



November 21, 2018

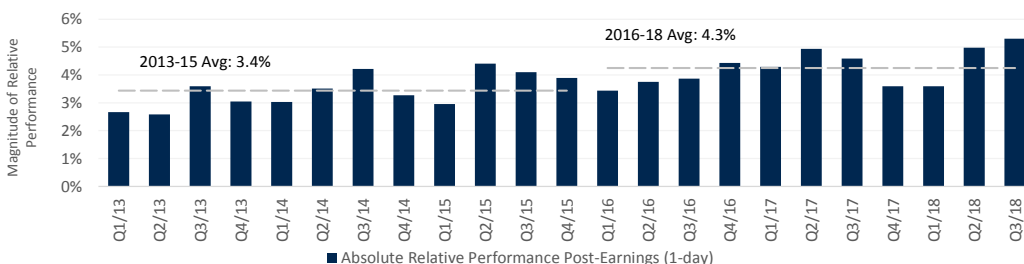
## Precious Metals & Minerals Weekly Valuation Tables

### Chart of the Week: Increase in volatility around earnings results

This week, we highlight the relative share price performance of North American Gold precious metal producers following Q3/18 earnings. As previously highlighted (see [April 10: Increased volatility post earnings requires a disclosure rethink](#)), precious metal producers continue to experience significant volatility around quarterly results, with increased risk to the downside on perceived earnings misses.

As shown in Exhibit 1, the magnitude of relative 1-day performance following earnings beats/misses has increased over the past two years to 4.3% since 2016 versus 3.4% from 2013-15. In particular, companies beating or missing consensus expectations have seen average relative share price movement of over 5% over the past two quarters, reflecting greater volatility given reduced inherent liquidity within the sector and impact of quantitative trading algorithms.

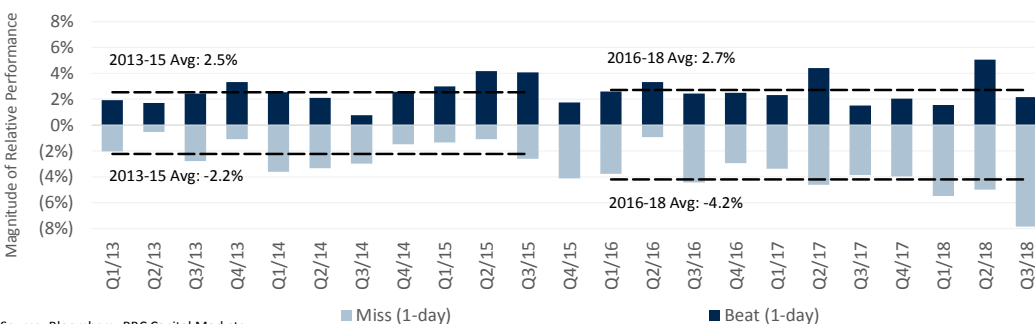
**Exhibit 1: Magnitude of relative performance post-earnings has increased since 2016, with average relative share price movement of over 5% over the past two quarters**



Source: Bloomberg, RBC Capital Markets

In addition, companies continue to experience increased risk to the downside on earnings misses, with an average underperformance of 4.2% versus the GDX since 2016, versus 2.2% from 2013-15. This compares to the 1-day outperformance following earnings beats, which has remained relatively steady at 2.7% since 2016 versus 2.5% from 2013-15. In our view, this reflects the need for more detailed company disclosure around quarterly expectations.

**Exhibit 2: Underperformance of companies missing consensus expectations has increased while outperformance for companies surpassing consensus estimates has remained relatively flat**



Source: Bloomberg, RBC Capital Markets

We have revised our estimates for **BTO, EDV, IAG, PVG, ROXG, SSL** and **WPM** following Q3/18 results releases. Our price target for **ROXG** decreased 4%. No other price targets and no ratings were impacted. See page 4 for details.



## Appendix I: Upcoming RBCCM events and weekly data updates

### Analyst Marketing

Date	Analyst	Coverage Universe	Location
December 3	Stephen Walker Sam Crittenden	Precious Metals & Large Cap Base Metals Base Metals	Baltimore
December 11	Dan Rollins	Precious Metals	Winnipeg

### Corporate Marketing

Date	Company	Representatives	Location
November 21-22	Silver Lake Resources	Len Eldridge - Corporate Development Officer Luke Tonkin - Managing Director	Sydney Melbourne
November 27-28	OceanaGold	Mick Wilkes – President & CEO Sam Pazuki – VP Investor Relations	London
November 27-29	Saracen Mineral Holdings	Dan Howe – Chief Geologist Troy Irvin – Corporate Development Office	Sydney
November 30	SSR Mining	Paul Benson – President & CEO Brain Martin – Manager, Business Development	New York
December 3	Dundee Precious Metals	Rick Howes – President & CEO Hume Kyle – Executive VP & CFO	Montreal New York
December 7	OceanaGold	Sam Pazuki – VP Investor Relations	Hong Kong

### RBCCM Precious Metal Price Forecasts (US\$/oz)

Metal	2017A	2018E	2019E	2020E	2021E	2022E	Long-Term
Gold	\$1,257	\$1,275	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300
Silver	\$17.05	\$16.02	\$16.50	\$16.50	\$16.50	\$16.50	\$16.50
Platinum	\$948	\$879	\$875	\$950	\$1,050	\$1,050	\$1,050
Palladium	\$870	\$979	\$1,000	\$975	\$950	\$950	\$950

Source: RBC Capital Markets estimates

### RBCCM Base Metal Price Forecasts (US\$/lb)

Metal	2017A	2018E	2019E	2020E	2021E	2022E	2018 US\$ Long-Term
Aluminum	\$0.89	\$0.97	\$0.85	\$0.90	\$0.95	\$0.95	\$0.90
Copper	\$2.77	\$2.89	\$2.75	\$3.25	\$3.50	\$3.50	\$3.00
Lead	\$1.04	\$1.03	\$1.10	\$1.10	\$1.10	\$1.10	\$0.85
Moly	\$8.13	\$11.03	\$9.50	\$9.50	\$9.50	\$9.50	\$8.50
Nickel	\$4.67	\$6.15	\$6.50	\$7.00	\$7.00	\$8.00	\$8.00
Uranium	\$22.06	\$23.69	\$27.50	\$35.00	\$40.00	\$65.00	\$65.00
Zinc	\$1.31	\$1.33	\$1.30	\$1.30	\$1.25	\$1.25	\$1.00

Source: RBC Capital Markets estimates



### Weekly Gold ETF Inflows/Outflows (MMoz)

(MMoz)	Total Known ETF Holdings	W/W Gold Flows		SPDR Gold ETF	W/W Gold Flows		Rest of World	W/W Gold Flows	
		(MMoz)	(% Change)		(MMoz)	(% Change)		(MMoz)	(% Change)
Current	68.7	0.14	0.2%	24.4	0.14	0.6%	44.2	-0.01	0.0%
1 Week Ago	68.5	0.01	0.0%	24.3	-0.12	-0.5%	44.2	0.13	0.3%
2 Weeks Ago	68.5	0.48	0.7%	24.4	0.30	1.3%	44.1	0.18	0.4%
3 Weeks Ago	68.0	0.16	0.2%	24.1	0.12	0.5%	43.9	0.04	0.1%
4 Weeks Ago	67.9			24.0			43.9		

Source: Bloomberg

### Implied Fed Rate Hike Probabilities

The market is discounting a 74% probability of a Fed rate hike in December, down from 81% one month ago and up from 55% three months ago. The RBC Capital Markets economics team assumes a 25bp rate hikes in December 2018 and four in 2019.

	Ending Interest Rate	Implied Probability*		
		Current	1 Mo. ago	3 Mo. ago
<b>Dec-18</b>	<b>2.50%+</b>	74%	81%	55%
<b>Mar-19</b>	<b>2.75%+</b>	39%	60%	28%
<b>Jun-19</b>	<b>3.00%+</b>	19%	38%	14%
<b>Sep-19</b>	<b>3.25%+</b>	7%	19%	5%
<b>Dec-19</b>	<b>3.50%+</b>	2%	8%	1%

\*Note: Probabilities assume one 25bp rate hike per quarter, reaching the ending interest rate noted

Source: Bloomberg



## Appendix II: Estimate revisions

### Exhibit 3: Valuation summary

Company	Ticker	Analyst	Rating*	Current Price	Price Target (12 month)			Implied Rt. to Target	NAV/sh			2018-2020E Avg. AdjCF**			Price Target Multiples			
					Prev.	New	% Chg		Prev.	New	% Chg	Prev.	New	% Chg	NAV	AdjCF	NAV	AdjCF
B2Gold	BTO	DR	O	C\$3.49	C\$4.25	C\$4.25	0%	22%	C\$2.91	C\$2.89	-1%	\$0.34	\$0.33	-3%	1.20x	12.0x	1.20x	12.0x
Endeavour Mining	EDV	DR	O	C\$18.89	C\$30.00	C\$30.00	0%	59%	C\$18.18	C\$18.09	0%	\$2.34	\$2.34	0%	1.20x	12.0x	1.20x	12.0x
IAMGOLD	IAG	DR	SP	\$3.14	\$6.00	\$6.00	0%	91%	\$5.20	\$5.06	-3%	\$0.47	\$0.42	-11%	1.20x	12.0x	1.20x	12.0x
Pretium	PVG	DR	O - Spec	C\$10.22	C\$14.00	C\$14.00	0%	37%	C\$13.45	C\$13.18	-2%	\$1.22	\$1.26	4%	1.00x	10.0x	1.00x	10.0x
Roxgold	ROXG	DR	O - Spec	C\$0.80	C\$1.40	C\$1.35	-4%	69%	C\$1.03	C\$1.01	-2%	\$0.13	\$0.14	7%	0.90x	9.0x	0.90x	9.0x
Sandstorm Gold	SSL	DR	O - Spec	C\$5.32	C\$7.50	C\$7.50	0%	41%	C\$3.76	C\$3.75	0%	\$0.27	\$0.29	6%	2.00x	20.0x	2.00x	20.0x
Torex Gold	TXG	DR	O - Spec	C\$11.58	C\$16.00	C\$16.00	0%	38%	C\$15.63	C\$15.93	2%	\$1.77	\$1.89	7%	0.80x	8.0x	0.80x	8.0x
Wheaton Precious Metals	WPM	DR	O	\$15.80	\$24.00	\$24.00	0%	54%	\$10.59	\$10.59	0%	\$1.21	\$1.24	2%	2.25x	22.5x	2.25x	22.5x

Note: \*No ratings have been changed. \*\*Adj CF defined as unlevered operating cash flow less sustaining capital.  
Source: RBC Capital Markets estimates

### Exhibit 4: 2018-2020 estimates summary

Company	Ticker	Analyst	Rating	2018E EPS		2019E EPS		2020E EPS		2018E CFPS		2019E CFPS		2020E CFPS	
				Previous	New	Previous	New	Previous	New	Previous	New	Previous	New	Previous	New
B2Gold	BTO	DR	O	\$0.16	\$0.16	\$0.15	\$0.13	\$0.13	\$0.11	\$0.45	\$0.47	\$0.45	\$0.41	\$0.44	\$0.44
Endeavour Mining	EDV	DR	O	\$0.37	\$0.38	\$0.92	\$1.05	\$1.55	\$1.65	\$2.48	\$2.47	\$2.92	\$2.94	\$3.77	\$3.75
IAMGOLD	IAG	DR	SP	\$0.08	\$0.11	\$0.15	\$0.18	\$0.13	\$0.18	\$0.58	\$0.50	\$0.83	\$0.80	\$0.83	\$0.81
Pretium	PVG	DR	O - Spec	\$0.57	\$0.61	\$0.80	\$0.81	\$0.91	\$0.87	\$1.02	\$1.10	\$1.23	\$1.28	\$1.35	\$1.34
Roxgold	ROXG	DR	O - Spec	\$0.08	\$0.08	\$0.10	\$0.10	\$0.09	\$0.09	\$0.15	\$0.17	\$0.23	\$0.22	\$0.20	\$0.20
Sandstorm Gold	SSL	DR	O - Spec	\$0.04	\$0.06	\$0.04	\$0.08	\$0.03	\$0.06	\$0.24	\$0.25	\$0.29	\$0.31	\$0.27	\$0.30
Torex Gold	TXG	DR	O - Spec	\$0.13	\$0.14	\$0.51	\$0.56	\$0.71	\$0.73	\$1.83	\$2.22	\$2.61	\$2.59	\$2.96	\$2.97
Wheaton Precious Metals	WPM	DR	O	\$0.49	\$0.50	\$0.48	\$0.50	\$0.53	\$0.55	\$1.09	\$1.11	\$1.14	\$1.18	\$1.21	\$1.25

Company	Ticker	Analyst	Rating	2018E FCFPS		2019E FCFPS		2020E FCFPS		2018E Production**		2019E Production**		2020E Production**	
				Previous	New	Previous	New	Previous	New	Previous	New	Previous	New	Previous	New
B2Gold	BTO	DR	O	\$0.14	\$0.15	\$0.20	\$0.16	\$0.21	\$0.21	840	843	831	830	862	861
Endeavour Mining	EDV	DR	O	(\$1.38)	(\$2.00)	\$0.31	\$0.61	\$1.59	\$1.46	548	553	532	529	618	611
IAMGOLD	IAG	DR	SP	(\$0.09)	(\$0.17)	(\$0.43)	(\$0.43)	(\$0.59)	(\$0.57)	879	871	910	911	956	921
Pretium	PVG	DR	O - Spec	(\$0.42)	(\$0.38)	\$1.11	\$1.16	\$1.21	\$1.21	387	387	432	434	445	440
Roxgold	ROXG	DR	O - Spec	(\$0.00)	\$0.03	\$0.14	\$0.13	\$0.13	\$0.12	119	120	139	139	129	127
Sandstorm Gold	SSL	DR	O - Spec	(\$0.03)	(\$0.02)	\$0.20	\$0.21	\$0.18	\$0.19	56	57	65	65	60	60
Torex Gold	TXG	DR	O - Spec	\$0.40	\$0.91	\$1.60	\$1.57	\$1.89	\$1.87	350	348	413	411	418	419
Wheaton Precious Metals	WPM	DR	O	(\$0.91)	(\$0.91)	\$1.14	\$1.18	\$1.21	\$1.25	662	690	693	708	731	746

\*\*Koz attributable gold production for gold producers, Koz attributable gold equivalent production for royalty/streaming companies. Source: RBC Capital Markets estimates



Exhibit 5: Estimate change and valuation rationale

Company	Ticker	Analyst	Rationale	Link to Related RBC Comment
B2Gold	BTO	DR	We have updated our estimates following Q3/18 financial results, as B2Gold remains well positioned to meet the upper end of production guidance and lower end of cost guidance for 2018. We maintain our Outperform rating and C\$4.25 price target.	<a href="#">Link</a>
Endeavour Mining	EDV	DR	We have updated our estimates following Q3/18 results and the release of maiden resources at Kari Pump and Fetekro. After a solid Q3/18 result, Endeavour is set up for a strong end to the year, targeting the upper end of production guidance and lower end of cost guidance for 2018. A maiden resource of 1.0 Moz at 2.7 g/t was declared at Kari Pump, while 720 Koz at 2.25 g/t was delineated on the Lafigue target at Fetekro. We maintain our Outperform and C\$30 price target.	<a href="#">Link</a> <a href="#">Link</a> <a href="#">Link</a>
IAMGOLD	IAG	DR	We have updated our estimates following Q3/18 financial results, with production during the quarter coming in slightly weaker than we had anticipated given lower than expected operational results at Rosebel and total full year guidance maintained. The company also announced the Essakane heap leach project will be deferred to the end of the mine life as the company looks to optimize the CIL circuit to increase production. The deferral of this project has led to a 1% decline in attributable production through 2021. We maintain our Sector Perform rating and \$6 price target.	<a href="#">Link</a>
Pretium	PVG	DR	We have updated our estimates following Q3/18 financial results, as better than anticipated earnings print was driven by lower than forecast costs at Brucejack, with all-in sustaining cost coming in below the lower end of H2/18 guidance. We maintain our Outperform, Speculative Risk rating and C\$14 price target.	<a href="#">Link</a>
Roxgold	ROXG	DR	We have updated our estimates following Q3/18 financial results, as Roxgold remains on track to meet the upper end of production and lower end of cost guidance. After modest revisions to our model, we maintain our Outperform, Speculative Risk rating and have decreased our price target to C\$1.35 from C\$1.40 given the impact of a stronger CAD on our rounded price target.  We derive our C\$1.35 target price by applying a 0.9x multiple to our NAV estimate and 9.0x multiple to our 3-year forward AdjCF forecast (operating cash flow adjusted for ongoing expenditures). The multiples compare to Roxgold's Junior peers (0.91x and 9.4x) reflecting fundamental positioning as per our Multiple Matrix, a multi-factor weighted model which analyzes fundamental positioning across key investment attributes/risks. Our Outperform, Speculative Risk rating is premised on Roxgold's underlying exploration potential and near-term growth prospects balanced against single asset risk, shorter implied reserve life and lower trading liquidity. Our positive outlook on Roxgold's fundamentals, valuation relative to peers on sustaining free cash flow, and the implied return to our price target support our Outperform rating.	<a href="#">Link</a>
Sandstorm Gold	SSL	DR	We have updated our estimates following Q3/18 results and Sandstorm's announcement that it intends to repurchase 18.3M shares (~10% of shares outstanding) by the end of 2019. Our NAV was stable while our 3-year forward EPS and CFPS estimates increased due to lower depreciation assumptions and a lower average share count given the expected buy-backs.	<a href="#">Link</a> <a href="#">Link</a>
Torex Gold	TXG	DR	We have updated our estimates following Q3/18 financial results, as Torex is on track to meet the upper end of production guidance and expects further gains on the cost front as the SART plant is fully commissioned and contribution from the high-grade Sub Sill increases. We maintain our Outperform, Speculative Risk rating and C\$16 price target.	<a href="#">Link</a>
Wheaton Precious Metals	WPM	DR	We have updated our estimates following Q3/18 results. Our NAV was stable while our forward-looking EPS, CFPS and gold-equivalent ounce (GEO) production estimates increased modestly, primarily due to higher attributable GEO assumptions for the Aljustrel mine.	<a href="#">Link</a>

Source: RBC Capital Markets



## Appendix III: Weekly valuation tables

### Senior, Intermediate and Junior Gold Producers - Valuation Summary

Company	Ticker	RBC Estimates				Performance		Dividend		Valuation						2018E Operations			Leverage		Liquidity
		Rating & Risk	Price	Target (12m)	Implied Rt. to Target	QTD	YTD	/sh	Yield	2018E						Prod (000oz)	AISC (US\$/oz)	'17-20E CAGR	LTD (MM) YE2017A	Debt to Capital	Cash (MM) YE2017A
										NAV	P/NAV	CFPS	P/CF	EV/EBITDA	P/E						
<b>Senior Gold Producers</b>																					
Agnico-Eagle	AEM	O	\$37.28	\$54.00	46%	9%	(19%)	\$0.44	1.2%	\$27.47	1.36x	\$2.75	13.6x	13.6x	>50x	1,610	\$902	7%	\$1,372	22%	\$644
AngloGold Ashanti	ANG	SP	R141.70	R130.00	-1%	16%	10%	\$0.69	6.9%	R126.00	1.12x	R2.33	4.3x	4.3x	17.1x	3,231	\$996	(3%)	\$2,230	45%	\$205
Barrick Gold	ABX	SP	\$13.46	\$16.00	20%	21%	(7%)	\$0.12	0.9%	\$10.10	1.33x	\$1.71	7.9x	7.9x	33.6x	4,499	\$810	(8%)	\$6,423	41%	\$2,234
Gold Fields	GFI	O	R41.93	R50.00	21%	23%	(22%)	\$0.04	1.4%	R47.88	0.88x	R1.01	2.9x	3.2x	18.6x	2,077	\$999	4%	\$1,588	32%	\$479
Goldcorp	GG	O	\$9.81	\$15.00	54%	(4%)	(23%)	\$0.08	0.8%	\$8.30	1.18x	\$1.39	7.1x	9.7x	>50x	2,286	\$853	4%	\$2,483	15%	\$234
Kinross Gold	KGC	SP	\$2.69	\$4.25	58%	(0%)	(38%)	-	-	\$2.98	0.90x	\$0.67	4.0x	4.5x	32.6x	2,450	\$975	(3%)	\$1,733	27%	\$1,026
Newcrest Mining	NCM	SP	A\$20.74	A\$19.00	-8%	7%	(9%)	A\$0.16	0.8%	A\$20.42	1.02x	A\$1.98	7.6x	6.4x	20.8x	2,395	\$800	2%	\$1,992	21%	\$538
Newmont	NEM	U	\$33.59	\$42.00	27%	11%	(10%)	\$0.56	1.7%	\$20.32	1.65x	\$4.03	8.3x	8.0x	29.0x	4,952	\$975	(2%)	\$4,065	28%	\$3,298
Polymetal	POLY	O	€7.77	€8.00	7%	26%	(16%)	\$0.35	3.5%	€5.89	1.32x	\$1.18	8.5x	8.9x	11.4x	1,557	\$791	7%	\$1,456	53%	\$36
Randgold Resources	RRS	SP	€65.00	€50.00	-21%	19%	(12%)	\$1.54	1.8%	€34.42	1.89x	\$5.41	15.4x	11.3x	27.5x	1,309	\$729	1%	\$3	0%	\$720
Sibanye-Stillwater	SGL	SP	R9.42	R11.00	17%	10%	(38%)	-	-	R11.77	0.80x	R3.52	2.7x	3.7x	14.2x	1,216	\$1,154	(4%)	\$24,082	50%	\$2,062
<b>Global</b>					<b>20%</b>	<b>13%</b>	<b>(17%)</b>	<b>1.7%</b>	<b>1.2%</b>		<b>1.22x</b>		<b>7.5x</b>	<b>7.4x</b>	<b>22.7x</b>		<b>\$908</b>	<b>0%</b>		<b>3%</b>	
<b>North American</b>					<b>41%</b>	<b>8%</b>	<b>(20%)</b>	<b>0.9%</b>	<b>1.2%</b>		<b>1.29x</b>		<b>8.2x</b>	<b>8.7x</b>	<b>31.7x</b>		<b>\$903</b>	<b>(0%)</b>		<b>26%</b>	
<b>Intermediate Gold Producers</b>																					
Acacia Mining	ACA	SP - Spec	£1.88	£1.30	-31%	42%	(5%)	-	-	£1.82	1.03x	\$0.45	5.4x	2.9x	19.5x	514	\$872	(19%)	\$71	6%	\$81
Alamos Gold	AGI	SP	\$3.58	\$7.00	96%	(22%)	(45%)	\$0.02	0.6%	\$6.09	0.59x	\$0.59	6.0x	5.8x	>50x	507	\$994	7%	\$8	0%	\$201
B2Gold	BTO	O	C\$3.62	C\$4.25	17%	23%	(7%)	-	-	C\$2.89	1.25x	\$0.47	5.9x	5.1x	17.9x	843	\$783	14%	\$676	30%	\$147
Centamin	CEY	SP	£1.08	£1.05	-2%	2%	(32%)	\$0.06	4.3%	£0.81	1.34x	\$0.25	5.6x	4.3x	17.5x	482	\$909	(2%)	\$0	0%	\$360
Centerra Gold	CG	U	C\$5.55	C\$7.50	35%	8%	(14%)	-	-	C\$8.05	0.69x	\$1.07	4.0x	3.2x	10.9x	680	\$930	(0%)	\$260	11%	\$416
Detour Gold	DGC	O	C\$10.27	C\$16.00	56%	(2%)	(31%)	-	-	C\$18.24	0.56x	\$1.49	5.3x	6.0x	27.4x	607	\$1,272	1%	\$268	12%	\$134
Eldorado Gold	EGO	U	\$0.63	\$1.25	98%	(29%)	(56%)	-	-	\$1.97	0.32x	\$0.11	5.5x	4.9x	n.m.	329	\$983	1%	\$600	14%	\$485
Endeavour Mining	EDV	O	C\$18.62	C\$30.00	61%	(8%)	(27%)	-	-	C\$18.09	1.03x	\$2.47	5.8x	8.4x	37.1x	553	\$868	3%	\$304	24%	\$123
Evolution Mining	EVN	SP	A\$3.18	A\$2.50	-17%	20%	20%	A\$0.13	3.9%	A\$1.77	1.79x	A\$0.43	7.5x	6.8x	22.1x	779	\$650	(4%)	A\$394	15%	A\$163
IAMGOLD	IAG	SP	\$3.34	\$6.00	80%	(9%)	(43%)	-	-	\$5.06	0.66x	\$0.50	6.7x	4.1x	29.2x	871	\$1,040	1%	\$400	13%	\$664
Kirkland Lake Gold	KL	O	C\$25.72	C\$32.00	25%	5%	33%	C\$0.10	0.4%	C\$20.51	1.25x	\$2.09	9.4x	8.1x	19.0x	658	\$737	9%	\$39	3%	\$232
New Gold	NGD	U	\$0.90	\$1.00	11%	13%	(73%)	-	-	\$1.36	0.66x	\$0.30	3.0x	5.0x	n.m.	432	\$1,020	(2%)	\$1,030	32%	\$216
Northern Star	NST	SP	A\$8.40	A\$9.00	9%	1%	38%	A\$0.14	1.7%	A\$5.57	1.51x	A\$0.70	12.1x	9.4x	21.4x	741	\$820	24%	A\$6	1%	A\$368
OceanaGold	OGC	O	C\$3.99	C\$4.50	14%	2%	24%	\$0.05	1.6%	C\$2.95	1.35x	\$0.55	5.5x	5.5x	14.8x	520	\$774	(1%)	\$240	14%	\$73
Pretium	PVG	O - Spec	C\$10.31	C\$14.00	36%	5%	(28%)	-	-	C\$13.18	0.78x	\$1.10	7.2x	8.5x	12.9x	387	\$754	42%	\$501	37%	\$56
Regis Resources	RRL	U	A\$4.42	A\$3.75	-12%	19%	3%	A\$0.15	3.4%	A\$3.32	1.33x	A\$0.51	8.7x	5.4x	13.2x	356	\$714	(2%)	A\$0	0%	A\$143
SSR Mining	SSRM	O	\$11.18	\$13.00	16%	28%	27%	-	-	\$10.46	1.07x	\$0.96	11.6x	8.8x	42.4x	337	\$1,145	4%	\$265	21%	\$460
Yamana Gold	AUY	O	\$2.18	\$3.50	61%	(12%)	(30%)	\$0.02	0.9%	\$2.63	0.83x	\$0.31	7.1x	5.9x	19.7x	1,022	\$710	(4%)	\$1,870	30%	\$149
<b>Global</b>					<b>31%</b>	<b>5%</b>	<b>(14%)</b>	<b>0.9%</b>	<b>0.9%</b>		<b>1.00x</b>		<b>6.8x</b>	<b>6.0x</b>	<b>21.7x</b>		<b>\$888</b>	<b>4%</b>		<b>15%</b>	
<b>North American</b>					<b>47%</b>	<b>0%</b>	<b>(21%)</b>	<b>0.3%</b>	<b>0.3%</b>		<b>0.85x</b>		<b>6.4x</b>	<b>6.1x</b>	<b>23.1x</b>		<b>\$924</b>	<b>6%</b>		<b>19%</b>	
<b>Junior Gold Producers</b>																					
Alacer Gold	ASR	O	C\$2.18	C\$3.50	61%	9%	(2%)	-	-	C\$3.66	0.60x	\$0.21	8.0x	10.4x	23.4x	122	\$844	21%	\$243	25%	\$203
Alio Gold	ALO	SP - Spec	C\$0.98	C\$1.50	53%	(5%)	(79%)	-	-	C\$2.74	0.36x	\$0.15	5.0x	7.6x	>50x	83	\$1,298	22%	-	0%	\$52
Argonaut Gold	AR	SP	C\$1.37	C\$2.75	101%	(4%)	(43%)	-	-	C\$2.80	0.49x	\$0.36	2.9x	2.8x	11.7x	158	\$972	20%	\$8	1%	\$14
Dundee Precious Metals	DPM	O	C\$3.31	C\$4.50	36%	9%	10%	-	-	C\$4.71	0.70x	\$0.52	4.9x	5.7x	16.1x	198	\$748	9%	\$37	6%	\$29
Guyana Goldfields	GUY	SP - Spec	C\$1.36	C\$3.00	121%	(52%)	(73%)	-	-	C\$3.84	0.35x	\$0.35	3.0x	1.9x	10.5x	154	\$1,047	10%	\$59	13%	\$76
Premier Gold	PG	O	C\$1.66	C\$3.50	111%	(5%)	(54%)	-	-	C\$3.52	0.47x	C\$0.06	20.0x	4.1x	n.m.	94	\$1,004	(2%)	\$19	6%	\$103
Ramellus Resources	RMS	O - Spec	A\$0.39	A\$0.80	108%	(20%)	(0%)	-	-	A\$0.83	0.46x	A\$0.21	1.9x	2.6x	8.2x	208	\$923	(2%)	A\$0	0%	A\$45
Resolute Mining	RSR	SP	A\$0.97	A\$1.25	30%	(11%)	(15%)	A\$0.01	1.4%	A\$1.65	0.59x	A\$0.13	7.2x	11.7x	11.4x	270	\$1,006	2%	A\$35	5%	A\$149
Roxgold	ROXG	O - Spec	C\$0.78	C\$1.35	73%	(5%)	(44%)	-	-	C\$1.01	0.77x	\$0.17	3.5x	2.2x	7.1x	120	\$734	4%	\$51	28%	\$63
Saracen Mineral Holdings	SAR	TP	A\$2.65	A\$2.50	-6%	42%	57%	-	-	A\$2.18	1.22x	A\$0.27	9.8x	8.4x	24.2x	330	\$833	8%	A\$0	0%	A\$65
Silver Lake Resources	SLR	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Teranga Gold	TGZ	O	C\$3.39	C\$6.50	92%	(5%)	13%	-	-	C\$6.19	0.55x	\$0.78	3.3x	3.4x	14.1x	220	\$967	13%	\$14	2%	\$88
TMAC Resources	TMR	O - Spec	C\$5.76	C\$7.50	30%	23%	(40%)	-	-	C\$8.78	0.66x	C\$0.40	14.4x	14.7x	n.m.	123	\$1,385	65%	\$194	19%	\$42
Torex Gold	TXG	O - Spec	C\$11.45	C\$16.00	40%	4%	(4%)	-	-	C\$15.93	0.72x	\$2.22	3.9x	5.5x	>50x	348	\$1,009	19%	\$398	37%	\$45
<b>Global</b>					<b>65%</b>	<b>4%</b>	<b>(21%)</b>	<b>0.1%</b>	<b>0.1%</b>		<b>0.61x</b>		<b>6.8x</b>	<b>6.2x</b>	<b>14.1x</b>		<b>\$982</b>	<b>14%</b>		<b>11%</b>	
<b>North American</b>					<b>72%</b>	<b>(3%)</b>	<b>(32%)</b>	<b>0.0%</b>	<b>0.0%</b>		<b>0.57x</b>		<b>6.9x</b>	<b>5.8x</b>	<b>13.8x</b>		<b>\$1,001</b>	<b>18%</b>		<b>14%</b>	
<b>Indices and Gold</b>																					
<b>Gold</b>			\$1,226			3%	(6%)														
<b>S&amp;P/TSX Gold Index</b>			171			10%	(13%)														
<b>S&amp;P 500</b>			2,650			(9%)	(1%)														

Price Assumptions: Gold: 2018 = \$1,275; 2019+ = \$1,300; Silver: 2018 = \$16.02; 2019+ = \$16.50  
Priced as of market close November 21 2018.  
Source: Company Reports, RBC Capital Markets estimates.



Emerging Gold Producers - Valuation Summary

Company	Ticker	RBC Estimates				Performance				Mineralization		Valuation		Liquidity				
		Rating & Risk	Price	Target (12m)	Implied Rt. to Target	52wk Low	52wk High	QTD	YTD	Reserve (P&P) (4)	Resource (M&I) (4)	NAV	P/NAV	EV/Rsrv	EV/Rsrc	Cash (MM) YE2017A	Shares (MM)	Mkt Cap (US\$M)
<b>Emerging Gold Producers</b>																		
Continental Gold	CNL	O - Spec	C\$2.09	C\$4.50	115%	C\$1.98	C\$4.13	(21%)	(38%)	3.7	4.5	\$5.50	0.38x	\$131	\$109	\$91	220.1	\$352
Dacian Gold Ltd	DCN	O	A\$2.25	A\$3.25	44%	A\$2.10	A\$3.20	1%	(20%)	1.2	2.4	A\$2.90	0.78x	\$295	\$147	A\$117	220.7	\$358
Gold Road Resources	GOR	O	A\$0.64	A\$0.80	26%	A\$0.60	A\$0.85	(7%)	(9%)	1.8	2.4	A\$0.74	0.86x	\$197	\$144	A\$138	877.5	\$402
Marathon Gold	MOZ	O - Spec	C\$0.70	C\$1.80	157%	C\$0.65	C\$1.28	(17%)	(39%)	-	2.7	C\$1.85	0.38x	n.m.	\$29	C\$7	150.6	\$81
Midas Gold Corp.	MAX	SP - Spec	C\$0.65	C\$1.25	92%	C\$0.55	C\$1.21	(29%)	10%	4.6	5.6	C\$1.23	0.53x	\$20	\$17	\$19	187.0	\$93
NovaGold	NG	SP - Spec	C\$5.17	C\$7.50	45%	C\$4.33	C\$6.47	8%	5%	16.9	19.5	C\$7.46	0.69x	\$72	\$62	C\$84	322.3	\$1,277
Osisko Mining	OSK	O - Spec	C\$2.50	C\$4.50	80%	C\$1.60	C\$3.86	6%	(26%)	-	3.7	C\$4.25	0.59x	n.m.	\$110	C\$112	239.8	\$459
Liberty Gold	LGD	O - Spec	C\$0.33	C\$0.70	112%	C\$0.30	C\$0.50	(12%)	(25%)	-	2.2	C\$0.70	0.47x	n.m.	\$19	C\$2	184.6	\$47
Sabina Gold & Silver	SBB	SP - Spec	C\$1.47	C\$2.25	53%	C\$1.11	C\$2.62	23%	(35%)	2.5	5.3	C\$2.16	0.68x	\$117	\$55	C\$32	302.9	\$341
SilverCrest	SIL	O - Spec	C\$3.24	C\$5.00	54%	C\$1.12	C\$3.80	3%	81%	-	-	C\$4.76	0.68x	n.m.	n.m.	C\$10	75.9	\$188
<b>Global</b>					<b>78%</b>			<b>(4%)</b>	<b>(10%)</b>			<b>0.60x</b>		<b>\$139</b>	<b>\$77</b>		<b>278.1</b>	<b>\$360</b>
<b>Indices and Gold</b>																		
Gold			\$1,226					3%	(6%)									
S&P/TSX Gold Index			171					10%	(13%)									
S&P 500			2,650					(9%)	(1%)									

Silver Producers and Royalty & Streaming Companies - Valuation Summary

Company	Ticker	RBC Estimates				Performance		Dividend		Valuation						2018E Operations			Leverage		Liquidity
		Rating & Risk	Price	Target (12m)	Implied Rt. to Target	QTD	YTD	/sh	Yield	2018E						Prod (000oz)	AISC (US\$/oz)	'17-20E CAGR	LTD (MM) YE2017A	Debt to Capital	Cash (MM) YE2017A
<b>Silver Producers</b>																					
Coeur Mining	CDE	O	\$4.35	\$8.00	84%	(18%)	(42%)	-	-	\$5.01	0.87x	\$0.63	6.9x	7.6x	n.m.	13.0	\$10.6	(4%)	\$411	34%	\$192
Fresnillo	FRES	TP	€9.25	€13.00	42%	13%	(35%)	\$0.23	1.9%	€7.16	1.29x	\$1.15	10.3x	7.9x	21.6x	62.0	\$10.5	6%	\$799	21%	\$876
Hecla Mining	HL	SP	\$2.59	\$3.25	26%	(7%)	(35%)	\$0.01	0.4%	\$2.50	1.03x	\$0.23	11.5x	11.0x	n.m.	10.3	\$11.4	2%	\$514	26%	\$220
Hochschild Mining	HOC	SP	£1.64	£2.55	57%	(0%)	(38%)	\$0.02	0.9%	£1.65	0.99x	\$0.44	4.7x	3.9x	26.5x	19.6	\$12.7	2%	\$360	30%	\$257
Pan American Silver**	PAAS	SP	\$13.76	\$17.00	25%	(7%)	(12%)	\$0.14	1.0%	\$13.67	1.01x	\$1.30	10.6x	8.5x	29.5x	25.4	\$9.2	11%	\$8	0%	\$228
<b>Global</b>					<b>47%</b>	<b>(4%)</b>	<b>(32%)</b>		<b>0.8%</b>		<b>1.04x</b>		<b>8.8x</b>	<b>7.8x</b>	<b>25.9x</b>		<b>\$10.9</b>	<b>3%</b>		<b>22%</b>	
<b>Royalties &amp; Streaming</b>																					
Franco-Nevada	FNV	O	C\$93.00	C\$115.00	25%	15%	(7%)	\$0.96	1.3%	C\$41.13	2.26x	\$2.62	27.2x	24.7x	>50x	454	\$302	4%	-	0%	\$511
Osisko Gold Royalties	OR	O	C\$10.30	C\$16.00	57%	5%	(29%)	C\$0.20	1.9%	\$7.37	1.40x	\$0.54	19.0x	14.3x	>50x	81	\$358	19%	\$464	20%	\$334
Royal Gold	RGLD	O	\$75.73	\$105.00	40%	(2%)	(8%)	\$1.00	1.3%	\$33.51	2.26x	\$4.19	18.1x	15.7x	43.0x	354	\$368	1%	\$586	20%	\$86
Sandstorm Gold	SSL	O - Spec	C\$5.46	C\$7.50	37%	14%	(13%)	-	-	C\$3.75	1.46x	\$0.25	17.0x	15.1x	>50x	57	\$460	3%	-	0%	\$31
Wheaton Precious Metals	WPM	O	\$16.30	\$24.00	49%	(7%)	(26%)	\$0.36	2.2%	\$10.59	1.54x	\$1.11	14.6x	16.0x	32.5x	690	\$416	0%	\$770	14%	\$99
<b>Global</b>					<b>42%</b>	<b>5%</b>	<b>(17%)</b>		<b>1.4%</b>		<b>1.78x</b>		<b>19.2x</b>	<b>17.2x</b>	<b>37.8x</b>		<b>\$381</b>	<b>5%</b>		<b>11%</b>	
<b>Indices and Commodities</b>																					
Gold			\$1,226			3%	(6%)														
Silver			\$14.47			(2%)	(15%)														
S&P/TSX Gold Index			171			10%	(13%)														
S&P 500			2,650			(9%)	(1%)														

Price Assumptions: Gold: 2018 = \$1,275; 2019+ = \$1,300; Silver: 2018 = \$16.02; 2019+ = \$16.50  
Priced as of market close November 21 2018.  
Source: Company Reports, RBC Capital Markets estimates.



Senior, Intermediate and Junior Gold Producers - Corporate Summary (1/4)

Company	Tick	Price Curr	Report Curr	Analyst	Rating	Price	Target (12m)	Implied Rt. to Target	Performance		52 Wk Low	52 Wk High	NAV	P/NAV	Shares (MM)	Mkt Cap (US\$M)	EV (1) (US\$M)
										QTD	YTD						
<b>Senior Gold Producers</b>																	
Agnico-Eagle	AEM	USD	USD	SW	O	\$37.28	\$54.00	46%	9%	(19%)	\$32.18	\$49.80	\$27.47	1.36x	233	\$8,692	\$10,033
AngloGold Ashanti	ANG	ZAR	USD	JB	SP	R141.70	R130.00	-1%	16%	10%	R100.21	R154.20	R126.00	1.12x	410	\$4,123	\$6,102
Barrick Gold	ABX	USD	USD	SW	SP	\$13.46	\$16.00	20%	21%	(7%)	\$9.53	\$15.52	\$10.10	1.33x	1,167	\$15,708	\$21,742
Gold Fields	GFI	ZAR	USD	JB	O	R41.93	R50.00	21%	23%	(22%)	R32.90	R59.16	R47.88	0.88x	821	\$2,442	\$3,671
Goldcorp	GG	USD	USD	SW	O	\$9.81	\$15.00	54%	(4%)	(23%)	\$8.42	\$15.55	\$8.30	1.18x	867	\$8,505	\$11,461
Kinross Gold	KGC	USD	USD	SW	SP	\$2.69	\$4.25	58%	(0%)	(38%)	\$2.38	\$4.78	\$2.98	0.90x	1,250	\$3,363	\$4,770
Newcrest Mining	NCM	AUD	USD	PH	SP	A\$20.74	A\$19.00	-8%	7%	(9%)	A\$18.58	A\$24.27	A\$20.42	1.02x	766	\$11,466	\$10,508
Newmont	NEM	USD	USD	SW	U	\$33.59	\$42.00	27%	11%	(10%)	\$29.06	\$42.04	\$20.32	1.65x	535	\$17,971	\$18,130
Polymetal	POLY	GBP	USD	JB	O	£7.77	£8.00	7%	26%	(16%)	£5.78	£9.45	£5.89	1.32x	453	\$4,519	\$6,344
Randgold Resources	RRS	GBP	USD	JB	SP	£65.00	£50.00	-21%	19%	(12%)	£46.07	£74.70	£34.42	1.89x	94	\$7,888	\$7,177
Sibanye-Stillwater	SGL	ZAR	ZAR	JB	SP	R9.42	R11.00	17%	10%	(38%)	R6.82	R19.16	R11.77	0.80x	2,262	\$1,512	\$2,708
<b>Global</b>								<b>20%</b>	<b>13%</b>	<b>(17%)</b>				<b>1.22x</b>		<b>\$86,189</b>	<b>\$102,645</b>
<b>North American</b>								<b>41%</b>	<b>8%</b>	<b>(20%)</b>				<b>1.29x</b>		<b>\$54,238</b>	<b>\$66,135</b>
<b>Intermediate Gold Producers</b>																	
Acacia Mining	ACA	GBP	USD	JB	SP - Spec	£1.88	£1.30	-31%	42%	(5%)	£0.94	£2.06	£1.82	1.03x	410	\$991	\$693
Alamos Gold	AGI	USD	USD	DR	SP	\$3.58	\$7.00	96%	(22%)	(45%)	\$3.32	\$7.03	\$6.09	0.59x	391	\$1,400	\$1,233
B2Gold	BTO	CAD	USD	DR	O	C\$3.62	C\$4.25	17%	23%	(7%)	C\$2.77	C\$4.06	C\$2.89	1.25x	990	\$2,745	\$3,065
Centamin	CEY	GBP	USD	JB	SP	£1.08	£1.05	-2%	2%	(32%)	£0.85	£1.68	£0.81	1.34x	1,151	\$1,596	\$1,242
Centerra Gold	CG	CAD	USD	SW	U	C\$5.55	C\$7.50	35%	8%	(14%)	C\$4.76	C\$8.21	C\$8.05	0.69x	292	\$1,241	\$1,544
Detour Gold	DGC	CAD	USD	DR	O	C\$10.27	C\$16.00	56%	(2%)	(31%)	C\$9.11	C\$15.40	C\$18.24	0.56x	175	\$1,379	\$1,580
Eldorado Gold	EGO	USD	USD	DR	U	\$0.63	\$1.25	98%	(29%)	(56%)	\$0.60	\$1.47	\$1.97	0.32x	794	\$500	\$663
Endeavour Mining	EDV	CAD	USD	DR	O	C\$18.62	C\$30.00	61%	(8%)	(27%)	C\$17.10	C\$26.86	C\$18.09	1.03x	108	\$1,537	\$2,253
Evolution Mining	EVN	AUD	AUD	PH	SP	A\$3.18	A\$2.50	-17%	20%	20%	A\$0.60	A\$1.47	A\$1.77	1.79x	1,697	\$3,894	\$3,846
IAMGOLD	IAG	USD	USD	DR	SP	\$3.34	\$6.00	80%	(9%)	(43%)	\$2.75	\$6.52	\$5.06	0.66x	467	\$1,558	\$1,404
Kirkland Lake Gold	KL	CAD	USD	DR	O	C\$25.72	C\$32.00	25%	5%	33%	C\$16.54	C\$30.94	C\$20.51	1.25x	210	\$4,131	\$3,626
New Gold	NGD	USD	USD	DR	U	\$0.90	\$1.00	11%	13%	(73%)	\$0.70	\$3.56	\$1.36	0.66x	579	\$520	\$1,414
Northern Star	NST	AUD	AUD	PH	SP	A\$8.40	A\$9.00	9%	1%	38%	A\$5.57	A\$9.49	A\$5.57	1.51x	641	\$3,888	\$3,572
OceanaGold	OGC	CAD	USD	DR/PH	O	C\$3.99	C\$4.50	14%	2%	24%	C\$2.92	C\$4.19	C\$2.95	1.35x	618	\$1,890	\$2,007
Pretium	PVG	CAD	USD	DR	O - Spec	C\$10.31	C\$14.00	36%	5%	(28%)	C\$7.93	C\$14.94	C\$13.18	0.78x	183	\$1,448	\$1,876
Regis Resources	RRL	AUD	AUD	PH	U	A\$4.42	A\$3.75	-12%	19%	3%	A\$3.65	A\$5.30	A\$3.32	1.33x	507	\$1,618	\$1,185
SSR Mining	SSRM	USD	USD	DR	O	\$11.18	\$13.00	16%	28%	27%	\$7.64	\$11.44	\$10.46	1.07x	120	\$1,344	\$1,200
Yamana Gold	AUY	USD	USD	DR	O	\$2.18	\$3.50	61%	(12%)	(30%)	\$2.00	\$3.80	\$2.63	0.83x	949	\$2,070	\$3,940
<b>Global</b>								<b>31%</b>	<b>5%</b>	<b>(14%)</b>				<b>1.00x</b>		<b>\$33,752</b>	<b>\$36,343</b>
<b>North American</b>								<b>47%</b>	<b>0%</b>	<b>(21%)</b>				<b>0.85x</b>		<b>\$21,765</b>	<b>\$25,804</b>
<b>Junior Gold Producers</b>																	
Alacer Gold	ASR	CAD	USD	MM	O	C\$2.18	C\$3.50	61%	9%	(2%)	C\$1.97	C\$2.97	C\$3.66	0.60x	294	\$491	\$734
Alio Gold	ALO	CAD	USD	MM	SP - Spec	C\$0.98	C\$1.50	53%	(5%)	(79%)	C\$0.81	C\$4.92	C\$2.74	0.36x	85	\$64	\$77
Argonaut Gold	AR	CAD	USD	MM	SP	C\$1.37	C\$2.75	101%	(4%)	(43%)	C\$1.24	C\$2.87	C\$2.80	0.49x	178	\$187	\$185
Dundee Precious Metals	DPM	CAD	USD	MM	O	C\$3.31	C\$4.50	36%	9%	10%	C\$2.56	C\$3.78	C\$4.71	0.70x	179	\$453	\$582
Guyana Goldfields	GUY	CAD	USD	MM	SP - Spec	C\$1.36	C\$3.00	121%	(52%)	(73%)	C\$1.28	C\$5.42	C\$3.84	0.35x	174	\$181	\$117
Premier Gold	PG	CAD	USD	MM	O	C\$1.66	C\$3.50	111%	(5%)	(54%)	C\$1.59	C\$3.94	C\$3.52	0.47x	203	\$259	\$211
Ramellus Resources	RMS	AUD	AUD	PH	O - Spec	A\$0.39	A\$0.80	108%	(20%)	(0%)	A\$0.32	A\$0.64	A\$0.83	0.46x	529	\$147	\$221
Resolute Mining	RSG	AUD	AUD	PH	SP	A\$0.97	A\$1.25	30%	(11%)	(15%)	A\$0.94	A\$1.44	A\$1.65	0.59x	741	\$519	\$740
Roxgold	ROXG	CAD	USD	DR	O - Spec	C\$0.78	C\$1.35	73%	(5%)	(44%)	C\$0.78	C\$1.44	C\$1.01	0.77x	373	\$223	\$189
Saracen Mineral Holdings	SAR	AUD	AUD	PH	TP	A\$2.65	A\$2.50	-6%	42%	57%	A\$1.38	A\$2.66	A\$2.18	1.22x	813	\$1,554	\$1,396
Silver Lake Resources	SLR	AUD	AUD	PH	R	R	R	R	R	R	R	R	R	R	R	R	R
Teranga Gold	TGZ	CAD	USD	SW	O	C\$3.39	C\$6.50	92%	(5%)	13%	C\$2.38	C\$5.63	C\$6.19	0.55x	108	\$279	\$399
TMAC Resources	TMR	CAD	CAD	MM	O - Spec	C\$5.76	C\$7.50	30%	23%	(40%)	C\$3.95	C\$11.50	C\$8.78	0.66x	112	\$496	\$588
Torex Gold	TXG	CAD	USD	DR	O - Spec	C\$11.45	C\$16.00	40%	4%	(4%)	C\$7.29	C\$14.58	C\$15.93	0.72x	85	\$745	\$949
<b>Global</b>								<b>65%</b>	<b>(2%)</b>	<b>(21%)</b>				<b>0.61x</b>		<b>\$5,596</b>	<b>\$6,390</b>
<b>North American</b>								<b>72%</b>	<b>(3%)</b>	<b>(32%)</b>				<b>0.57x</b>		<b>\$3,376</b>	<b>\$4,033</b>

Price Assumptions: Gold: 2018 = \$1,275; 2019+ = \$1,300; Silver: 2018 = \$16.02; 2019+ = \$16.50

Priced as of market close November 21 2018.

Continued...





Senior, Intermediate and Junior Gold Producers - Cash Flow Metrics (2/4)

Company	Tick	CFPS (2)				P/CF				AdjCFPS (after sustaining capital)				EV/AdjCF			
		17A	18E	19E	20E	17A	18E	19E	20E	17A	18E	19E	20E	17A	18E	19E	20E
<b>Senior Gold Producers</b>																	
Agnico-Eagle	AEM	\$3.47	\$2.75	\$3.76	\$4.41	10.7x	13.6x	9.9x	8.5x	\$2.69	\$1.95	\$2.95	\$3.25	16.0x	22.0x	14.6x	13.2x
AngloGold Ashanti	ANG	\$2.78	\$2.33	\$3.54	\$3.95	3.6x	4.3x	2.8x	2.5x	\$0.82	\$0.64	\$1.57	\$2.03	18.0x	23.2x	9.5x	7.3x
Barrick Gold	ABX	\$2.21	\$1.71	\$2.04	\$1.86	6.1x	7.9x	6.6x	7.2x	\$1.54	\$0.86	\$1.51	\$1.41	12.1x	21.7x	12.3x	13.2x
Gold Fields	GFI	\$1.14	\$1.01	\$0.78	\$1.11	2.6x	2.9x	3.8x	2.7x	\$1.09	\$0.96	\$0.74	\$1.07	4.1x	4.6x	6.0x	4.2x
Goldcorp	GG	\$1.53	\$1.39	\$1.99	\$2.14	6.4x	7.1x	4.9x	4.6x	\$0.89	\$0.67	\$1.16	\$1.34	14.9x	19.6x	11.4x	9.9x
Kinross Gold	KGC	\$0.77	\$0.67	\$0.82	\$0.74	3.5x	4.0x	3.3x	3.6x	\$0.51	\$0.42	\$0.55	\$0.45	7.4x	9.0x	6.9x	8.4x
Newcrest Mining	NCM	\$1.72	\$1.98	\$1.85	\$1.88	8.7x	7.6x	8.1x	8.0x	\$1.35	\$1.66	\$1.55	\$1.59	10.2x	8.3x	8.9x	8.6x
Newmont	NEM	\$4.45	\$4.03	\$4.22	\$4.30	7.5x	8.3x	8.0x	7.8x	\$3.75	\$3.28	\$3.30	\$3.37	9.0x	10.3x	10.3x	10.0x
Polymetal	POLY	\$1.40	\$1.18	\$1.56	\$1.36	7.1x	8.5x	6.4x	7.3x	\$1.16	\$0.94	\$1.27	\$0.83	12.0x	14.9x	11.0x	16.9x
Randgold Resources	RRS	\$5.91	\$5.41	\$6.07	\$6.18	14.1x	15.4x	13.8x	13.5x	\$3.82	\$3.83	\$4.81	\$4.92	19.9x	19.8x	15.8x	15.4x
Sibanye-Stillwater	SGL	R1.45	R3.52	R5.37	R4.00	6.5x	2.7x	1.8x	2.4x	R0.98	R3.45	R5.30	R3.93	17.2x	4.9x	3.2x	4.3x
<b>Global</b>						<b>7.0x</b>	<b>7.5x</b>	<b>6.3x</b>	<b>6.2x</b>					<b>12.8x</b>	<b>14.4x</b>	<b>10.0x</b>	<b>10.1x</b>
<b>North American</b>						<b>6.9x</b>	<b>8.2x</b>	<b>6.5x</b>	<b>6.3x</b>					<b>11.9x</b>	<b>16.5x</b>	<b>11.1x</b>	<b>11.0x</b>
<b>Intermediate Gold Producers</b>																	
Acacia Mining	ACA	\$0.71	\$0.45	\$0.59	\$0.54	3.4x	5.4x	4.1x	4.5x	\$0.39	\$0.23	\$0.37	\$0.38	4.3x	7.3x	4.5x	4.4x
Alamos Gold	AGI	\$0.50	\$0.59	\$0.69	\$0.67	7.1x	6.0x	5.2x	5.3x	\$0.38	\$0.36	\$0.45	\$0.45	8.2x	8.9x	7.0x	7.0x
B2Gold	BTO	\$0.17	\$0.47	\$0.41	\$0.44	16.7x	5.9x	6.7x	6.3x	\$0.07	\$0.36	\$0.29	\$0.34	46.1x	8.6x	10.6x	9.1x
Centamin	CEY	\$0.29	\$0.25	\$0.28	\$0.29	4.8x	5.6x	5.0x	4.8x	\$0.27	\$0.20	\$0.17	\$0.18	4.0x	5.5x	6.3x	5.8x
Centerra Gold	CG	\$1.66	\$1.07	\$1.16	\$1.99	2.6x	4.0x	3.7x	2.1x	\$0.91	\$0.43	\$0.42	\$0.99	5.8x	12.4x	12.6x	5.4x
Detour Gold	DGC	\$1.52	\$1.49	\$1.39	\$1.50	5.2x	5.3x	5.7x	5.2x	\$0.69	\$0.08	\$0.31	\$0.61	13.1x	>50x	28.7x	14.8x
Eldorado Gold	EGO	-\$0.01	\$0.11	\$0.15	\$0.17	n.m.	5.5x	4.3x	3.7x	\$0.02	\$0.10	\$0.08	\$0.12	>50x	8.5x	10.2x	7.0x
Endeavour Mining	EDV	\$2.38	\$2.47	\$2.94	\$3.75	6.0x	5.8x	4.9x	3.8x	\$1.59	\$1.80	\$2.26	\$2.96	13.2x	11.6x	9.2x	7.1x
Evolution Mining	EVN	A\$0.40	A\$0.43	A\$0.42	A\$0.43	7.9x	7.5x	7.6x	7.4x	A\$0.36	A\$0.35	A\$0.35	A\$0.37	8.6x	8.9x	9.0x	8.5x
IAMGOLD	IAG	\$0.59	\$0.50	\$0.80	\$0.81	5.7x	6.7x	4.2x	4.1x	\$0.46	\$0.29	\$0.51	\$0.46	6.5x	10.4x	5.9x	6.6x
Kirkland Lake Gold	KL	\$1.44	\$2.09	\$2.16	\$2.48	13.7x	9.4x	9.1x	7.9x	\$0.80	\$1.45	\$1.45	\$1.71	21.6x	12.0x	11.9x	10.1x
New Gold	NGD	\$0.49	\$0.30	\$0.27	\$0.50	1.8x	3.0x	3.4x	1.8x	\$0.46	\$0.07	\$0.05	\$0.30	5.3x	34.3x	>50x	8.0x
Northern Star	NST	A\$0.62	A\$0.70	A\$1.02	A\$1.07	13.5x	12.1x	8.2x	7.8x	A\$0.41	A\$0.52	A\$0.89	A\$0.94	18.7x	14.8x	8.7x	8.2x
OceanaGold	OGC	\$0.61	\$0.55	\$0.45	\$0.47	5.0x	5.5x	6.8x	6.5x	\$0.42	\$0.31	\$0.33	\$0.34	7.7x	10.4x	9.8x	9.4x
Pretium	PVG	\$0.40	\$1.10	\$1.28	\$1.34	19.9x	7.2x	6.2x	5.9x	\$0.51	\$1.17	\$1.30	\$1.32	20.1x	8.7x	7.9x	7.8x
Regis Resources	RRL	A\$0.47	A\$0.51	A\$0.48	A\$0.49	9.3x	8.7x	9.1x	9.1x	A\$0.38	A\$0.42	A\$0.42	A\$0.43	8.6x	7.8x	7.7x	7.5x
SSR Mining	SSRM	\$1.33	\$0.96	\$1.25	\$1.69	8.4x	11.6x	9.0x	6.6x	\$1.07	\$0.47	\$0.74	\$0.87	9.3x	21.2x	13.5x	11.5x
Yamana Gold	AUY	\$0.39	\$0.31	\$0.55	\$0.61	5.6x	7.1x	4.0x	3.6x	\$0.24	\$0.13	\$0.40	\$0.47	17.4x	31.7x	10.3x	8.8x
<b>Global</b>						<b>8.0x</b>	<b>6.8x</b>	<b>5.9x</b>	<b>5.4x</b>					<b>12.9x</b>	<b>13.1x</b>	<b>10.2x</b>	<b>8.2x</b>
<b>North American</b>						<b>8.1x</b>	<b>6.4x</b>	<b>5.6x</b>	<b>4.8x</b>					<b>14.5x</b>	<b>14.9x</b>	<b>11.5x</b>	<b>8.6x</b>
<b>Junior Gold Producers</b>																	
Alacer Gold	ASR	\$0.36	\$0.21	\$0.57	\$0.69	4.7x	8.0x	2.9x	2.4x	\$0.26	\$0.13	\$0.35	\$0.43	9.7x	18.8x	7.2x	5.8x
Alio Gold	ALO	\$0.61	\$0.15	\$0.33	\$0.39	1.2x	5.0x	2.3x	1.9x	\$0.14	-\$0.03	\$0.18	\$0.25	6.7x	n.m.	5.2x	3.6x
Argonaut Gold	AR	\$0.25	\$0.36	\$0.53	\$0.44	4.3x	2.9x	2.0x	2.4x	\$0.10	\$0.25	\$0.31	\$0.24	10.0x	4.1x	3.4x	4.3x
Dundee Precious Metals	DPM	\$0.51	\$0.52	\$0.52	\$0.81	5.0x	4.9x	4.8x	3.1x	\$0.39	\$0.35	\$0.26	\$0.58	8.5x	9.4x	12.4x	5.7x
Guyana Goldfields	GUY	\$0.49	\$0.35	\$0.75	\$0.64	2.1x	3.0x	1.4x	1.6x	\$0.39	\$0.16	\$0.39	\$0.19	1.7x	4.2x	1.7x	3.6x
Premier Gold	PG	C\$0.32	C\$0.06	C\$0.15	C\$0.26	4.0x	20.0x	8.7x	4.9x	C\$0.29	C\$0.03	C\$0.10	C\$0.20	3.6x	33.8x	10.8x	5.3x
Ramelius Resources	RMS	A\$0.12	A\$0.21	A\$0.23	A\$0.18	3.2x	1.9x	1.7x	2.1x	A\$0.05	A\$0.18	A\$0.19	A\$0.18	11.2x	3.2x	3.0x	3.2x
Resolute Mining	RSG	A\$0.25	A\$0.13	A\$0.23	A\$0.26	3.9x	7.2x	4.3x	3.7x	A\$0.19	(A\$0.02)	A\$0.17	A\$0.21	7.5x	n.m.	8.1x	6.7x
Roxgold	ROXG	\$0.14	\$0.17	\$0.22	\$0.20	4.2x	3.5x	2.7x	3.0x	\$0.09	\$0.11	\$0.16	\$0.14	5.8x	4.5x	3.3x	3.7x
Saracen Mineral Holdings	SAR	A\$0.21	A\$0.27	A\$0.32	A\$0.34	12.7x	9.8x	8.2x	7.7x	A\$0.11	A\$0.21	A\$0.28	A\$0.29	21.5x	11.4x	8.5x	8.3x
Silver Lake Resources	SLR	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Teranga Gold	TGZ	\$0.60	\$0.78	\$0.66	\$1.12	4.3x	3.3x	3.9x	2.3x	\$0.11	\$0.25	\$0.41	\$0.89	34.3x	14.6x	9.0x	4.2x
TMAC Resources	TMR	(C\$0.21)	C\$0.40	C\$1.21	C\$1.72	n.m.	14.4x	4.7x	3.4x	(C\$0.39)	(C\$0.20)	C\$0.79	C\$1.34	n.m.	n.m.	8.7x	5.1x
Torex Gold	TXG	\$0.59	\$2.22	\$2.59	\$2.97	14.8x	3.9x	3.4x	3.0x	\$0.30	\$1.45	\$2.04	\$2.18	36.7x	7.7x	5.5x	5.1x
<b>Global</b>						<b>5.4x</b>	<b>6.8x</b>	<b>3.9x</b>	<b>3.2x</b>					<b>13.1x</b>	<b>11.2x</b>	<b>6.7x</b>	<b>5.0x</b>
<b>North American</b>						<b>5.0x</b>	<b>6.9x</b>	<b>3.7x</b>	<b>2.8x</b>					<b>13.0x</b>	<b>12.1x</b>	<b>6.7x</b>	<b>4.6x</b>

Price Assumptions: Gold: 2018 = \$1,275; 2019+ = \$1,300; Silver: 2018 = \$16.02; 2019+ = \$16.50

Priced as of market close November 21 2018.

Continued...



Senior, Intermediate and Junior Gold Producers - Financial Metrics (3/4)

Company	Tick	EV/EBITDA				P/E				Free CF Yield (2)(3)				/sh	Dividend Yield	Payout	ROE '19E
		17A	18E	19E	20E	17A	18E	19E	20E	17A	18E	19E	20E				
<b>Senior Gold Producers</b>																	
Agnico-Eagle	AEM	10.8x	13.6x	9.7x	8.2x	35.9x	>50x	43.9x	30.1x	-1.2%	-5.3%	3.1%	6.0%	\$0.44	1.2%	52%	4%
AngloGold Ashanti	ANG	4.1x	4.3x	3.5x	3.3x	>50x	17.1x	8.9x	8.5x	4.0%	2.2%	10.9%	15.5%	\$0.69	6.9%	62%	13%
Barrick Gold	ABX	5.8x	7.9x	7.2x	7.5x	17.9x	33.6x	23.1x	24.1x	4.7%	3.5%	6.6%	4.7%	\$0.12	0.9%	21%	7%
Gold Fields	GFI	2.9x	3.2x	2.9x	2.7x	12.6x	18.6x	11.8x	10.2x	-2.9%	-4.8%	9.1%	11.9%	\$0.04	1.4%	16%	7%
Goldcorp	GG	7.6x	9.7x	6.4x	5.8x	20.2x	>50x	30.4x	24.2x	2.4%	-1.0%	8.7%	7.7%	\$0.08	0.8%	25%	2%
Kinross Gold	KGC	4.1x	4.5x	4.1x	4.4x	18.8x	32.6x	16.9x	29.7x	-0.3%	-8.9%	3.9%	0.1%	\$0.00	-	n.m.	4%
Newcrest Mining	NCM	8.2x	6.4x	5.9x	5.7x	44.7x	20.8x	17.9x	15.7x	6.0%	7.7%	5.8%	5.1%	\$0.16	0.8%	14%	8%
Newmont	NEM	7.1x	8.0x	6.3x	6.5x	23.0x	29.0x	17.8x	17.5x	7.6%	1.9%	8.4%	8.8%	\$0.56	1.7%	30%	6%
Polymetal	POLY	8.5x	8.9x	6.8x	7.8x	12.1x	11.4x	8.5x	10.6x	1.3%	2.4%	7.2%	6.8%	\$0.35	3.5%	30%	30%
Randgold Resources	RRS	10.9x	11.3x	9.9x	9.8x	28.6x	27.5x	23.9x	23.7x	4.1%	2.8%	5.7%	5.6%	£1.54	1.8%	44%	9%
Sibanye-Stillwater	SGL	4.0x	3.7x	2.7x	3.6x	n.m.	14.2x	4.6x	8.6x	-15.8%	3.7%	18.5%	15.0%	-	-	n.m.	16%
<b>Global</b>		<b>6.7x</b>	<b>7.4x</b>	<b>6.0x</b>	<b>6.6x</b>	<b>23.8x</b>	<b>22.7x</b>	<b>18.9x</b>	<b>18.4x</b>	<b>0.7%</b>	<b>0.4%</b>	<b>8.0%</b>	<b>7.9%</b>		<b>1.7%</b>	<b>32%</b>	<b>10%</b>
<b>North American</b>		<b>7.1x</b>	<b>8.7x</b>	<b>6.8x</b>	<b>6.5x</b>	<b>23.2x</b>	<b>31.7x</b>	<b>26.4x</b>	<b>25.1x</b>	<b>2.3%</b>	<b>-1.9%</b>	<b>6.2%</b>	<b>5.5%</b>		<b>0.9%</b>	<b>32%</b>	<b>5%</b>
<b>Intermediate Gold Producers</b>																	
Acacia Mining	ACA	2.7x	2.9x	2.9x	3.2x	6.8x	19.5x	9.5x	10.3x	-18.2%	2.1%	8.6%	11.0%	-	-	n.m.	8%
Alamos Gold	AGI	6.8x	5.8x	4.9x	4.7x	33.0x	>50x	30.9x	29.5x	-1.4%	-0.4%	0.1%	6.2%	C\$0.02	0.6%	17%	2%
B2Gold	BTO	12.3x	5.1x	5.6x	5.7x	>50x	17.9x	21.5x	25.2x	-7.5%	5.3%	5.7%	7.7%	-	-	n.m.	8%
Centamin	CEY	3.8x	4.3x	3.9x	3.8x	14.6x	17.5x	13.7x	13.1x	8.7%	4.3%	4.5%	5.0%	\$0.06	4.3%	59%	9%
Centerra Gold	CG	2.5x	3.2x	3.2x	2.1x	4.5x	10.9x	9.6x	3.7x	16.6%	-12.8%	-6.4%	11.8%	-	-	n.m.	6%
Detour Gold	DGC	6.0x	6.0x	5.9x	5.8x	18.4x	27.4x	26.5x	23.6x	6.4%	-0.3%	2.3%	6.5%	-	-	n.m.	3%
Eldorado Gold	EGO	7.3x	4.9x	4.6x	3.8x	31.2x	n.m.	n.m.	n.m.	-58.6%	-35.0%	-34.2%	-64.0%	-	-	n.m.	-1%
Endeavour Mining	EDV	11.2x	8.4x	7.0x	5.3x	20.9x	37.1x	13.6x	6.6x	-18.4%	-14.0%	4.3%	10.2%	-	-	n.m.	11%
Evolution Mining	EVN	7.1x	6.8x	6.4x	6.3x	33.2x	22.1x	17.8x	16.6x	7.6%	7.3%	7.5%	8.8%	A\$0.13	3.9%	70%	3%
IAMGOLD	IAG	4.1x	4.1x	3.2x	3.0x	>50x	29.2x	18.7x	19.1x	3.1%	-5.1%	-13.0%	-16.9%	-	-	n.m.	3%
Kirkland Lake Gold	KL	10.0x	8.1x	7.4x	6.1x	26.7x	19.0x	18.5x	14.2x	3.1%	4.3%	4.3%	6.3%	C\$0.10	0.4%	7%	17%
New Gold	NGD	5.7x	5.0x	5.8x	3.4x	23.7x	n.m.	18.7x	18.7x	-57.1%	-14.5%	-23.4%	3.4%	-	-	n.m.	-4%
Northern Star	NST	11.4x	9.4x	6.2x	5.9x	25.8x	21.4x	15.2x	14.1x	3.2%	4.3%	8.1%	9.0%	A\$0.14	1.7%	25%	14%
OceanaGold	OGC	5.0x	5.5x	6.4x	6.3x	9.6x	14.8x	22.0x	25.1x	3.9%	3.0%	3.8%	2.3%	\$0.05	1.6%	36%	5%
Pretium	PVG	31.5x	8.5x	6.8x	6.7x	>50x	12.9x	9.7x	9.1x	-21.2%	-4.8%	14.6%	15.3%	-	-	n.m.	16%
Regis Resources	RRL	5.6x	5.4x	5.1x	5.2x	13.6x	13.2x	11.9x	12.1x	5.6%	5.9%	8.0%	8.6%	A\$0.15	3.4%	40%	6%
SSR Mining	SSRM	6.7x	8.8x	6.4x	5.0x	33.7x	42.4x	38.4x	21.7x	5.0%	-6.4%	3.6%	4.9%	-	-	n.m.	4%
Yamana Gold	AUY	6.3x	5.9x	5.8x	5.2x	9.3x	19.7x	32.5x	19.3x	-13.2%	-10.5%	6.4%	11.9%	\$0.02	0.9%	30%	2%
<b>Global</b>		<b>8.1x</b>	<b>6.0x</b>	<b>5.4x</b>	<b>4.9x</b>	<b>20.3x</b>	<b>21.7x</b>	<b>19.4x</b>	<b>16.7x</b>	<b>-7.4%</b>	<b>-3.7%</b>	<b>0.3%</b>	<b>2.7%</b>		<b>0.9%</b>	<b>36%</b>	<b>6%</b>
<b>North American</b>		<b>8.9x</b>	<b>6.1x</b>	<b>5.6x</b>	<b>4.9x</b>	<b>21.1x</b>	<b>23.1x</b>	<b>22.0x</b>	<b>18.2x</b>	<b>-10.7%</b>	<b>-7.0%</b>	<b>-2.4%</b>	<b>0.4%</b>		<b>0.3%</b>	<b>22.6%</b>	<b>5.3%</b>
<b>Junior Gold Producers</b>																	
Alacer Gold	ASR	7.2x	10.4x	3.9x	3.4x	13.1x	23.4x	16.0x	9.9x	-49.0%	-43.1%	21.3%	30.3%	-	-	n.m.	4%
Alio Gold	ALO	2.8x	7.6x	2.9x	2.3x	2.2x	>50x	8.8x	5.9x	-46.3%	-33.5%	18.8%	25.3%	-	-	n.m.	3%
Argonaut Gold	AR	4.2x	2.8x	1.7x	1.8x	12.3x	11.7x	5.7x	7.6x	-15.1%	12.3%	25.4%	20.3%	-	-	n.m.	5%
Dundee Precious Metals	DPM	6.3x	5.7x	5.0x	3.1x	27.0x	16.1x	15.1x	6.1x	0.6%	-8.2%	6.1%	21.2%	-	-	n.m.	5%
Guyana Goldfields	GUY	1.5x	1.9x	0.9x	1.1x	7.1x	10.5x	3.2x	4.0x	20.6%	-4.6%	16.2%	-12.4%	-	-	n.m.	13%
Premier Gold	PG	6.8x	4.1x	4.3x	n.m.	14.2x	n.m.	n.m.	n.m.	17.6%	-8.1%	-7.0%	7.5%	-	-	n.m.	-1%
Ramelius Resources	RMS	3.2x	2.6x	2.2x	2.9x	8.6x	8.2x	4.5x	7.1x	-5.0%	25.4%	29.0%	26.0%	-	-	n.m.	6%
Resolute Mining	RSG	8.4x	11.7x	5.6x	4.8x	6.6x	11.4x	5.5x	5.2x	3.2%	-27.2%	-5.9%	10.5%	A\$0.01	1.4%	8%	4%
Roxgold	ROXG	2.4x	2.2x	1.9x	2.2x	7.6x	7.1x	5.9x	6.6x	10.3%	5.5%	21.8%	20.0%	-	-	n.m.	20%
Saracen Mineral Holdings	SAR	11.6x	8.4x	6.8x	5.8x	38.2x	24.2x	16.8x	13.5x	1.2%	3.2%	6.0%	8.0%	-	-	n.m.	25%
Silver Lake Resources	SLR	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Teranga Gold	TGZ	4.2x	3.4x	3.6x	2.6x	8.7x	14.1x	19.3x	8.2x	-2.9%	-50.4%	-22.2%	31.2%	-	-	n.m.	2%
TMAC Resources	TMR	n.m.	14.7x	5.3x	3.8x	n.m.	28.0x	11.9x	n.m.	-18.3%	-9.3%	12.1%	22.1%	-	-	n.m.	3%
Torex Gold	TXG	8.6x	5.5x	4.0x	3.7x	n.m.	>50x	15.6x	12.0x	-6.8%	10.4%	17.9%	21.3%	-	-	n.m.	6%
<b>Global</b>		<b>5.6x</b>	<b>6.2x</b>	<b>3.7x</b>	<b>3.1x</b>	<b>13.2x</b>	<b>14.1x</b>	<b>12.0x</b>	<b>8.2x</b>	<b>-6.9%</b>	<b>-9.8%</b>	<b>10.7%</b>	<b>17.8%</b>		<b>0.1%</b>	<b>8%</b>	<b>7%</b>
<b>North American</b>		<b>4.9x</b>	<b>5.8x</b>	<b>3.3x</b>	<b>2.7x</b>	<b>11.5x</b>	<b>13.8x</b>	<b>13.1x</b>	<b>8.0x</b>	<b>-8.9%</b>	<b>-12.9%</b>	<b>11.0%</b>	<b>18.7%</b>		<b>0.0%</b>	<b>0%</b>	<b>6%</b>

Price Assumptions: Gold: 2018 = \$1,275; 2019+ = \$1,300; Silver: 2018 = \$16.02; 2019+ = \$16.50

Priced as of market close November 21 2018.

Continued...



Senior, Intermediate and Junior Gold Producers - Operational and Reserve/Resource Metrics (4/4)

Company	Tick	Production (Koz)					Cash Costs (\$/oz)				All-in Sustaining Costs (\$/oz)				Reserve (P&P) (4)	Resource (M&I) (4)	EV/Rsrv	EV/Rsrc
		17A	18E	19E	20E	3yr CAGR	17A	18E	19E	20E	17A	18E	19E	20E				
<b>Senior Gold Producers</b>																		
Agnico-Eagle	AEM	1,705	1,610	1,797	2,080	6.8%	\$558	\$650	\$596	\$601	\$804	\$902	\$865	\$870	21.3	40.0	\$472	\$251
AngloGold Ashanti	ANG	3,730	3,231	3,245	3,381	-3.2%	\$781	\$722	\$674	\$712	\$1,054	\$996	\$959	\$979	49.5	153.9	\$123	\$40
Barrick Gold	ABX	5,322	4,499	4,581	4,168	-7.8%	\$526	\$573	\$568	\$581	\$750	\$810	\$834	\$846	64.4	153.0	\$337	\$142
Gold Fields	GFI	2,160	2,077	2,337	2,425	3.9%	\$670	\$698	\$674	\$648	\$1,007	\$999	\$967	\$942	52.1	94.0	\$70	\$39
Goldcorp	GG	2,569	2,286	2,567	2,868	3.7%	\$499	\$551	\$430	\$464	\$824	\$853	\$747	\$734	52.8	88.0	\$217	\$130
Kinross Gold	KGC	2,674	2,450	2,429	2,411	-3.4%	\$669	\$724	\$702	\$728	\$954	\$975	\$986	\$1,030	28.1	56.2	\$170	\$85
Newcrest Mining	NCM	2,286	2,395	2,538	2,454	2.4%	\$601	\$609	\$562	\$519	\$835	\$800	\$735	\$666	65.9	116.5	\$159	\$90
Newmont	NEM	5,266	4,952	5,086	5,026	-1.5%	\$691	\$729	\$676	\$687	\$924	\$975	\$932	\$941	68.5	102.7	\$265	\$176
Polymetal	POLY	1,433	1,557	1,731	1,761	7.1%	\$678	\$695	\$629	\$710	\$880	\$791	\$875	\$980	20.9	26.4	\$304	\$240
Randgold Resources	RRS	1,316	1,309	1,355	1,346	0.8%	\$620	\$641	\$635	\$627	\$754	\$729	\$675	\$671	14.0	34.0	\$513	\$211
Sibanye-Stillwater	SGL	1,357	1,216	1,258	1,188	-4.3%	\$989	\$1,106	\$917	\$1,050	\$1,015	\$1,154	\$1,043	\$1,173	25.7	87.2	\$105	\$31
<b>Global</b>						<b>0.4%</b>	<b>\$662</b>	<b>\$700</b>	<b>\$662</b>	<b>\$642</b>	<b>\$891</b>	<b>\$908</b>	<b>\$874</b>	<b>\$894</b>			<b>\$249</b>	<b>\$131</b>
<b>North American</b>						<b>-0.4%</b>	<b>\$589</b>	<b>\$645</b>	<b>\$594</b>	<b>\$612</b>	<b>\$851</b>	<b>\$903</b>	<b>\$873</b>	<b>\$884</b>			<b>\$292</b>	<b>\$157</b>
<b>Intermediate Gold Producers</b>																		
Acacia Mining	ACA	768	514	573	403	-19.4%	\$596	\$663	\$649	\$625	\$919	\$872	\$840	\$752	7.6	17.4	\$91	\$40
Alamos Gold	AGI	429	507	497	524	6.9%	\$772	\$788	\$726	\$726	\$933	\$994	\$951	\$932	9.9	17.4	\$124	\$71
B2Gold	BTO	587	843	830	861	13.6%	\$579	\$499	\$558	\$598	\$920	\$783	\$837	\$849	6.5	6.5	\$470	\$470
Centamin	CEY	545	482	505	514	-1.9%	\$570	\$629	\$608	\$597	\$790	\$909	\$895	\$883	8.0	11.8	\$155	\$106
Centerra Gold	CG	785	680	666	778	-0.3%	\$453	\$558	\$585	\$378	\$810	\$930	\$991	\$824	16.2	25.7	\$95	\$60
Detour Gold	DGC	571	607	588	590	1.1%	\$717	\$768	\$766	\$769	\$1,064	\$1,272	\$1,191	\$1,127	16.0	20.2	\$98	\$78
Eldorado Gold	EGO	292	329	307	300	0.9%	\$534	\$622	\$579	\$512	\$922	\$983	\$1,150	\$1,029	16.5	27.8	\$40	\$24
Endeavour Mining	EDV	563	553	529	611	2.8%	\$741	\$705	\$657	\$622	\$916	\$868	\$845	\$795	7.6	13.8	\$296	\$163
Evolution Mining	EVN	828	779	745	738	-3.8%	\$417	\$427	\$433	\$380	\$620	\$650	\$656	\$575	7.1	11.9	\$546	\$324
IAMGOLD	IAG	882	871	911	921	1.5%	\$756	\$789	\$755	\$751	\$1,003	\$1,040	\$992	\$1,024	17.4	25.5	\$81	\$55
Kirkland Lake Gold	KL	598	658	697	770	8.8%	\$517	\$436	\$431	\$412	\$814	\$737	\$718	\$679	4.6	13.3	\$781	\$272
New Gold	NGD	431	432	325	401	-2.4%	\$403	\$449	\$471	\$192	\$730	\$1,020	\$1,146	\$704	13.7	18.1	\$103	\$78
Northern Star	NST	547	741	964	1,036	23.7%	\$601	\$661	\$645	\$650	\$778	\$820	\$755	\$757	4.3	9.5	\$837	\$375
OceanaGold	OGC	560	520	530	551	-0.6%	\$348	\$473	\$589	\$640	\$618	\$774	\$869	\$875	5.9	8.7	\$341	\$231
Pretium	PVG	152	387	434	440	42.4%	\$683	\$607	\$554	\$556	\$852	\$754	\$715	\$716	8.7	10.0	\$216	\$188
Regis Resources	RRL	354	356	350	337	-1.5%	\$611	\$638	\$606	\$590	\$692	\$714	\$672	\$650	4.2	7.1	\$281	\$166
SSR Mining	SSRM	359	337	363	398	3.5%	\$704	\$742	\$724	\$651	\$972	\$1,145	\$1,060	\$1,033	4.6	19.3	\$260	\$62
Yamana Gold	AUY	1,096	1,022	939	963	-4.2%	\$541	\$449	\$373	\$304	\$818	\$710	\$661	\$580	17.7	33.7	\$222	\$117
<b>Global</b>						<b>3.9%</b>	<b>\$586</b>	<b>\$606</b>	<b>\$595</b>	<b>\$553</b>	<b>\$843</b>	<b>\$888</b>	<b>\$886</b>	<b>\$821</b>			<b>\$280</b>	<b>\$160</b>
<b>North American</b>						<b>5.7%</b>	<b>\$596</b>	<b>\$607</b>	<b>\$598</b>	<b>\$547</b>	<b>\$875</b>	<b>\$924</b>	<b>\$933</b>	<b>\$859</b>			<b>\$241</b>	<b>\$144</b>
<b>Junior Gold Producers</b>																		
Alacer Gold	ASR	135	122	231	238	20.9%	\$539	\$566	\$603	\$521	\$798	\$844	\$876	\$774	3.6	5.3	\$204	\$140
Alio Gold	ALO	84	83	119	150	21.6%	\$831	\$1,049	\$1,012	\$1,024	\$1,158	\$1,298	\$1,185	\$1,154	1.9	4.7	\$41	\$17
Argonaut Gold	AR	123	158	212	211	19.7%	\$787	\$770	\$710	\$731	\$1,078	\$972	\$966	\$968	4.5	9.7	\$41	\$19
Dundee Precious Metals	DPM	198	198	222	255	8.9%	\$598	\$531	\$634	\$478	\$783	\$748	\$945	\$722	2.7	6.1	\$216	\$96
Guyana Goldfields	GUY	161	154	221	215	10.3%	\$656	\$775	\$631	\$713	\$847	\$1,047	\$971	\$1,134	4.0	6.3	\$30	\$19
Premier Gold	PG	140	94	96	130	-2.4%	\$508	\$742	\$689	\$684	\$699	\$1,004	\$975	\$907	3.0	6.7	\$70	\$32
Ramelius Resources	RMS	196	208	212	185	-1.9%	\$0	\$748	\$682	\$743	\$0	\$923	\$892	\$980	0.7	2.4	\$316	\$93
Resolute Mining	RSG	302	270	333	317	1.6%	\$884	\$909	\$780	\$687	\$1,019	\$1,006	\$970	\$877	5.9	10.7	\$125	\$69
Roxgold	ROXG	114	120	139	127	3.7%	\$438	\$428	\$468	\$500	\$740	\$734	\$760	\$784	0.7	0.8	\$253	\$227
Saracen Mineral Holdings	SAR	303	330	354	383	8.1%	\$743	\$726	\$646	\$613	\$924	\$833	\$744	\$720	2.1	9.1	\$661	\$154
Silver Lake Resources	SLR	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Teranga Gold	TGZ	210	220	218	303	13.0%	\$721	\$659	\$731	\$756	\$943	\$967	\$973	\$912	3.9	5.6	\$103	\$71
TMAC Resources	TMR	52	123	195	232	64.8%	\$1,288	\$836	\$639	\$521	\$1,895	\$1,385	\$937	\$752	3.6	4.9	\$163	\$120
Torex Gold	TXG	249	348	411	419	19.0%	\$709	\$665	\$659	\$624	\$989	\$1,009	\$879	\$867	3.1	4.0	\$310	\$238
<b>Global</b>						<b>14.4%</b>	<b>\$669</b>	<b>\$723</b>	<b>\$683</b>	<b>\$661</b>	<b>\$913</b>	<b>\$982</b>	<b>\$929</b>	<b>\$888</b>			<b>\$195</b>	<b>\$100</b>
<b>North American</b>						<b>17.9%</b>	<b>\$708</b>	<b>\$702</b>	<b>\$678</b>	<b>\$655</b>	<b>\$993</b>	<b>\$1,001</b>	<b>\$947</b>	<b>\$897</b>			<b>\$143</b>	<b>\$98</b>

Price Assumptions: Gold: 2018 = \$1,275; 2019+ = \$1,300; Silver: 2018 = \$16.02; 2019+ = \$16.50

Priced as of market close November 21 2018.

Continued...



Royalty Companies

Company	Tick	Price Curr	Report Curr	Analyst	Rating	Price	Target (12m)	Implied Rt. to Target	Performance		52 Wk Low	52 Wk High	NAV	P/NAV	Shares (MM)	Mkt Cap (US\$M)	EV (1) (US\$M)
Franco-Nevada	FNV	CAD	USD	SW	O	C\$93.00	C\$115.00	25%	15%	(7%)	C\$76.53	C\$110.18	C\$41.13	2.26x	186	\$13,256	\$12,907
Osisko Gold Royalties	OR	CAD	CAD	DR	O	C\$10.30	C\$16.00	57%	5%	(29%)	C\$9.27	C\$15.53	C\$7.37	1.40x	156	\$1,233	\$1,122
Royal Gold	RGLD	USD	USD	SW	O	\$75.73	\$105.00	40%	(2%)	(8%)	\$71.91	\$98.53	\$33.51	2.26x	65	\$4,937	\$5,169
Sandstorm Gold	SSL	CAD	USD	DR	O - Spec	C\$5.46	C\$7.50	37%	14%	(13%)	C\$4.60	C\$6.95	C\$3.75	1.46x	183	\$764	\$683
Wheaton Precious Metals	WPM	USD	USD	DR	O	\$16.30	\$24.00	49%	(7%)	(26%)	\$15.08	\$22.86	\$10.59	1.54x	444	\$7,237	\$8,254
<b>Global</b>								<b>42%</b>	<b>5%</b>	<b>(17%)</b>				<b>1.78x</b>		<b>\$27,427</b>	<b>\$28,135</b>

Company	Tick	CFPS				P/CF				AdjCFPS (after sustaining capital)				EV/AdjCF			
		17A	18E	19E	20E	17A	18E	19E	20E	17A	18E	19E	20E	17A	18E	19E	20E
Franco-Nevada	FNV	\$2.63	\$2.62	\$3.20	\$3.56	27.1x	27.2x	22.2x	20.0x	\$2.61	\$2.63	\$3.22	\$3.54	26.6x	26.3x	21.6x	19.6x
Osisko Gold Royalties	OR	C\$0.38	C\$0.54	C\$0.61	C\$0.73	26.8x	19.0x	16.8x	14.1x	C\$0.37	C\$0.58	C\$0.62	C\$0.73	25.6x	16.2x	15.2x	12.8x
Royal Gold	RGLD	\$4.15	\$4.19	\$4.34	\$5.06	18.2x	18.1x	17.5x	15.0x	\$4.40	\$4.86	\$4.60	\$5.09	18.0x	16.3x	17.2x	15.6x
Sandstorm Gold	SSL	\$0.25	\$0.25	\$0.31	\$0.30	16.5x	17.0x	13.5x	14.1x	\$0.26	\$0.25	\$0.31	\$0.30	14.3x	15.0x	12.0x	12.6x
Wheaton Precious Metals	WPM	\$1.23	\$1.11	\$1.18	\$1.25	13.2x	14.6x	13.8x	13.0x	\$1.29	\$1.18	\$1.25	\$1.30	14.4x	15.8x	14.8x	14.3x
<b>Global</b>						<b>20.4x</b>	<b>19.2x</b>	<b>16.8x</b>	<b>15.2x</b>					<b>19.8x</b>	<b>17.9x</b>	<b>16.2x</b>	<b>15.0x</b>

Company	Tick	EV/EBITDA				P/E				Free CF Yield (3)				/sh	Dividend Yield	Payout	ROE '19E
		17A	18E	19E	20E	17A	18E	19E	20E	17A	18E	19E	20E				
Franco-Nevada	FNV	25.4x	24.7x	19.7x	17.7x	>50x	>50x	43.9x	39.6x	0.0%	-3.6%	3.7%	4.3%	\$0.96	1.3%	59%	6%
Osisko Gold Royalties	OR	22.4x	14.3x	13.8x	11.9x	>50x	>50x	46.4x	35.3x	-49.6%	7.5%	3.9%	7.1%	C\$0.20	1.9%	90%	2%
Royal Gold	RGLD	16.9x	15.7x	16.3x	15.2x	49.9x	43.0x	44.8x	31.4x	1.3%	6.4%	5.4%	6.7%	\$1.00	1.3%	59%	5%
Sandstorm Gold	SSL	16.4x	15.1x	12.3x	13.4x	>50x	>50x	>50x	>50x	4.9%	-0.4%	5.1%	4.6%	\$0.00	0.0%	n.m.	3%
Wheaton Precious Metals	WPM	14.6x	16.0x	14.9x	14.3x	26.0x	32.5x	32.4x	29.8x	7.4%	-5.6%	7.2%	7.7%	\$0.36	2.2%	72%	4%
<b>Global</b>		<b>19.1x</b>	<b>17.2x</b>	<b>15.4x</b>	<b>14.5x</b>	<b>38.0x</b>	<b>37.8x</b>	<b>41.9x</b>	<b>34.0x</b>	<b>-7.2%</b>	<b>0.9%</b>	<b>5.1%</b>	<b>6.1%</b>		<b>1.4%</b>	<b>70%</b>	<b>4%</b>

Company	Tick	Gold Equivalent Production (Koz)				3yr CAGR	Cash Costs (\$/oz AuE)				All-in Sustaining Costs (\$/oz AuE)				Reserve (P&P) (4)	Resource (M&I) (4)	EV/Rsrv	EV/Rsrc
		17A	18E	19E	20E		17A	18E	19E	20E	17A	18E	19E	20E				
Franco-Nevada	FNV	499	454	515	566	4.2%	\$284	\$255	\$257	\$268	\$331	\$302	\$294	\$302	n.a.	n.a.	n.m.	n.m.
Osisko Gold Royalties	OR	59	81	84	99	18.8%	\$95	\$134	\$129	\$127	\$643	\$358	\$360	\$316	n.a.	n.a.	n.m.	n.m.
Royal Gold	RGLD	352	354	361	362	1.0%	\$249	\$237	\$245	\$260	\$377	\$368	\$370	\$373	n.a.	n.a.	n.m.	n.m.
Sandstorm Gold	SSL	55	57	65	60	2.9%	\$280	\$264	\$264	\$242	\$487	\$460	\$447	\$444	n.a.	n.a.	n.m.	n.m.
Wheaton Precious Metals	WPM	744	690	708	746	0.1%	\$363	\$358	\$369	\$373	\$415	\$416	\$423	\$425	18.6	32.7	\$444	\$252
<b>Global</b>						<b>5.4%</b>	<b>\$254</b>	<b>\$249</b>	<b>\$253</b>	<b>\$254</b>	<b>\$451</b>	<b>\$381</b>	<b>\$379</b>	<b>\$372</b>				

Price Assumptions: Gold: 2018 = \$1,275; 2019+ = \$1,300; Silver: 2018 = \$16.02; 2019+ = \$16.50

Priced as of market close November 21 2018.

Continued...



Emerging Gold Producers

Company	Tick	Price Curr	Report Curr	Analyst	Rating	Price	Target (12m)	Implied Rt. to Target	Performance		52 Wk Low	52 Wk High	NAV	P/NAV	Shares (MM)	Mkt Cap (US\$M)	EV (1) (US\$M)
									QTD	YTD							
Continental Gold	CNL	CAD	USD	DR	O - Spec	C\$2.09	C\$4.50	115%	(21%)	(38%)	C\$1.98	C\$4.13	C\$5.50	0.38x	220	\$352	\$487
Dacian Gold Ltd	DCN	AUD	AUD	PH	O	A\$2.25	A\$3.25	44%	1%	(20%)	A\$2.10	A\$3.20	A\$2.90	0.78x	221	\$358	\$355
Gold Road Resources	GOR	AUD	AUD	PH	O	A\$0.64	A\$0.80	26%	(7%)	(9%)	A\$0.60	A\$0.85	A\$0.74	0.86x	877	\$402	\$347
Liberty Gold	LGD	CAD	USD	MM	O - Spec	C\$0.33	C\$0.70	112%	(12%)	(25%)	C\$0.30	C\$0.50	C\$0.70	0.47x	185	\$47	\$42
Marathon Gold	MOZ	CAD	CAD	MM	O - Spec	C\$0.70	C\$1.80	157%	(17%)	(39%)	C\$0.65	C\$1.28	C\$1.85	0.38x	151	\$81	\$78
Midas Gold Corp.	MAX	CAD	USD	SW	SP - Spec	C\$0.65	C\$1.25	92%	(29%)	10%	C\$0.55	C\$1.21	C\$1.23	0.53x	187	\$93	\$93
NovaGold	NG	CAD	USD	SW	SP - Spec	C\$5.17	C\$7.50	45%	8%	5%	C\$4.33	C\$6.47	C\$7.46	0.69x	322	\$1,277	\$1,211
Osisako Mining	OSK	CAD	CAD	DR	O - Spec	C\$2.50	C\$4.50	80%	6%	(26%)	C\$1.60	C\$3.86	C\$4.25	0.59x	240	\$459	\$412
Sabina Gold & Silver	SBB	CAD	CAD	MM	SP - Spec	C\$1.47	C\$2.25	53%	23%	(35%)	C\$1.11	C\$2.62	C\$2.16	0.68x	303	\$341	\$292
SilverCrest	SIL	CAD	CAD	MM	O - Spec	C\$3.24	C\$5.00	54%	3%	81%	C\$1.12	C\$3.80	C\$4.76	0.68x	76	\$188	\$177
<b>Global</b>								<b>78%</b>	<b>(4%)</b>	<b>(10%)</b>			<b>0.60x</b>		<b>\$3,599</b>	<b>\$3,494</b>	

Company	Tick	Production (Koz)				3yr CAGR	Cash Cost (\$/oz)				All-in Sustaining Costs (\$/oz)				Reserve (P&P) (4)	Resource (M&I) (4)	EV/Rsrv	EV/Rsrc
		17A	18E	19E	20E		17A	18E	19E	20E	17A	18E	19E	20E				
Continental Gold	CNL	-	-	-	132	-	n.m.	n.m.	n.m.	\$600	n.m.	n.m.	n.m.	\$870	3.7	4.5	\$131	\$109
Dacian Gold Ltd	DCN	-	101	220	200	-	n.m.	\$957	\$582	\$635	n.m.	\$1,054	\$701	\$755	1.2	2.4	\$295	\$147
Gold Road Resources	GOR	-	-	10	124	-	n.m.	n.m.	\$3,137	\$720	n.m.	n.m.	\$3,281	\$744	1.8	2.4	\$197	\$144
Liberty Gold	LGD	-	-	-	-	-	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	-	2.2	n.m.	\$19
Marathon Gold	MOZ	-	-	-	-	-	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	-	2.7	n.m.	\$29
Midas Gold Corp.	MAX	-	-	-	-	-	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	4.6	5.6	\$20	\$17
NovaGold	NG	-	-	-	-	-	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	16.9	19.5	\$72	\$62
Osisako Mining	OSK	-	-	-	-	-	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	-	3.7	n.m.	\$110
Sabina Gold & Silver	SBB	-	-	-	-	-	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	2.5	5.3	\$117	\$55
SilverCrest	SIL	-	-	-	-	-	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	-	-	n.m.	n.m.
<b>Global</b>						<b>n.m.</b>	<b>n.m.</b>	<b>\$957</b>	<b>\$1,859</b>	<b>\$651</b>	<b>n.m.</b>	<b>\$1,054</b>	<b>\$1,991</b>	<b>\$790</b>			<b>\$139</b>	<b>\$77</b>

Price Assumptions: Gold: 2018 = \$1,275; 2019+ = \$1,300; Silver: 2018 = \$16.02; 2019+ = \$16.50

Priced as of market close November 21 2018.

Continued...



Silver Producers

Company	Tick	Price Curr	Report Curr	Analyst	Rating	Price	Target (12m)	Rt. to Target	Performance		52 Wk Low	52 Wk High	NAV	P/NAV	Shares (MM)	Mkt Cap (US\$M)	EV (1) (US\$M)
									QTD	YTD							
Coeur Mining	CDE	USD	USD	MM	O	\$4.35	\$8.00	84%	(18%)	(42%)	\$4.08	\$8.94	\$5.01	0.87x	202	\$880	\$1,287
Fresnillo	FRES	GBP	USD	JB	TP	£9.25	£13.00	42%	13%	(35%)	£7.56	£14.61	£7.16	1.29x	737	\$8,763	\$8,543
Hecla Mining	HL	USD	USD	MM	SP	\$2.59	\$3.25	26%	(7%)	(35%)	\$2.17	\$4.63	\$2.50	1.03x	477	\$1,234	\$1,896
Hochschild Mining	HOC	GBP	USD	TB	SP	£1.64	£2.55	57%	(0%)	(38%)	£1.47	£2.67	£1.65	0.99x	507	\$1,067	\$1,067
Pan American Silver**	PAAS	USD	USD	MM	SP	\$13.76	\$17.00	25%	(7%)	(12%)	\$12.12	\$18.75	\$13.67	1.01x	153	\$2,110	\$2,214
<b>Global</b>								<b>47%</b>	<b>(4%)</b>	<b>(32%)</b>				<b>1.04x</b>		<b>\$14,053</b>	<b>\$15,007</b>

Company	Tick	CFPS				P/CF				AdjCFPS (after sustaining capital)				EV/AdjCF			
		17A	18E	19E	20E	17A	18E	19E	20E	17A	18E	19E	20E	17A	18E	19E	20E
Coeur Mining	CDE	\$0.84	\$0.63	\$0.95	\$1.11	5.2x	6.9x	4.6x	3.9x	\$0.67	\$0.36	\$0.66	\$0.86	9.5x	17.5x	9.6x	7.4x
Fresnillo	FRES	\$1.04	\$1.15	\$1.28	\$1.35	11.5x	10.3x	9.3x	8.8x	\$1.00	\$0.86	\$1.02	\$1.07	11.6x	13.5x	11.3x	10.8x
Hecla Mining	HL	\$0.39	\$0.23	\$0.43	\$0.59	6.7x	11.5x	6.0x	4.4x	\$0.28	\$0.07	\$0.25	\$0.38	14.0x	>50x	15.7x	10.4x
Hochschild Mining	HOC	\$0.47	\$0.44	\$0.48	\$0.47	4.5x	4.7x	4.3x	4.5x	\$0.29	\$0.25	\$0.26	\$0.25	7.4x	8.4x	8.0x	8.5x
Pan American Silver**	PAAS	\$1.39	\$1.30	\$2.09	\$2.29	9.9x	10.6x	6.6x	6.0x	\$0.83	\$0.63	\$1.19	\$1.49	17.3x	22.9x	12.2x	9.7x
<b>Global</b>						<b>7.6x</b>	<b>8.8x</b>	<b>6.2x</b>	<b>5.5x</b>					<b>12.0x</b>	<b>15.6x</b>	<b>11.4x</b>	<b>9.4x</b>

Company	Tick	EV/EBITDA				P/E				Free CF Yield (3)				Dividend	Payout	ROE
		17A	18E	19E	20E	17A	18E	19E	20E	17A	18E	19E	20E	/sh	Yield	'19E
Coeur Mining	CDE	6.2x	7.6x	5.5x	4.8x	n.m.	n.m.	n.m.	>50x	2.1%	-4.1%	9.3%	10.0%	\$0.00	-	n.m.
Fresnillo	FRES	8.1x	7.9x	7.3x	6.9x	15.6x	21.6x	20.5x	20.2x	4.8%	1.4%	2.6%	4.9%	\$0.23	1.9%	39%
Hecla Mining	HL	9.2x	11.0x	7.1x	5.9x	28.8x	n.m.	23.5x	16.8x	2.5%	-1.4%	6.2%	11.7%	\$0.01	0.4%	9%
Hochschild Mining	HOC	3.5x	3.9x	3.6x	3.7x	26.0x	26.5x	18.6x	19.2x	10.6%	9.4%	11.3%	11.1%	\$0.02	0.9%	17%
Pan American Silver**	PAAS	8.4x	8.5x	4.8x	3.9x	28.6x	29.5x	30.9x	21.8x	3.1%	2.7%	5.5%	10.2%	\$0.14	1.0%	31%
<b>Global</b>		<b>7.1x</b>	<b>7.8x</b>	<b>5.6x</b>	<b>5.0x</b>	<b>24.8x</b>	<b>25.9x</b>	<b>23.4x</b>	<b>19.5x</b>	<b>4.6%</b>	<b>1.6%</b>	<b>7.0%</b>	<b>9.6%</b>		<b>0.8%</b>	<b>24%</b>

Company	Tick	Production (Moz)				3yr CAGR	Cash Cost (\$/oz)				All-in Sustaining Costs (\$/oz)				Reserve (P&P) (4)	Resource (M&I) (4)	EV/Rsrv	EV/Rsrc
		17A	18E	19E	20E		17A	18E	19E	20E	17A	18E	19E	20E				
Coeur Mining	CDE	16.4	13.0	14.2	14.7	-3.6%	\$7.0	\$2.8	\$2.6	\$2.0	\$12.9	\$10.6	\$9.5	\$7.9	165	411	\$7.82	\$3.13
Fresnillo	FRES	58.7	62.0	64.3	70.3	6.2%	\$4.9	\$5.3	\$6.6	\$6.8	\$9.9	\$10.5	\$11.2	\$11.3	1,380	2,889	\$6.19	\$2.96
Hecla Mining	HL	12.5	10.3	10.6	13.3	2.2%	(\$0.0)	\$0.5	(\$0.1)	\$0.5	\$7.9	\$11.4	\$11.8	\$10.9	178	311	\$10.63	\$6.09
Hochschild Mining	HOC	19.1	19.6	21.1	20.0	1.6%	\$9.5	\$8.1	\$7.6	\$7.7	\$12.4	\$12.7	\$12.8	\$12.9	127	1,212	\$8.37	\$0.88
Pan American Silver**	PAAS	25.0	25.4	28.5	34.2	11.1%	\$5.0	\$3.4	\$5.1	\$5.3	\$10.3	\$9.2	\$10.6	\$9.7	576	1,377	\$3.85	\$1.61
<b>Global</b>						<b>3.5%</b>	<b>\$5.3</b>	<b>\$4.0</b>	<b>\$4.4</b>	<b>\$4.5</b>	<b>\$10.7</b>	<b>\$10.9</b>	<b>\$11.2</b>	<b>\$10.5</b>			<b>\$7.37</b>	<b>\$2.93</b>

Price Assumptions: Gold: 2018 = \$1,275; 2019+ = \$1,300; Silver: 2018 = \$16.02; 2019+ = \$16.50

Priced as of market close November 21 2018.

Footnotes:

Source: Company Reports, RBCCM Estimates

TP - Top Pick; O - Outperform; SP - Sector Perform; U - Underperform; R - Restricted

Spec - Speculative Risk

DR - Dan Rollins; JB - James Bell; MM - Mark Mihaljevic; PH - Paul Hissey; SW - Stephen Walker

(1) Enterprise Value (EV) calculated as market cap plus debt, reclamation and employee obligations less cash, investments, and working capital

(2) CFPS and FCF for Barrick, Goldcorp and Newmont shown on an adjusted attributable basis.

(3) Free Cash Flow is calculated as: Operating Cash Flow - Capex

(4) Reserves and Resources in gold only for gold companies, in silver only for silver companies

\* Production of June year-end companies has been converted to December year-end for comparison purposes.

\*\*PAAS shown pro-forma THO merger

Please note that we do not include Diamond names in our comp tables.

Price Assumptions:

Gold: 2018 = \$1,275; 2019+ = \$1,300

Silver: 2018 = \$16.02; 2019+ = \$16.50

Platinum: 2018 = \$879; 2019 = \$875; 2020 = \$950; 2021 = \$1,050; 2022 = \$1,050; 2023+ = \$1,050

Palladium: 2018 = \$979; 2019 = \$1,000; 2020 = \$975; 2021 = \$950; 2022 = \$950; 2023+ = \$950

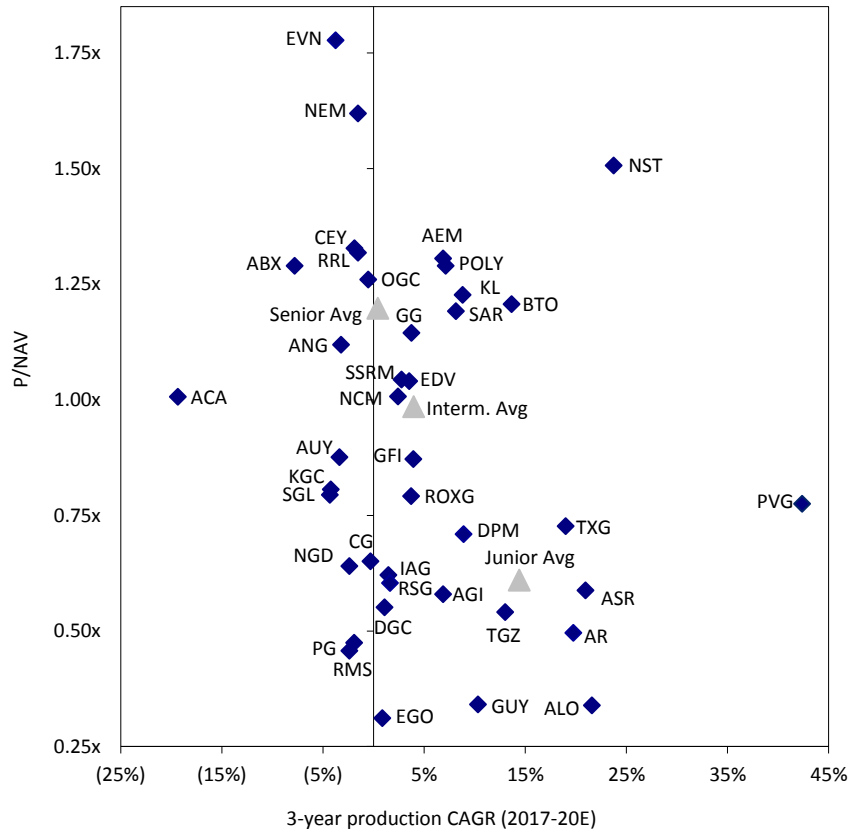
Copper: 2018 = \$2.89; 2019 = \$2.75; 2020 = \$3.25; 2021 = \$3.50; 2022 = \$3.50; 2023+ (in 2018 US\$) = \$3.00

Lead: 2018 = \$1.03; 2019 = \$1.10; 2020 = \$1.10; 2021 = \$1.10; 2022 = \$1.10; 2023+ (in 2018 US\$) = \$0.85

Zinc: 2018 = \$1.33; 2019 = \$1.30; 2020 = \$1.30; 2021 = \$1.25; 2022 = \$1.25; 2023+ (in 2018 US\$) = \$1.00

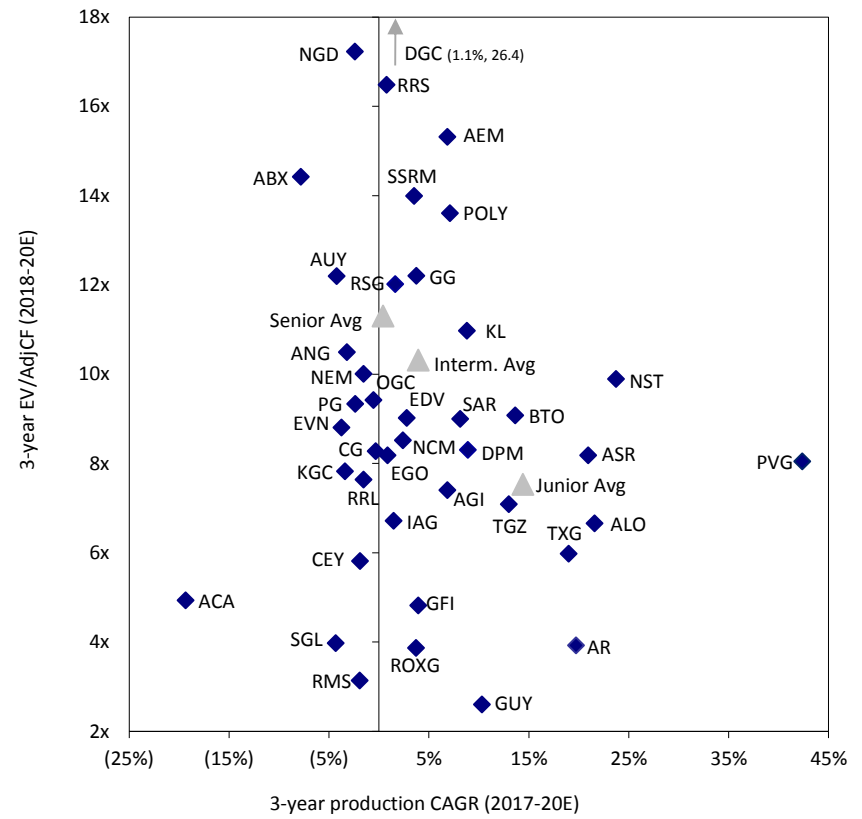


Exhibit 6: 3-year production growth versus P/NAV



Source: RBC Capital Markets estimates

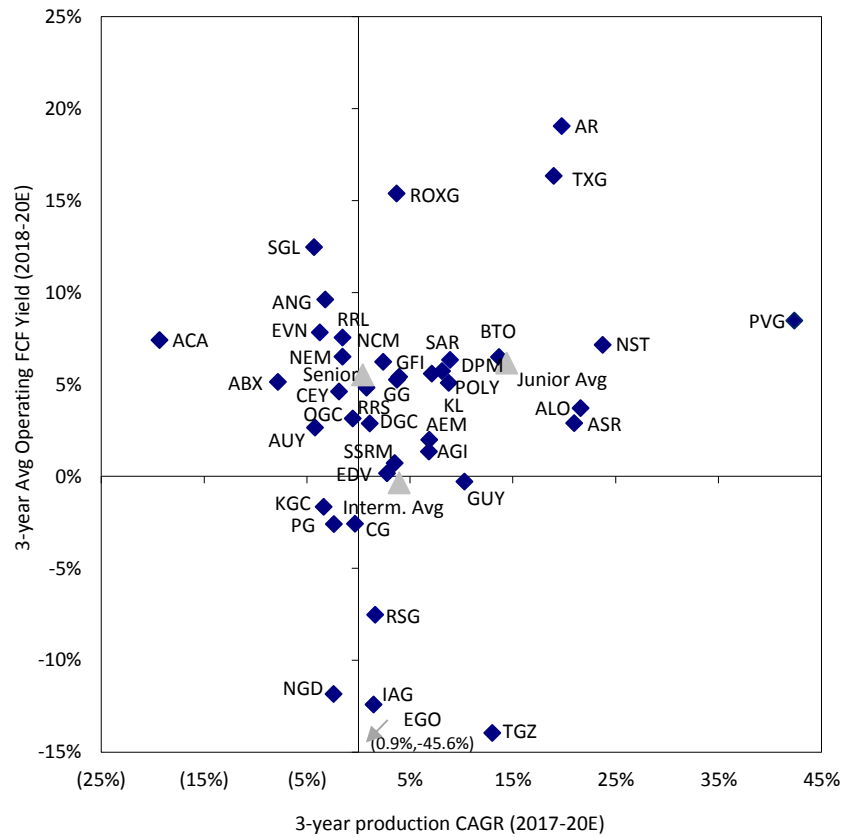
Exhibit 7: 3-year production growth versus 3-year EV/AdjCF



Source: RBC Capital Markets estimates

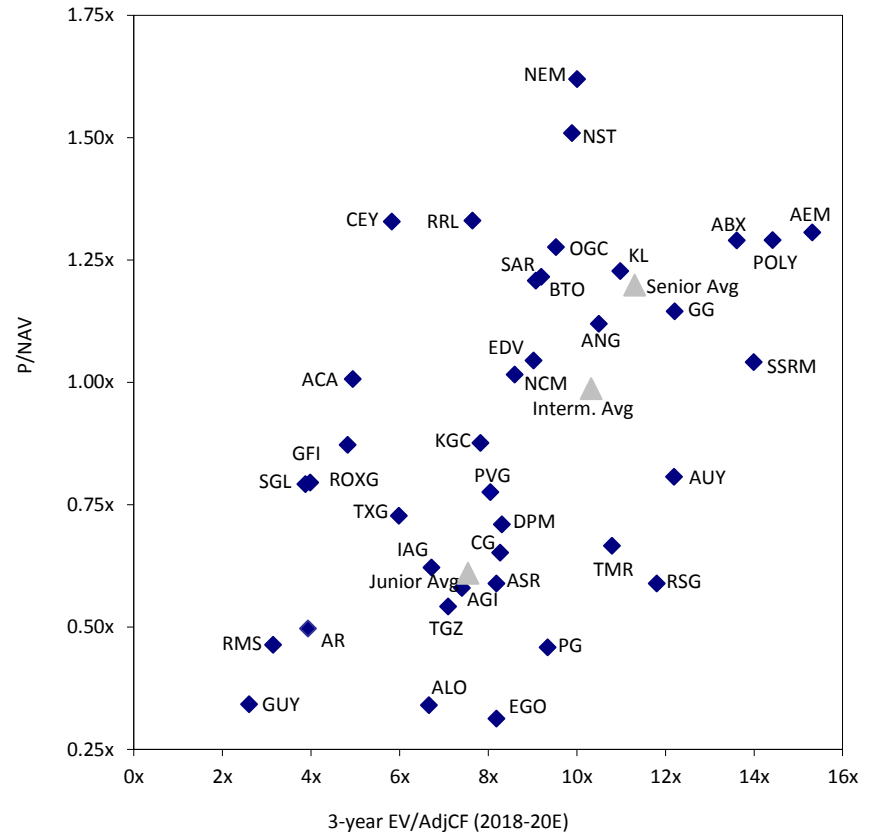


Exhibit 8: 3-year production growth versus 3-year FCF yield



Source: RBC Capital Markets estimates

Exhibit 9: 3-year EV/AdjCF versus P/NAV



Source: RBC Capital Markets estimates





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			Count	Percent
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