APRIL 23, 2016

MINING: GOLD COMPANY

GOLDCORP

GG/NYSE

Goldcorp: Stability and financial caution to create value.

KEY THEMES

Recommendation: **HOLD**

Based on the valuation done for the company from its financial situation, economic and industrial expectancies, we estimate a price per share of **$ 15.51**, which implies a downside of 10% compared to April 23rd price of $17.08.

- The Gold companies are focusing on the sustainability through the reduction of all in sustained costs, which can be easily achieved through the exchange rate differences. The 2016 cost is expected to decrease in a 1.4% and in the long run to achieve a cost of $822/oz., which is translated in a YoY decrease of 1.6%.

As a commodity company, the driver for revenue will continue to be the gold price; we project an increase on the gold price from 2016-2020 of 4% YoY growth, which will impact directly on 92% of the Goldcorp´s revenue.

Gold production is projected to decrease in the next 2 years (2016-2017), but due to the opening of operation of two projects the production will have an up rise of 2.7% that will continue to increase by 2.5% in the next 2 years (2019-2020).

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CONTENT

PERFORMANCE

"**Please see the disclaimer at back of this report for important information.**"

COMPANY OVERVIEW

Goldcorp Inc	GG/NYSE
Sector:	Minerals And Metals
Recomendation:	Buy
Price:	$17.57
Gold Price	$1,249.15
Location:	Park Place Suite 3400-666 Burrard Street Vancouver, B.C. Canada V6C 2X8
Sector:	Minerals And Metals
Sub-Sector:	Gold Mining
Economic Activity:	Goldcorp Inc. engages in the acquisition, exploration, development, and operation of precious metal properties in Canada, the United States, Mexico, and Central and South America.
Employees:	15,836
Web page:	www.goldcorp.com

Table 1. Goldcorp key financial statistics

Key Statistics			
Range 52 weeks	$9.46 – $20.30	Shares Outstanding	830 M
Return 12 month	-1.24%	Market capitalization	14.58 B
Dividends	0.08	Enterprise value:	16.51 B
Avg Vol (3 m)	11,838,100	Beta	-0.342

Source: Bloomberg, Yahoo Finance

STRATEGY

Goldcorp (GG) developed a very clear financial strategy regarding the use of its cash and has maintained its strategy for the last 5 years at least.

A key part of the company strategy is to use its own cash flow to fund its own projects, without using debt. Production and investments decisions are made based on generating the appropriate risk-adjusted rates of return and free cash flow although we must always have clear that free cash flow remains very dependable on the market gold price. With this, and with the forecast on the gold price per ounce, we are forecasting total sales to be steady during the following 5 years with a slight decrease (-0.4%).

Although CAPEX increased from 2011 to 2014 by 22% to over 2.2 billion, it decreased by half in 2015 and we are projecting a continuous reduction through 2020. This is based on specifically Peñasquito project which is coming into production in 2018 with over 7 million ounces of proved reserves.

Table 2. CAPEX, production and sales estimations

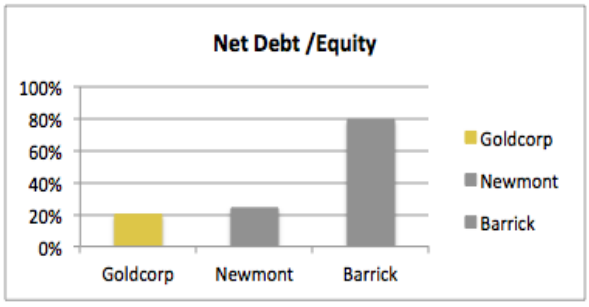
	CAPEX	Production (Millions Oz)	Sales (Millions Oz)	Revenue (millions USD)
2011	- 1,808	2.5	2.49	3,897
2012	- 2,544	2.4	2.34	3,920
2013	- 2,176	2.7	2.59	3,112
2014	- 2,217	2.9	2.67	3,162
2015	- 1,178	3.5	3.59	4,054
2016 E	- 1,123	3.0	2.92	3,679
2017 E	- 1,071	2.8	2.73	3,444
2018 E	- 1,017	2.9	2.80	3,750
2019 E	- 957	3.0	2.91	3,837
2020 E	- 901	3.0	2.99	3,930

Source: Author estimates

- Flexibility for M&A strategy: Goldcorp balance sheet still provides flexibility for a select merger and acquisition strategy and usually go for strategic acquisitions. Mergers and strategic acquisitions also provide synergy, through this, the company tries to cut costs or increase production and free cash flow.
- Regular dividend grow: Goldcorp also has a strong history of returning value to its shareholders, this differentiates it from other gold producers. It pays a monthly dividend to its shareholders. Even in the face of low prices, it maintained its dividends. Other gold producers haven't been able to maintain their dividends. Barrick Gold (ABX) and Agnico Eagle Mines (AEM) reduced their dividends. Iamgold (IAG) stopped its dividends. Meanwhile, Goldcorp's dividends grew 233% in the past four years. It had a dividend yield of ~3.1%. This is healthy for a volatile sector like gold mining.

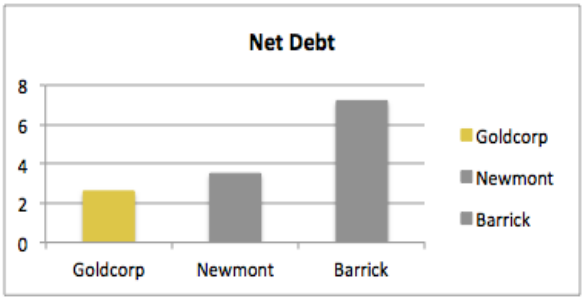
Although every gold miner talks about only doing merger and acquisition (or M&A) strategies that are in shareholders' best interests, Goldcorp (GG) recent years mine acquisitions seems to be in agreement to its strategy. This protected Goldcorp's ability to generate cash flows—even in a low commodity price environment and prevented Goldcorp of acquiring debt. Therefore, we are not forecasting any noticeable increase on debt or any important changes on the capital structure in the short to mid-term. (WACC on DCF Analysis)

Graph 1. Net Debt / Equity



Source: Author Estimates with reported financial information

Graph 2. Net Debt



Source: Author Estimates with reported financial information

Cautious M&A strategy

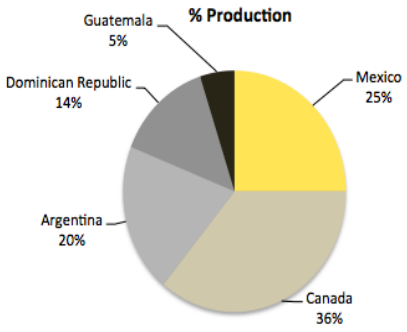
Goldcorp has a very prudent merger, acquisition, and divestiture strategy. An example of a company with an opposite culture is Barrick Gold's (ABX) purchase of Equinox Minerals in 2011, this caused a substantial write down of ~$8.70 billion for Barrick in 2013—compared to $1.96 million for Goldcorp. At his point, we are not projecting any mergers or acquisitions that could change the valuation.

This has helped Goldcorp keep its debt within reasonable limits—compared to its senior peers. This was a strong assumption when doing the DCF valuation, since we use the hypothesis that this will not change in the future.

Low political risk

Goldcorp's asset portfolio is located in politically stable, low-risk jurisdictions in the Americas. This is one of Goldcorp's key advantages. Many gold miners—including Barrick Gold (ABX) and others—are facing political instability and taxation issues.

Graph 3. Goldcorp production geographical allocation

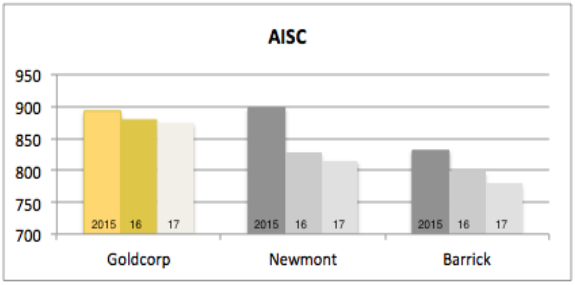


Source: Goldcorp financial reports

Cost reduction

A key part of the financial and operational strategy of Goldcorp and the rest of the gold mining companies for the following years is the reduction of costs across their mines. The volatility and drop of the gold price in the last 2 years have forced major mining companies to focus on reducing costs and emphasize their operations on low cost mines. Actions within the company have been taken to reduce costs such as closer of high cost mines. As the following table and chart shows, we believe that although Goldcorp has had moderate success to reduce costs, it is part of our projections that AISC will have a moderate decrease for the following 5 years. This projection comes from the AISC data available for the mines that will be operational in the following years and from an author estimate accounting for the mines been closed.

Graph 4. AISC for Goldcorp and gold mining peers



Source: Author estimates with reported financial information

Table 3. Historic and AISC future projections

	AISC ($/oz)
2011	-
2012	874
2013	1,031
2014	949
2015	893
2016 E	880
2017 E	874
2018 E	871
2019 E	842
2020 E	822

Source: Author estimates with Goldcorp financial reports and project´s information available

Table 4. AISC for current and projected mines

MINE	COUNTRY	OWNERSHIP	RESERVE PROVEN	GOLD 2015	AISC 2015	STATUS
Alumbrera	Argentina	37.5%	120,000	25,800	1,274	Operation
Borden	Canada	100.0%				Project
Camino Rojo	México	100.0%	-			Project
Cerro Blanco	Guatemala	100.0%	-			Project
Cerro Negro	Argentina	100.0%	1,710,000	147,800	872	Operation
Cochenour	Canada	100.0%	-			Project
El Morro	Chile	50.0%	2,910,000			Project
Éléonore	Canada	100.0%	870,000	105,100	761	Operation
Los Filos	México	100.0%	600,000	74,400	1,862	Operation
Marlin	Guatemala	100.0%	110,000	40,900	787	Project
Musselwhite	Canada	100.0%	670,000	81,200	699	Operation/Expansión
Noche Buena	México	100.0%	-			Project
Peñasquito Heap Le	México	100.0%	240,000	169,900	687	Operation
Peñasquito Mill	México	100.0%	7,480,000			Project
Porcupine	Canada	100.0%	690,000	74,900	1,031	Project
Pueblo Viejo	Dominican Republic	40.0%	3,530,000	89,500	608	Operation
Red Lake	Canada	100.0%	510,000	99,900	959	Operation
San Nicolas	México	21.0%	-			Project
TOTAL			**19,440,000**	909,400	**894**	

Source: Goldcorp disclosed financial information

The performance and valuation of a company such as Goldcorp is greatly correlated to the commodity price it mines, therefore if we want to perform a worthy valuation we must estimate the gold price for the following years. As we will elaborate on the valuation section, we include the following 2 sections as an overview of the research we made to come with fair estimated of the demand and supply of gold, and then forecast the gold price. We also include the demand and supply overview to identify and remark trends, or factors that could impact our Goldcorp valuation, for instance, identifying any chance on the market share, etc.

DEMAND

The drop on the price, especially in US currency, showed throughout 2015 encouraged the market demand for gold during the last semester of the year. There was a global increase for more

affordable gold jewelry, bars and coins. Demand on Q4 2015 did not match the demand observed during Q3 2015 but it was still certainly strong and marginally weaker by 1% than the demand on 2014. Jewelry demand was weaker among most of the markets, but Indian festivities helped to leverage the overall result. For the following 5 years we are expecting the jewelry demand on India to remain stable in a yearly basis, we are projecting a marginal grow of 0.5% to 1%, (Parameter J).

Demand was highly boosted by major emerging markets such as India and China. Total Indian demand for jewelry, bars and coins grew almost 6% during 2015 Q4 against same period of time in 2014. We must remark that Q4 is traditionally a very strong quarter given the festival and wedding season in this country, jewelry demand reached 654.3 tons, meaning a 5% rise. After our industry analysis we found no reason to think that this trend will change within the following 5 years, we still expect to India and China to drive global demand (Parameter J).

Demand for gold jewelry in Europe showed consistent results, with rises held in the UK and Spain, 1% and 6% respectively, demand in France fell by 5%, Germany 2% and Italy by 3%, (Parameter J).

The jewelry industry is a reflection of the overall slowdown of the economy and lack of trust in a prompt recovery. Therefore, given the estimation by the World Bank[1] of a global GDP growth of 2.5% for the following 5 years, we expect the jewelry demand to remain stable in the mid-term.

Demand for gold by central banks intensified in the second half of 2015 and it is expected to grow 2% in 2016 due to the economic and political risks, which remain high (plunging oil prices, political unrest in the Middle East and China's economic slowdown).
With this scenario, financial institutions continued to recognize the need for diversification of their reserve asset portfolios. The 2% increase for 2016 is not expected to continue throughout the following years, we expect a zero to marginal increase through 2020, (Parameter Net Investors).

The People's Bank of China, now the world's biggest gold buyer, increased its gold reserves by over 600,000 troy ounces to 56.66 million fine troy ounces by the end of December. China has been selling foreign reserves and buying gold in order to make their currency more tradable. The forecast for 2016 is to continue purchasing gold in a much similar amount as 2015, 17.9 tons per month which total 215 tons by the end of the year[2]. China's projected to buy 5% more gold for jewelry, 15% for coins and 18% for bar investment in 2016[3]. (Parameter Net Investors).

Even though the big picture for consumer demand is relatively positive, individual market, such as Turkey, Russia and the Middle East are struggling. The economic and socio-political troubles affecting these countries have an effect on gold demand also in the foreseeable future. Political scene will likely continue to be problematic in those countries, there are no signs that Russia will have a turn on his political views, therefore moderate isolation will continue to weakening of Russian ruble and with moderate economic affectation to its economy. Scenario for the Middle

1 Global Economic Prospect: Spillovers amid Weak Growth. World Bank.
2 World Gold Council gold demand trend report.
3 Credit Sussie, Investment outlook 2016

East will continue to remain unstable and the low oil prices will continue to affect the economy for this region.
Demand in the US market grew 3%, partially promoted from the drop in the gold price during Q3 2015. Jewelry consumers were helped by lower fuel prices and a strong employment rate; while improvement in economic indicators provided support, no major changes are visible for 2016 therefore the demand in the US will remain steady with little to none increases in the next 5 years.

Global investment demand increased 8% especially in the form of gold-backed ETFs, due to the growing conviction that gold could offer relief in an environment of growing uncertainty, such as:

- Financial market volatility, due to political unrest, divergent monetary policy measures and China's faltering economic progress.
- Geopolitical uncertainty, particularly with terrorist attacks in Europe and the Middle East.
- Lack of optimism in the US economic momentum

(Parameter Net Investors)

SUPPLY

The total gold supply in 2015 decreased by 4% to 4,258.3 tons, its lowest level since 2009, as mine production contracted as well as recycling. Mine production fell 2% during Q4, from 841.2t to 824.8t, first quarter decline since 2008. Annual production in 2016 is projected to increase by just 1%. For the following 5 years, we expect the total mining supply to continuously decrease.

Mining companies recently focus cost-cutting and this explains much of this lower output. Reduced exploration budgets and project development has led to lower production from existing mines as well as a reduced project pipeline. This, combined with longstanding issues such as lower ore grades in average, means constrained mines supply seems likely. It's clear that the mining industry faces a number of challenges in the future; gold production will likely see declines over the coming years.

Number of gold discoveries has fallen, according to Goldcorp Inc., in the early 1990s, more than 125 million ounces of gold were discovered. Now, this amount is below 25 million ounces. The production price to mine gold is a huge restriction. Gold prices are currently very close to miner's production prices. Therefore, gold mining companies have cut their gold exploration projects and budgets and even taking their high-cost producing mines out. This is putting a cap on the amount of gold produced. If this situation persists, the supply will continuously decrease.

Based on public information from exploration projects for the 3 main gold miners, our projection is for the deficit to continue in 2016 with a downfall of 13.6% from 2015 to 2020. This is in accordance to the expectations from Analysts at Credit Suisse that expect a continuous supply decrease through 2019 and 2020.[4]

[4] Credit Suisse Investment Outlook 2016

Specifically for Goldcorp, we are expecting the market share to remain steady for the following 5 years. The last 4 years production share increased from 7.4% during 2011 to 11.2% in 2015. We are expecting the gold production of Goldcorp to overall be stable, with slight increase during 2018 due to the Peñasquito project (7.4 probed reserves million ounces) coming into production. This will permit Goldcorp to keep its current production share.

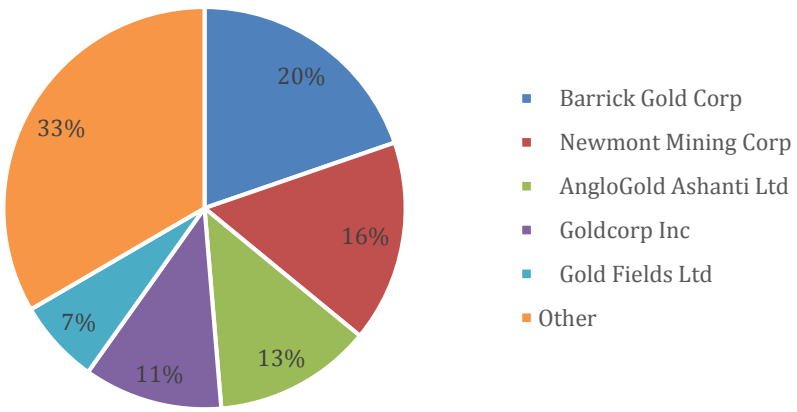
The following table illustrates the contribution from Goldcorp to the global gold mine production and our estimates based on the projects that will start production in the following years, we have considered only those with proved reserves.

Table 5. Goldcorp global gold production share

Year	Goldcorp Production	Global Production	%
2011	2.5	33.752	7.4%
2012	2.4	32.651	7.3%
2013	2.7	33.632	7.9%
2014	2.9	33.994	8.4%
2015	3.5	31.023	11.2%
2016 E	3.0	28.3	10.5%
2017 E	2.8	28.5	9.8%
2018 E	2.9	28	10.2%
2019 E	3.0	27.9	10.6%
2020 E	3.0	27.1	11.1%

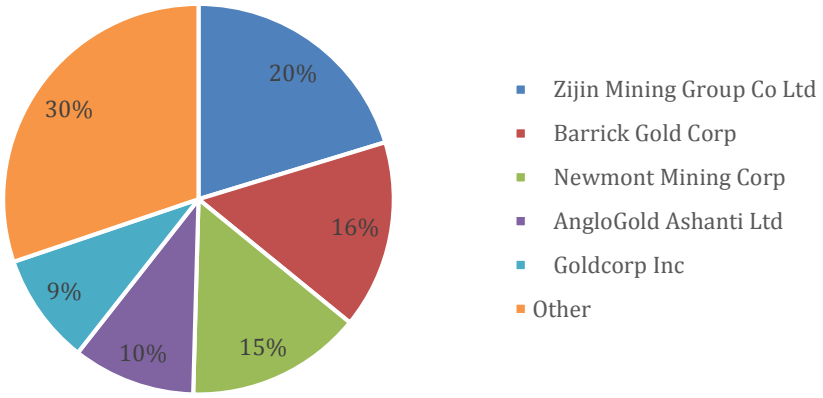
Source: Author estimates with Goldcorp financial information and Bloomberg

Graph 5. Larger gold miners market share



Source: Author Estimates with public gold production shares

Graph 6. Sales for major gold mining companies



Source: Author Estimates with Bloomberg information

Table 6. Major Goldcorp current mines in production

MINE	COUNTRY	OWNERSHIP	PRODUCTION 2015	PRODUCTION 2016
Cerro Negro	Argentina	100%	507,400	500,000
Éléonore	Canada	100%	268,100	265,000
Musselwhite	Canada	100%	270,300	250,000
Peñasquito Heap Leach	México	100%	860,300	550,000
Porcupine	Canada	100%	274,300	262,500
Pueblo Viejo	Dominican Republic	40%	381,700	420,000
Red Lake	Canada	100%	375,700	315,000
Other	-	21.0%	526,600	410,000
TOTAL			**3,464,400**	**2,972,500**

Source: Goldcorp financial reports

FINANCIAL HIGHLIGHTS

- The Company has budgeted approximately an additional $100 million in 2016 to bring these projects through their various study phases.
- An investment decision on PLP is expected by mid-2016, which, if approved, is expected to be in production by the end of 2018.
- Company-wide exploration expenditures in 2016 are expected to total approximately $135 million, of which approximately 50% is expected to be expense.
- Total cash costs on a by-product basis are expected to be between $500 and $575 per ounce while all-in sustaining costs are projected to be between $850 and $925 per ounce of gold.

- The effective tax rate on net income before share-based compensation is expected to be approximately 40% to 45% in 2016. Based on the different tax rates applied on the territories on which Goldcorp has mines, we used weighted average tax rate of 40%. (Tax rate on DCF Analysis)
- We are forecasting a decrease on CAPEX an average of 5.2% for the next 5 years due to projects starting operational stages. (CAPEX on DCF Analysis)
- We projected no noticeable changes on depreciation. (Depreciation on DCF Analysis)

VALUATION

Knowing that the main driver of future revenue will be the price of the mined commodities, it is crucial what expected price we use for each of these products. By looking at the financial results, we can easily notice that up to 92% of the revenue of Goldcorp during the last 10 years come from the sale of gold. Rest of the revenue are distributed among the rest of the mining products[5]:

Table 7. Minerals revenues contribution

Product	Revenue contribution
Silver	2.1%
Copper	2.2%
Lead	1.9%
Zinc	1.8%

Source: Goldcorp reported financial information

After analyzing the current projects and probed reserves that Goldcorp has, we assume no changes in the mid to long term to the previous revenue contribution data. Based on this fair assumption we consider appropriate to use the future prices of these minerals, and focus our efforts on estimating the price of gold.

Table 8. Minerals future prices

Product	2016	2017	2018	2019	2020	
Silver	17.265	17.46	17.648	17.864	18.188	USD/Oz
Copper	2.2655	2.283	2.2855	2.289	2.2925	USD/lb
Lead	1794	1797.5	1803.5	1833.5	1869.5	USD/tonne
Zinc	1925.5	1910.5	1871.5	1846.5	1836.5	USD/tonne

Source: Chicago Mercantile Exchange

Subsequently, we estimate the gold of price for the following 5 years until 2020. The estimation of the gold price was made using a system of simultaneous equations of demand and supply.

[5] Goldcorp financial reports

Variables description

Quantity: accounts for the physical volume of the market. Here is the total amount of gold supply or demand measured in millions of troy ounces. We must note that the supply equals to the demand Qs = Qd. For this, we made the fair assumption that all the produced gold from the mines is actually bought.

Price of gold: calculated as the closing spot price of one troy ounce of gold.
Gold market is assumed to be efficient, meaning that the market price of gold reflects the relevant information set at every point in time.[6] Additionally, over the long time period the price of gold has shown no clear trend when measured in real terms[7]

Net Investors position (I): we calculate as the total amount of golden bars, medals or medallions sold to private investors during a year, plus the transactions made by central banks or the IMF.

Unlike bonds or equities or even currencies, gold does not carry the risk of becoming worthless through the default of the issuer. Currently, gold serves as a preferred portfolio diversification instrument as a result, there is a lack of correlation with the mainstream investment solutions.

Trade Weighted US Dollar Index (TWEXB): it is an index that measures the US Dollar value relative to other world currencies. Broad currency index includes the Euro Area, Canada, Japan, Mexico, China, UK, Taiwan, Korea, Singapore, Hong Kong, Malaysia, Brazil, Switzerland, Thailand, Philippines, Australia, Indonesia, India, Israel, Saudi Arabia, Russia, Sweden, Argentina, Venezuela, Chile and Colombia.

Profit or Mines Profit (R): defined as the difference between the price of bullion and the average cash operating costs of production in the industry.

Jewelry (J): We use the volume of the jewelry market as another exogenous variable on the model. Jewelry accounts for the largest share of around 70% of total gold demand.

Here are the values of the parameters used for each of the previous variables:

[6] Solt and Swanson 1981
[7] Neuberger 2001

Table 9. Parameters used for gold price estimation

Observation_date	Net Investors	Price	Q	Profit	TWEXB	Jewelry consumption
01/01/05	28360296	479.72	121536881.55	0.57	110.8105	95493772.8
01/01/06	32624923	571.05	111080395.15	0.70	108.7339	80594035.2
01/01/07	32346258	757.07	116253784.03	0.70	103.6474	84826915.2
01/01/08	63069912	815.73	110966868.03	0.58	99.8696	77133655.8
01/01/09	62008165	1018.81	139480474.75	0.62	105.6312	61634260.2
01/01/10	82371845	1266.42	143132722.20	0.67	101.8424	76445812.8
01/01/11	79426466	1440.14	144634705.77	0.63	97.1229	77041943.4
01/01/12	74505743	1634.79	144531233.93	0.60	99.8568	77719204.2
01/01/13	40279381	1358.37	138440229.75	0.39	100.9613	95518464.6
01/01/14	49358908	1267.20	135154877.87	0.39	104.1358	87507739.2
01/01/15	51736376	1129.17	137254999.00	0.34	117.2909	85183182.6

Source: Historical data, World Gold Council

Basic Model Specification

We defined the supply-demand model as the jointly determined variables:

$Q_d = \alpha_0 + \alpha_1 P_t + \alpha_2 I_t + \alpha_3 J_t$ (Demand)

$Q_s = \beta_0 + \beta_1 P_t + \beta_2 R_t + \beta_3 TWEXB_t$ (Supply)

The subscript *t* on each variable stands for the time for the variable sample

$\alpha: demand\ equation\ coeficient$

$\beta: supply\ equation\ coeficient$

The Two-Stage Least Squares estimation (2SLS) was used and added all the exogenous valuables as the instrumental variables. By using the model described, we aim to find the equilibrium price of gold based on the demand and supply inputs that we used

We calculated the positions on the variables using different procedures. For the Trade Weighted US Dollar Index, we used a regression with a mix of indexes (Dow Jones, NASDAQ, MSCI Emerging Markets Index and the Dollar Index Spot).

Table 10. Projections on variables for gold estimation model

	Variables	2016	2017	2018	2019	2020
Q	Quantity	146104.9	139614.5	138493.7	132456	132457
P	Price of gold	–	–	–	–	–
I	net investor	54674700	51147300	45856200	45856200	45856200
TWEXB	TWEXB	121.46	119.6	118.17	117.07	116.22
R	profit	54.6%	56.5%	60.6%	61.6%	63.1%
J	jewelry	86527122	86527122	86527122	86527122	86527122

Source: Author estimates

After running the econometric model, the forecasted gold price for the next 5 years is as follows:

Table 11. Gold price estimation through 2020

Year	Price
2011	1,565
2012	1,675
2013	1,202
2014	1,184
2015	1,129
2016 E	1,260
2017 E	1,262
2018 E	1,337
2019 E	1,319
2020 E	1,316

Source: Author estimates

After running the estimation model we got the following outcome for Goldcorp:

VALUATION						Forecast				
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sales	5,362	4,660	3,609	3,436	4,375	3,937	3,685	4,013	4,105	4,206
(-)Total costs	-2,430	-2,050	-2,615	-2,211	-2,804	-2,358	-2,242	-2,233	-2,159	-2,107
EBITDA	**2,932**	**2,610**	**994**	**1,225**	**1,571**	**1,579**	**1,444**	**1,780**	**1,946**	**2,099**
% margin	*54.7%*	*56.0%*	*27.5%*	*35.7%*	*35.9%*	*40.1%*	*39.2%*	*44.4%*	*47.4%*	*49.9%*
Depreciation & Amortization:	-694	-585	-630	-753	-1,493	-1203	-1126	-1157	-1198	-1213
EBIT	**2,238**	**2,025**	**364**	**472**	**78**	**376**	**318**	**624**	**748**	**885**
(-)Taxes (40%)	-636	-546	-333	-140	-17	-150	-127	-249	-299	-354
(-) Capex	-1,778	-2,544	-2,177	-2,021	-1,178	-1,123	-1,071	-1,017	-957	-901
Increase/Decrease in NWC		**1,052**	**786**	**-350**	**409**	**-586**	**-343**	**-573**	**-15**	**-48**
Free Cash Flow		**572**	**-730**	**-1,286**	**785**	**-280**	**-97**	**-60**	**674**	**795**
WACC	**6.4%**									
Discount Period						1.0	2.0	3.0	4.0	5.0
Discount Factor						0.94	0.88	0.83	0.78	0.73
PV of free cash flow						**-264**	**-86**	**-50**	**526**	**583**

WACC	Growth %				
	1.3%	**1.8%**	**2.3%**	**2.8%**	**3.3%**
4.4%	23.52	28.71	36.42	49.10	73.84
5.4%	16.23	18.93	22.52	27.50	34.93
6.4%	11.85	13.48	**15.51**	18.10	21.55
7.4%	8.93	10.01	11.29	12.86	14.81
8.4%	6.86	7.61	8.49	9.52	10.76

WACC CALCULATION	
Target Capital Structure	
Debt to Total Capitalization	36.7%
Equity to Total Capitalization	63.3%
Debt to Equity Ratio	71.8%
Cost of Equity	
Risk-free rate	2.0%
Market risk Premium	7.5%
Levered Beta	0.48
Equity Risk Premium	3.8%
Cost of Equity	**9.3%**
Cost of Debt	
Cost of Debt	2.2%
Taxes	40.0%
After Tax Cost of Debt	**1.3%**
WACC	**6.4%**

In order to corroborate the beta for the WACC calculation, we used the beta regression with 60 data points (five years of monthly returns). We graphed the betas to examine any systematic changes in a stock's risk and regressed it against the Russell 3000 index. The result was a levered beta of 0.48 that was used for the valuation.

APPENDIX

Table 12. Gold supply and demand projections

Gold Supply/Demand (Tonnes)	2018E	2017*E*	2016*E*	2015	2014	2013	2012	2011
Supply								
Mine Production	2,811.0	2,958.0	3,082.0	3,186.2	3,138.0	3,071.6	2,936.3	2,846.3
Net Producer hedging	10.0	10.0	10.0	- 20.8	103.6	- 29.1	- 47.3	32.3
Total mine supply	*2,821.0*	*2,968.0*	*3,092.0*	*3,165.4*	*3,241.6*	*3,042.5*	*2,889.0*	*2,878.6*
Recycled gold	930.0	990.0	1,050.0	1,092.8	1,168.3	1,246.4	1,632.6	1,664.6
Total Supply	*3,751.0*	*3,958.0*	*4,142.0*	*4,258.2*	*4,409.9*	*4,288.9*	*4,521.6*	*4,543.2*
Demand								
Fabrication-Jewllery				2,455.2	2,484.4	2,729.5	2,192.7	2,183.1
Fabrication-Tech				330.7	346.4	348.5	359.9	381.4
Subtotal Above Fabrication	*2,753.0*	*2,753.0*	*2,753.0*	*2,785.9*	*2,830.8*	*3,078.0*	*2,552.6*	*2,564.5*
Total Bar and coin demand	800.0	900.0	1,000.0	1,011.7	1,002.2	1,691.2	1,276.0	1,383.9
ETFs and similar products	- 50.0	- 50.0	- 50.0	- 133.4	- 183.1	915.9	306.3	236.4
Central banks and other inst.	500.0	550.0	600.0	588.4	590.5	647.7	582.4	515.8
Gold demand	*4,003.0*	*4,153.0*	*4,303.0*	*4,252.6*	*4,240.4*	*4,501.0*	*4,717.3*	*4,700.6*
Surplus/deficit (OTC Investment & Stock Flows)	- 252.0	- 195.0	- 161.0	5.6	169.5	- 212.1	- 195.7	- 157.4
Total Demand	*3,751.0*	*3,958.0*	*4,142.0*	*4,258.2*	*4,409.9*	*4,288.9*	*4,521.6*	*4,543.2*

Source: Credit Suisse, Bloomberg, World Gold Council, Thomson Reuters

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