	CHFM	0.51	-0.43	-1.06	-3.05
Income from discontinued operations	CHFM				
Attributable net profit	CHFM	17.7 (11)	15.0 (12)	-18.9	18.4
Impairment charges/goodwill amortisation	CHFM	0.00	0.00	0.00	0.00
Other adjustments	CHFM	0.00	18.4	0.00	0.00
Adjusted attributable net profit	CHFM	17.7	33.4	-18.9	18.4
Fully diluted adjusted attr. net profit	CHFM	17.7	33.4	-18.9	18.4
NOPAT	CHFM	12.4	23.4	-11.9	16.2

1. Based on corporate figures; although varying discounts have been applied, wherever applicable
7. Comprises gain on the (Norwegian) asset disposal
8. Comprises gain on the (precious metal asset) minority stake disposal
9. To be updated when the AR21 is released
10. To benefit from tax loss carry-forwards
11. Includes gain on the (Norwegian) asset disposal
12. Includes gain on the (precious metal asset) minority stake disposal; company-claimed profitability - audited numbers are still-awaited

Cashflow Statement

Cashflow Statement		12/20A	12/21E	12/22E	12/23E
EBITDA	CHFM	-3.06	-8.76	0.20	68.0
Change in WCR	CHFM	-0.23	-6.27	-6.64	-7.89
of which (increases)/decr. in receivables	*CHFM*	*-0.05*	*-6.59*	*-7.30*	*-8.68*
of which (increases)/decr. in inventories	*CHFM*		*0.00*	*0.00*	*0.00*
of which increases/(decr.) in payables	*CHFM*	*0.30*	*0.32*	*0.66*	*0.79*
of which increases/(decr.) in other curr. liab.	*CHFM*	*-0.48*	*0.00*	*0.00*	*0.00*
Actual dividends received from equity holdings	CHFM	0.00	0.00	0.00	0.00
Paid taxes	CHFM	-0.09	0.74	-0.85	-2.38
Exceptional items	CHFM	0.00	18.4	0.00	0.00
Other operating cash flows	CHFM	0.07	0.00	0.00	0.00
Total operating cash flows	CHFM	-3.30	4.10	-7.29	57.7
Capital expenditure	CHFM	0.00	-40.0 (13)	-56.9 (13)	-70.0 (13)
Capex as a % of depreciation & amort.	*%*	*0.00*	*7,041*	*332*	*156*
Net investments in shares	CHFM	0.00	0.00	50.0	0.00
Other investment flows	CHFM	0.19	46.4 (14)	50.3 (14)	10.3 (14)
Total investment flows	CHFM	0.19	6.44	43.4	-59.7
Net interest expense	CHFM	-0.64	-0.27	-0.06	0.66
of which cash interest expense	*CHFM*	*-0.03*	*-0.26*	*-0.06*	*0.67*
Dividends (parent company)	CHFM	0.00	0.00	0.00	0.00
Dividends to minorities interests	CHFM	0.00	0.00	0.00	0.00
New shareholders' equity	CHFM	-0.08	0.00	0.00	0.00
of which (acquisition) release of treasury shares	*CHFM*	*-0.08*	*0.00*	*0.00*	*0.00*
(Increase)/decrease in net debt position	CHFM	2.18	8.81	4.72	-7.83
Other financial flows	CHFM	0.00	0.00	0.00	0.00
Total financial flows	CHFM	2.07	8.55	4.66	-7.16
Change in scope of consolidation, exchange rates & other	CHFM	-0.08	0.00	0.00	0.00
Change in cash position	CHFM	-1.11	19.1	40.7	-9.13
Change in net debt position	CHFM	-3.29	10.3	36.0	-1.30
Free cash flow (pre div.)	CHFM	-3.94	-36.1	-64.3	-11.6
Operating cash flow (clean)	CHFM	-3.30	-14.3	-7.29	57.7
Reinvestment rate (capex/tangible fixed assets)	*%*	*0.00*	*80.8*	*63.8*	*61.2*

13. To be driven by battery business
14. Assuming that the battery business secures grants

Balance Sheet

Balance Sheet		12/20A	12/21E	12/22E	12/23E
Goodwill	CHFM	88.5	81.2	81.2	81.2
Total intangible	CHFM	88.5	81.2	81.2	81.2
Tangible fixed assets	CHFM	10.1	49.5 (15)	89.2 (15)	114 (15)
Financial fixed assets (part of group strategy)	CHFM	0.00	0.00	0.00	0.00
Other financial assets (investment purpose mainly)	CHFM	2.21	52.2 (16)	2.21	2.21
WCR	CHFM	-1.60	4.67	11.3	19.2
of which trade & receivables (+)	*CHFM*	*0.07*	*6.66*	*14.0*	*22.7*
of which inventories (+)	*CHFM*				
of which payables (+)	*CHFM*	*0.64*	*0.96*	*1.63*	*2.42*
of which other current liabilities (+)	*CHFM*	*1.03*	*1.03*	*1.03*	*1.03*
Other current assets	CHFM	3.07	3.07	3.07	3.07
of which tax assets (+)	*CHFM*				
Total assets (net of short term liabilities)	CHFM	102	191	187	220
Ordinary shareholders' equity (group share)	CHFM	39.0 (4)	87.7	119	148
Minority interests	CHFM	44.0	94.4 (6)	95.5	98.5
Provisions for pensions	CHFM	0.13	-0.43	-0.63	-0.84
Other provisions for risks and liabilities	CHFM	0.00	0.00	0.00	0.00
Deferred tax liabilities	CHFM	5.90	5.90	5.90	5.90
Other liabilities	CHFM				
Net debt / (cash)	CHFM	13.3 (5)	2.99	-33.0 (6)	-31.7
Total liabilities and shareholders' equity	CHFM	102	191	187	220
Average net debt / (cash)	CHFM	21.0	8.13	-15.0	-32.4

15. To be impacted by battery business's capex
16. Adjustment to account for next year payment associated with the (precious metal asset) minority stake disposal
4. Impacted by profit on (Norwegian) asset disposal
6. To be impacted by (precious metal asset) minority stake disposal
5. Impacted by non-cash effect of (Norwegian) asset disposal

EV Calculations

EV Calculations		12/20A	12/21E	12/22E	12/23E
EV/EBITDA(R)	**x**	**-38.9**	**-23.0**	**ns**	**1.23**
EV/EBIT	**x**	**-26.8**	**-21.6**	**-4.70**	**3.62**
EV/Sales	**x**	**ns**	**ns**	**0.99**	**0.25**
EV/Invested capital	x	1.23	1.49	0.44	0.39
Market cap	CHFM	63.8	157	20.1	20.1
+ Provisions (including pensions)	CHFM	0.13	-0.43	-0.63	-0.84
+ Unrecognised actuarial losses/(gains)	CHFM	0.00	0.00	0.00	0.00
+ Net debt at year end (ex Right-of-use from 2019)	CHFM	13.3	2.99	-33.0	-31.7
+ Right-of-use (from 2019)/Leases debt equivalent	CHFM	0.00	0.00	0.00	0.00
- Financial fixed assets (fair value) & Others	CHFM	2.21	52.2	2.21	2.21
+ Minority interests (fair value)	CHFM	44.0	94.4	95.5	98.5
= Enterprise Value	**CHFM**	**119**	**202**	**79.7**	**83.8**

Per Share Data

		12/20A	12/21E	12/22E	12/23E
Adjusted EPS (bfr gwill amort. & dil.)	**CHF**	**0.42**	**0.78**	**-0.44**	**0.43**
Growth in EPS	*%*	*225*	*88.4*	*n/a*	*n/a*
Reported EPS	CHF	0.42	0.35	-0.44	0.43
Net dividend per share	**CHF**	**0.00**	**0.00**	**0.00**	**0.00**
Free cash flow per share	CHF	-0.09	-0.85	-1.51	-0.27
Operating cash flow per share	CHF	-0.08	-0.33	-0.17	1.35
Book value per share	CHF	0.91	2.05	2.79	3.47
Number of ordinary shares	**Mio**	**42.7**	**42.7**	**42.7**	**42.7**
Number of equivalent ordinary shares (year end)	Mio	42.7	42.7	42.7	42.7
Number of shares market cap.	Mio	42.7	42.7	42.7	42.7
Treasury stock (year end)	Mio	0.01	0.01	0.01	0.01
Number of shares net of treasury stock (year end)	Mio	42.7	42.7	42.7	42.7
Number of common shares (average)	**Mio**	**42.7**	**42.7**	**42.7**	**42.7**
Conversion of debt instruments into equity	Mio				
Settlement of cashable stock options	Mio				
Probable settlement of non mature stock options	Mio				
Other commitments to issue new shares	Mio				
Increase in shares outstanding (average)	Mio	0.00	0.00	0.00	0.00
Number of diluted shares (average)	**Mio**	**42.7**	**42.7**	**42.7**	**42.7**
Goodwill per share (diluted)	CHF	0.00	0.00	0.00	0.00
EPS after goodwill amortisation (diluted)	CHF	0.42	0.78	-0.44	0.43
EPS before goodwill amortisation (non-diluted)	CHF	0.42	0.35	-0.44	0.43
Payout ratio	**%**	**0.00**	**0.00**	**0.00**	**0.00**
Capital payout ratio (div +share buy back/net income)	**%**	**0.44**	**0.00**	**0.00**	

Funding - Liquidity

		12/20A	12/21E	12/22E	12/23E
EBITDA	CHFM	-3.06	-8.76	0.20	68.0
Funds from operations (FFO)	CHFM	-3.10	10.1	-0.71	66.3
Ordinary shareholders' equity	**CHFM**	**39.0** (4)	**87.7**	**119**	**148**
Gross debt	CHFM	13.9 (5)	22.7	27.4	19.6
o/w Less than 1 year - Gross debt	CHFM	1.22	1.22	0.98	0.78
o/w 1 to 5 year - Gross debt	CHFM	3.43	3.45	6.42	8.78
of which Y+2	CHFM	2.28	0.38	0.38	0.38
of which Y+3	CHFM	0.38	0.38	0.38	1.15
of which Y+4	CHFM	0.38	0.38	1.15	2.25
of which Y+5	CHFM	0.38	2.30	4.50	5.00
o/w Beyond 5 years - Gross debt	CHFM	9.21	18.0	20.0	10.0
+ Gross Cash	CHFM	0.59	19.7	60.4 (6)	51.3
= Net debt / (cash)	**CHFM**	**13.3** (5)	**2.99**	**-33.0** (6)	**-31.7**
Bank borrowings	CHFM	0.00	0.00	0.00	0.00
Issued bonds	CHFM	0.52	0.52	0.52	0.52
Financial leases liabilities	CHFM	0.00	0.00	0.00	0.00
Other financing	CHFM	13.3	22.2	26.9	19.0
Gearing (at book value)	%	53.9	9.27	-12.6	-21.8
Equity/Total asset (%)	%	38.1	46.0	63.8	67.4
Adj. Net debt/EBITDA(R)	*x*	*-4.34*	*-0.34*	*-163*	*-0.47*
Adjusted Gross Debt/EBITDA(R)	*x*	*-4.58*	*-2.54*	*132*	*0.28*
Adj. gross debt/(Adj. gross debt+Equity)	*%*	*26.4*	*20.2*	*18.3*	*11.2*
Ebit cover	*x*	*-6.89*	*-35.4*	*-299*	*-34.9*
FFO/Gross Debt	*%*	*-22.2*	*45.4*	*-2.64*	*354*
FFO/Net debt	*%*	*-23.4*	*338*	*2.14*	*-209*
FCF/Adj. gross debt (%)	*%*	*-28.1*	*-162*	*-240*	*-62.1*
(Gross cash+ "cash" FCF+undrawn)/ST debt	*x*	*-2.73*	*-13.4*	*-3.90*	*50.6*
"Cash" FCF/ST debt	*x*	*-2.72*	*-29.5*	*-65.6*	*-14.8*

4. Impacted by profit on (Norwegian) asset disposal
5. Impacted by non-cash effect of (Norwegian) asset disposal
6. To be impacted by (precious metal asset) minority stake disposal

ROE Analysis (Dupont's Breakdown)

		12/20A	12/21E	12/22E	12/23E
Tax burden (Net income/pretax pre excp income)	x	1.04	0.45	1.11	0.77
EBIT margin (EBIT/sales)	%	186,794	2,095	-21.1	7.05
Assets rotation (Sales/Avg assets)	%	0.01	1.09	42.6	162
Financial leverage (Avg assets /Avg equity)	x	3.30	2.31	1.82	1.52
ROE	**%**	**55.5**	**23.7**	**-18.3**	**13.8**
ROA	%	18.3	24.7	-9.34	10.8

Shareholder's Equity Review (Group Share)

		12/20A	12/21E	12/22E	12/23E
Y-1 shareholders' equity	CHFM	24.9	38.5	87.7	119
+ Net profit of year	CHFM	17.7	15.0	-18.9	18.4
- Dividends (parent cy)	CHFM	0.00	0.00	0.00	0.00
+ Additions to equity	CHFM	-0.08	0.00	0.00	0.00
o/w reduction (addition) to treasury shares	*CHFM*	*-0.08*	*0.00*	*0.00*	*0.00*
- Unrecognised actuarial gains/(losses)	CHFM	0.00	0.00	0.00	0.00
+ Comprehensive income recognition	CHFM	-4.00	34.2	50.5	10.5
= Year end shareholders' equity	**CHFM**	**38.5**	**87.7**	**119**	**148**

Staffing Analytics

		12/20A	12/21E	12/22E	12/23E
Sales per staff	CHFth	0.05	5.13	230	893
Staff costs per employee	CHFth	-15.4	-16.3	-17.1	-17.9
Change in staff costs	*%*	*379*	*66.7*	*18.3*	*10.4*
Change in unit cost of staff	*%*	*131*	*5.87*	*4.87*	*4.93*
Staff costs/(EBITDA+Staff costs)	*%*	*-12,987*	*-136*	*96.7*	*8.85*
Average workforce	**unit**	**197**	**310**	**350**	**368**
Europe	unit	160	272	309	326
North America	unit	0.00	0.00	0.00	0.00
South Americas	unit	0.00	0.00	0.00	0.00
Asia	unit	0.00	0.00	0.00	0.00
Other key countries	unit	37.0	39.0	41.0	43.0
Total staff costs	**CHFM**	**-3.03**	**-5.05**	**-5.98**	**-6.60**
Wages and salaries	CHFM	-3.03	-5.01	-5.94	-6.56
Pension related costs	CHFM		-0.04	-0.04	-0.04

Divisional Breakdown Of Revenues

		12/20A	12/21E	12/22E	12/23E
Total sales	**CHFM**	**0.01**	**1.59** (1)	**80.5** (1)	**329** (1)
Norway	CHFM	0.00	0.00	0.00	0.96
Peru	CHFM	0.00	0.00	5.25	30.6
Battery	CHFM	0.00	0.00	8.16	182
Trading	CHFM	0.00	1.59	28.3	51.7
Columbia	CHFM	0.00	0.00	38.8	63.4
Other	CHFM	0.01	0.00	0.00	0.00

1. Based on corporate figures; although varying discounts have been applied, wherever applicable

Divisional Breakdown Of Earnings

		12/20A	12/21E	12/22E	12/23E
EBITDA/R Analysis					
Norway	CHFM	0.00	-1.19	-1.60	-0.97
Peru	CHFM	0.00	-0.37	0.79	7.63
Battery	CHFM	0.00	-2.50	1.41	60.5
Trading	CHFM	0.00	-0.06	0.71	2.37
Columbia	CHFM	0.00	-3.23	1.29	3.26
Other/cancellations	CHFM	-2.76	-1.41	-2.38	-4.82
Total	**CHFM**	**-2.76**	**-8.76** (1)	**0.20** (1)	**68.0** (1)
EBITDA/R margin	%	ns	ns	0.25	20.7

1. Based on corporate figures; although varying discounts have been applied, wherever applicable

Revenue Breakdown By Country

		12/20A	12/21E	12/22E	12/23E
Other	%	0.00	0.00		

ROCE

		12/20A	12/21E	12/22E	12/23E
ROCE (NOPAT+lease exp.(1-tax))/(net) cap employed adjusted*	*%*	*12.8*	*17.3*	*-6.53*	*7.56*
CFROIC	*%*	*-4.06*	*-26.7*	*-35.4*	*-5.41*
Goodwill	CHFM	88.5	81.2	81.2	81.2
Accumulated goodwill amortisation	*CHFM*	*0.00*	*0.00*	*0.00*	*0.00*
All intangible assets	CHFM	0.00	0.00	0.00	0.00
Accumulated intangible amortisation	*CHFM*	*0.00*	*0.00*	*0.00*	*0.00*
Financial hedges (LT derivatives)	CHFM	0.00	0.00	0.00	0.00
Capitalised R&D	CHFM	0.00	0.00	0.00	0.00
Rights of use/ Capitalised leases	CHFM	0.00	0.00	0.00	0.00
Other fixed assets	CHFM	10.1	49.5	89.2	114
Accumulated depreciation	*CHFM*	*0.00*	*0.00*	*0.00*	*0.00*
WCR	CHFM	-1.60	4.67	11.3	19.2
Other assets	CHFM	0.00	0.00	0.00	0.00
Unrecognised actuarial losses/(gains)	CHFM	0.00	0.00	0.00	0.00
Capital employed after deprec. (Invested capital)	**CHFM**	**96.9**	**135**	**182**	**215**
Capital employed before depreciation	CHFM	96.9	135	182	215

Divisional Breakdown Of Capital Employed

		12/20A	12/21E	12/22E	12/23E
Norway	CHFM	6.03	6.35	7.40	8.00
Peru	CHFM	25.5	26.8	27.8	29.0
Battery	CHFM	0.00	63.5	102	122
Trading	CHFM	1.01	1.06	1.39	1.50
Columbia	CHFM	23.5	29.0	31.9	35.0
Other	CHFM	41.0	8.70	11.5	19.3
Total capital employed	**CHFM**	**96.9**	**135**	**182**	**215**

Pension Risks

Summary Of Pension Risks

		12/20A	12/21E	12/22E	12/23E
Pension ratio	**%**	**-0.77**	**-0.49**	**-0.54**	**-0.57**
Ordinary shareholders' equity	CHFM	39.0 [(4)]	87.7	119	148
Total benefits provisions	**CHFM**	**-0.30**	**-0.43**	**-0.63**	**-0.84**
of which funded pensions	*CHFM*	*-0.30*	*-0.43*	*-0.63*	*-0.84*
of which unfunded pensions	*CHFM*	*0.00*	*0.00*	*0.00*	*0.00*
of which benefits / health care	*CHFM*	*0.00*	*0.00*	*0.00*	*0.00*
Unrecognised actuarial (gains)/losses	CHFM	0.00	0.00	0.00	0.00
Company discount rate	*%*	*0.15*	*0.15*	*0.15*	*0.15*
Normalised recomputed discount rate	%		1.00		
Company future salary increase	*%*	*1.00*	*1.00*	*1.00*	*1.00*
Normalised recomputed future salary increase	%		1.00		
Company expected rate of return on plan assets	*%*	*0.00*	*0.00*	*0.00*	*0.00*
Normalised recomputed expd rate of return on plan assets	%		1.50		
Funded : Impact of actuarial assumptions	**CHFM**		**-0.03**		
Unfunded : Impact of actuarial assumptions	**CHFM**		**0.00**		

4. Impacted by profit on (Norwegian) asset disposal

Geographic Breakdown Of Pension Liabilities

		12/20A	12/21E	12/22E	12/23E
US exposure	%				
UK exposure	%				
Euro exposure	%				
Nordic countries	%				
Switzerland	%	100	100	100	100
Other	%				
Total	%	100	100	100	100

Balance Sheet Implications

		12/20A	12/21E	12/22E	12/23E
Funded status surplus / (deficit)	CHFM	0.30	0.61	0.91	1.21
Unfunded status surplus / (deficit)	CHFM	0.00	0.00	0.00	0.00
Total surplus / (deficit)	CHFM	0.30	0.61	0.91	1.21
Total unrecognised actuarial (gains)/losses	**CHFM**	**0.00**	**0.00**	**0.00**	**0.00**
Provision (B/S) on funded pension	CHFM	-0.30	-0.43	-0.63	-0.84
Provision (B/S) on unfunded pension	CHFM	0.00	0.00	0.00	0.00
Other benefits (health care) provision	CHFM	0.00	0.00	0.00	0.00
Total benefit provisions	**CHFM**	**-0.30**	**-0.43**	**-0.63**	**-0.84**

P&L Implications

		12/20A	12/21E	12/22E	12/23E
Funded obligations periodic costs	CHFM	-0.01	-0.04	-0.04	-0.05
Unfunded obligations periodic costs	CHFM	0.00	0.00	0.00	0.00
Total periodic costs	**CHFM**	**-0.01**	**-0.04**	**-0.04**	**-0.05**
of which incl. in labour costs	*CHFM*	*-0.05*	*-0.04*	*-0.04*	*-0.04*
of which incl. in interest expenses	*CHFM*	*0.04*	*0.00*	*0.00*	*0.00*

Funded Obligations

		12/20A	12/21E	12/22E	12/23E
Balance beginning of period	**CHFM**	**0.01**	**0.17**	**0.31**	**0.47**
Current service cost	CHFM	0.05	0.04	0.04	0.04
Interest expense	CHFM	0.00	0.00	0.00	0.00
Employees' contributions	CHFM	0.02	0.02	0.02	0.02
Impact of change in actuarial assumptions	CHFM	0.00	-0.03	0.00	0.00
of which impact of change in discount rate	*CHFM*		*-0.03*		
of which impact of change in salary increase	*CHFM*		*0.00*		
Changes to scope of consolidation	**CHFM**	**0.00**	**0.00**	**0.00**	**0.00**
Currency translation effects	CHFM	0.00	0.00	0.00	0.00
Pension payments	CHFM	0.06	0.06	0.06	0.06
Other	CHFM	0.04	0.04	0.04	0.04
Year end obligation	**CHFM**	**0.17**	**0.31**	**0.47**	**0.64**

Plan Assets

		12/20A	12/21E	12/22E	12/23E
Value at beginning	**CHFM**	**-0.03**	**0.47**	**0.92**	**1.38**
Company expected return on plan assets	CHFM	0.04	0.00	0.00	0.00
Actuarial gain /(loss)	CHFM	0.00	0.01	0.01	0.02
Employer's contribution	CHFM	0.02	0.00	0.00	0.00
Employees' contributions	CHFM	0.02	0.02	0.02	0.02
Changes to scope of consolidation	CHFM	0.00	0.00	0.00	0.00
Currency translation effects	CHFM	0.00	0.00	0.00	0.00
Pension payments	CHFM	0.06	0.06	0.06	0.06
Other	CHFM	0.36	0.36	0.36	0.36
Value end of period	**CHFM**	**0.47**	**0.92**	**1.38**	**1.84**
Actual and normalised future return on plan assets	CHFM	0.04	0.01	0.01	0.02

Unfunded Obligations

		12/20A	12/21E	12/22E	12/23E
Balance beginning of period	**CHFM**	**0.00**	**0.00**	**0.00**	**0.00**
Current service cost	CHFM		0.00	0.00	0.00
Interest expense	CHFM		0.00	0.00	0.00
Employees' contributions	CHFM				
Impact of change in actuarial assumptions	CHFM		0.00	0.00	0.00
of which Impact of change in discount rate	*CHFM*		*0.00*		
of which Impact of change in salary increase	*CHFM*		*0.00*		
Changes to scope of consolidation	CHFM				
Currency translation effects	CHFM				
Pension payments	CHFM				
Other	CHFM				
Year end obligation	**CHFM**	**0.00**	**0.00**	**0.00**	**0.00**

Fundamental Opinion

It is implicit that recommendations are made in good faith but should not be regarded as the sole source of advice.

Recommendations are geared to a "**value**" approach.

Valuations are computed from the point of view of a **secondary market minority holder** looking at a medium term (say 6 months) performance.

Valuation tools are built around the concepts of **transparency,** all underlying figures are accessible, and **consistency,** same methodology whichever the stock, allowing for differences in nature between financial and non financial stocks. A stock with a target price below its current price should not and will not be regarded as an Add or a Buy.

Recommendations are based on target prices with no allowance for dividend returns. The thresholds for the four recommendation levels may change from time to time depending on market conditions. Thresholds are defined as follows, ASSUMING long risk free rates remain in the 2-5% region.

Recommendation	Low Volatility 10 < VIX index < 30	Normal Volatility 15 < VIX index < 35	High Volatility 35 < VIX index
Buy	More than 15% upside	More than 20% upside	More than 30% upside
Add	From 5% to 15%	From 5% to 20%	From 10% to 30%
Reduce	From -10% to 5%	From -10% to 5%	From -10% to 10%
Sell	Below -10%	Below -10%	Below -10%

There is deliberately no "neutral" recommendation. The principle is that there is no point investing in equities if the return is not at least the risk free rate (and the dividend yield which again is not allowed for).

Although recommendations are automated (a function of the target price whenever a new equity research report is released), the management of AlphaValue intends to maintain global consistency within its universe coverage and may, from time to time, decide to change global parameters which may affect the level of recommendation definitions and /or the distribution of recommendations within the four levels above. For instance, lowering the risk premium in a gloomy context may increase the proportion of positive recommendations.

Valuation

Valuation processes have been organized around transparency and consistency as primary objectives.

Stocks belong to different categories that recognise their main operating features : Banks, Insurers and Non Financials.

Within those three universes, the valuation techniques are the same and in relation to the financial data available.

The weighting given to individual valuation techniques is managed centrally and may be changed from time to time. As a rule, all stocks of a similar profile are valued using equivalent weighting of the various valuation techniques. This is for obvious consistency reasons.

Within the very large universe of Non Financials, there are in effect 4 sub-categories of weightings to cater for subsets: 1) 'Mainstream' stocks; 2) 'Holding companies' where the stress is on NAV measures; 3) 'Growth' companies where the stress is on peer based valuations; 4) 'Loss making sectors' where peers review is essentially pointing nowhere (ex: Bio techs). The bulk of the valuation is then built on DCF and NAV, in effect pushing back the time horizon.

Valuation Issue	Normal industrials	Growth industrials	Holding company	Loss runners	Bank	Insurers
DCF	35%	35%	10%	40%	0%	0%
NAV	20%	20%	55%	40%	50%	15%
PE	10%	10%	10%	5%	10%	20%
EV/EBITDA	20%	20%	0%	5%	0%	0%
Yield	10%	10%	20%	5%	10%	15%
Book	5%	5%	5%	5%	10%	10%
Banks' instrinsic method	0%	0%	0%	0%	10%	0%
Embedded Value	0%	0%	0%	0%	0%	40%
Mkt Cap/Gross Operating Profit	0%	0%	0%	0%	10%	0%