Why Gold (and Silver) Belong in Your Portfolio

AAII Houston Retirement SIG

Jan 14, 2021

Disclaimer

I am not a financial advisor or financial professional

I have no particularly expertise about gold and silver (nor anything else for that matter)

I have nothing to sell

Do your own research and due diligence

Discussion Topics

- Perceptions and Reality
- Macro Drivers for Gold (Silver)
- Gold (Silver) Supply and Demand
- The purpose of Gold in a portfolio
- Gold (Silver) price performance
- Some ways to invest in Gold

Perceptions vs Reality

Perceptions vs Reality

- Crazy Goldbug
- Doomsdayer
- Anarchist
- Senseless since it doesn’t pay a dividend

Perceptions vs Reality

- Gold and silver have been money > 5000 yrs
- Asset diversification and "wealth insurance"
  - Unprecedented global debt with relatively low economic growth: currency debasement, lost faith in Central Bankers, negative interest rates, war on cash
  - Ray Dalio, Bridgewater: "If you don't own gold, you don't understand history or economics"

Why Au and Ag

Gold and silver became stores of value and mediums of exchange

- **Can’t use the gases**
- **Can’t use those that dissolve in water**
- **Or the ones that react with air by corroding or bursting into flames**
- **Or the radioactive elements of which there are 38**
- **That leaves just the 5 “precious metals”**
  - **Rhodium and Palladium weren’t discovered until the 18th century**
  - **Platinum melting point much too high for the earliest furnaces**
  - **Leaving only gold and silver**

Some Gold Facts

Nearly all the gold ever mined, about 200,000 metric tons, still exists unlike other commodities which are "consumed"

- Production 2019: ~3200 metric tons
  - Asia: 25%
  - Africa: 21%
  - Central and South America: 18%
  - Russian Federation: 16%
  - North America: 15%
  - Europe: 4%

- Total above-ground stocks (end-2019): 197,576 tonnes
  1. Jewelery: 92,947 tonnes, 47.0%
  2. Private investment: 42,619 tonnes, 21.6%
  3. Central Banks: 33,919 tonnes, 17.2%
  4. Other: 28,090 tonnes, 14.2%
     - Technology incl Electronics, Dental/Medical;
     - Other Industrials

Outlook for Gold and Silver

- Gold and silver are real assets – can’t be debased/devalued
- Miners are cheap historically and compared to most other equity sectors, with a strong earnings and cash flow outlook
- Governments are pledging to increase employment, support inflation and keep interest rates low
- Liquidity injections and stimulus will continue in the foreseeable future. Is outright MMT almost certain?
- CBs must continue massive debt purchases to keep interest rates at ulta-low levels

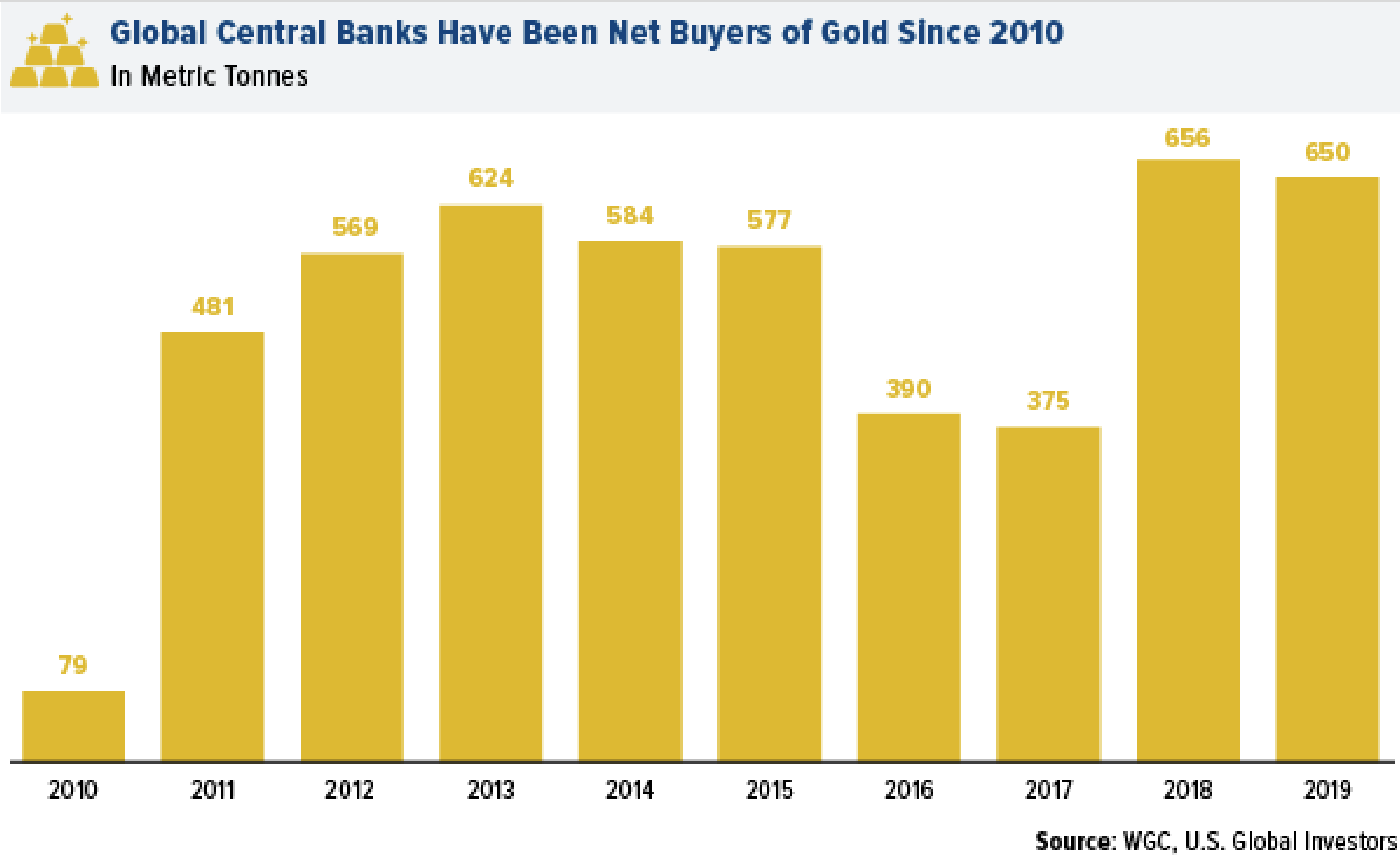
Why won't they just increase production?

- Supply fundamentals deteriorating
  - Producing 100 M oz/yr, finding less than 50 M oz/yr
  - Ore grades deteriorating, averaging 1.1g/metric ton
  - Production will be difficult to increase significantly
  - It can often take 10-20 years to begin production AFTER first finding an economic deposit
  - Mining business much more difficult than Oil/Gas

Constraints: Talent, Capital, Geopolitical/Legal, Environmental, Labor, Topography, Metallurgy, Infrastructure, Luck

Gold Demand

- Strong and increasing investment demand from Asia
- CBs have been net buyers, particularly Russia and China
- Very low investment allocations in the US, far below the historical mean by a factor of 6
- Starting in 2H15, US investment demand for gold started increasing substantially


Global Central Banks Have Been Net Buyers of Gold Since 2010
In Metric Tonnes
79
481
569
624
584
577
390
375
656
650
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
Source: WGC, U.S. Global Investors

“We are not even thinking about thinking about raising rates”

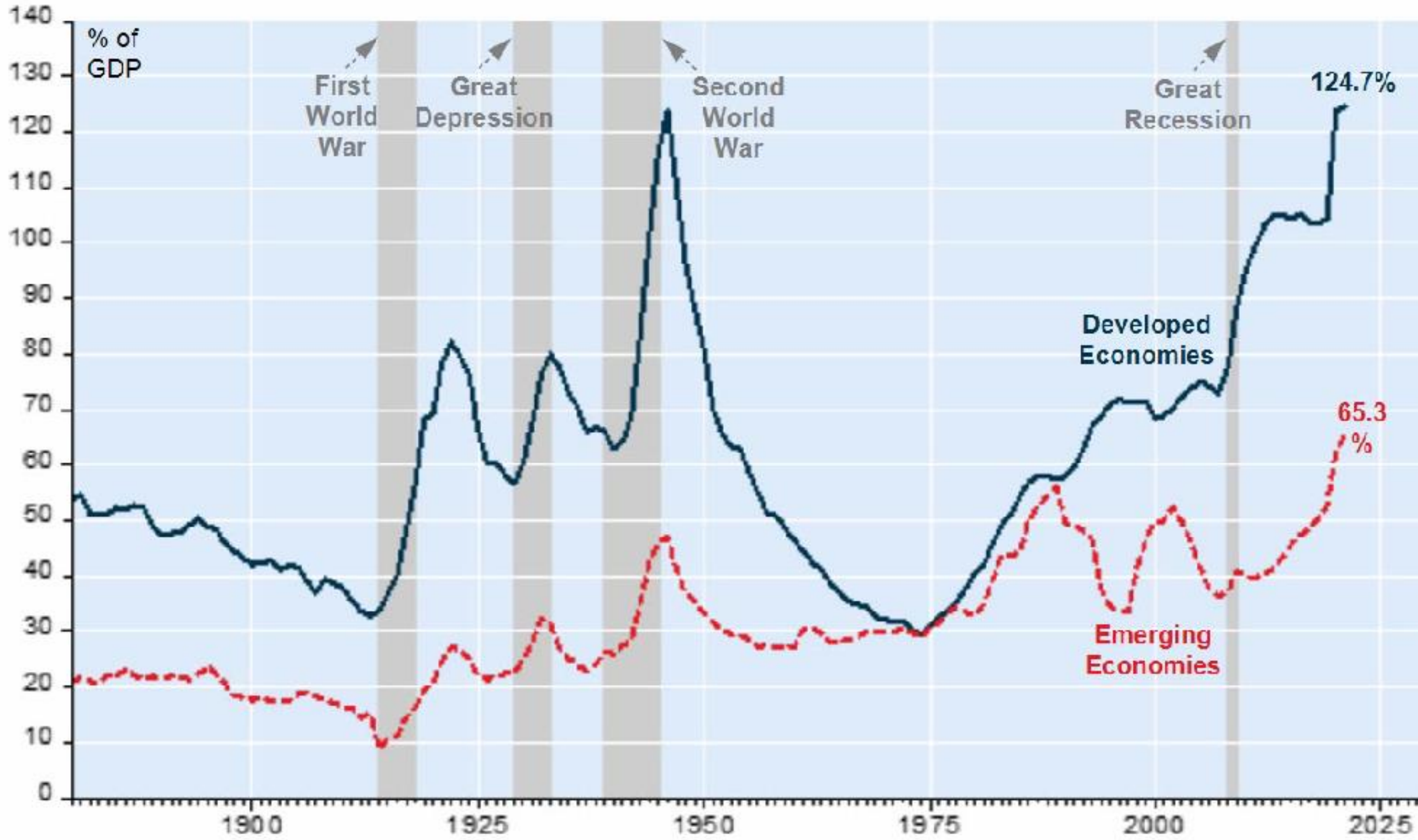
- Current environment of expansionary monetary and fiscal policies globally aiming to stoke inflation while keeping interest rates artificially low provides an ideal backdrop for a bull market in both gold and silver
- Precious metals provide an alternative when bonds provide little return without downside portfolio protection

Global Monetary And Fiscal Stimulus To Fight COVID-19 Impact 2020 Feb to Nov (CSM)

	Potential Central Bank Liquidity Injection		Potential Fiscal Stimulus		Central Bank Liquidity Injection and Fiscal Stimulus	
	$ Tln	% GDP	$ Tln	% GDP	$ Tln	% GDP
U.S.***	$6.21	29.0%	$3.29	15.4%	$9.50	44.3%
Eurozone	$2.65	19.9%	$4.27	32.0%	$6.92	52.0%
Japan**	$1.03	20.0%	$2.22	43.1%	$3.25	63.1%
U.K.	$0.57	20.7%	$0.59	21.6%	$1.16	42.3%
China****	$1.43	10.0%	$1.22	8.4%	$2.64	18.4%
Others*	$0.92		$2.85		$3.77	
Total	**$12.80**	**14.8%**	**$14.44**	**16.7%**	**$27.25**	**31.5%**

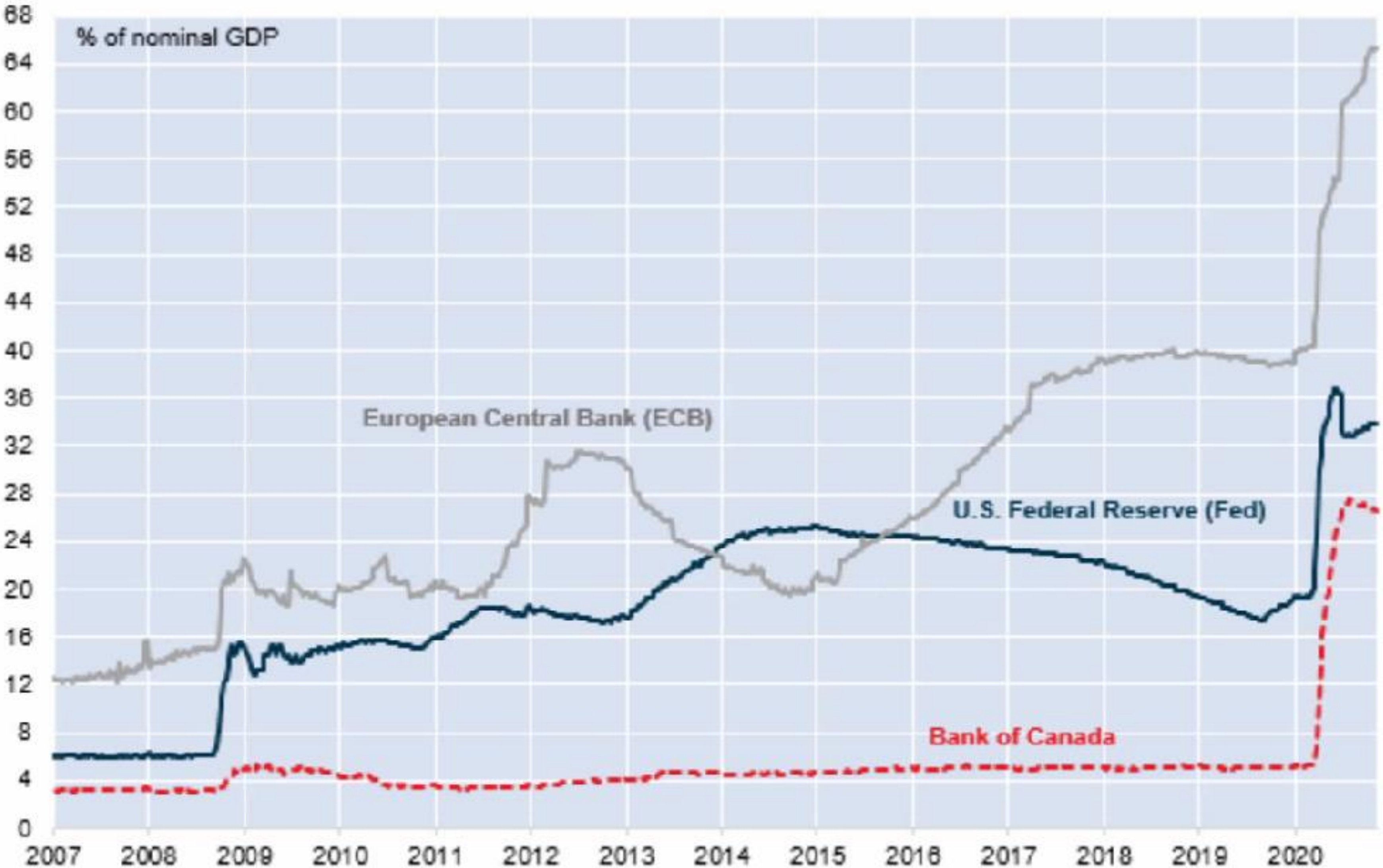
Source: Cornerstone Macro, data at as of 11/20/2020.

Government Debt as % of GDP

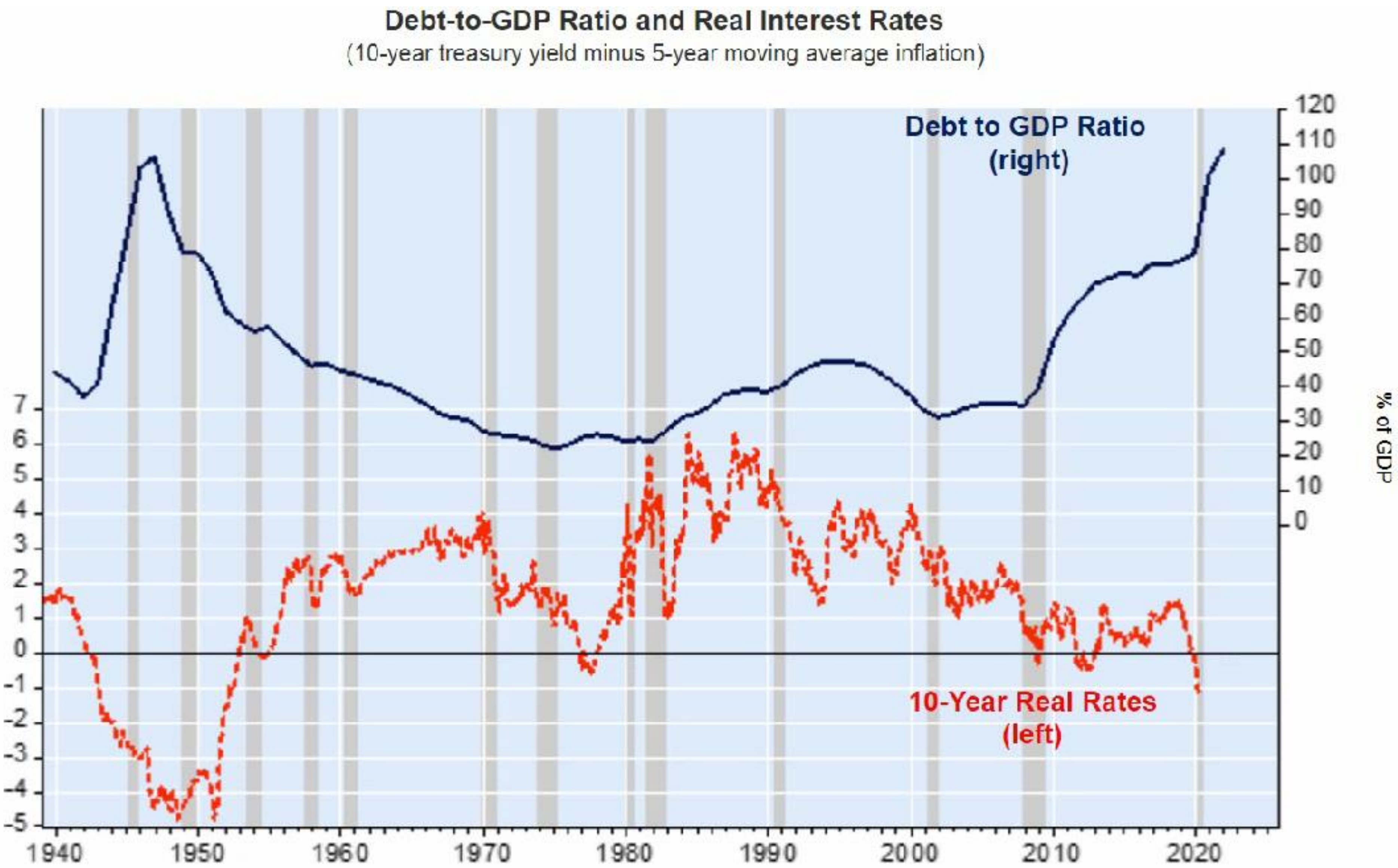


Source: IMF; NBF Economics and Strategy.

Total Assets Held by the European Central Bank (ECB), U.S. Federal Reserve (Fed) and the Bank of Canada

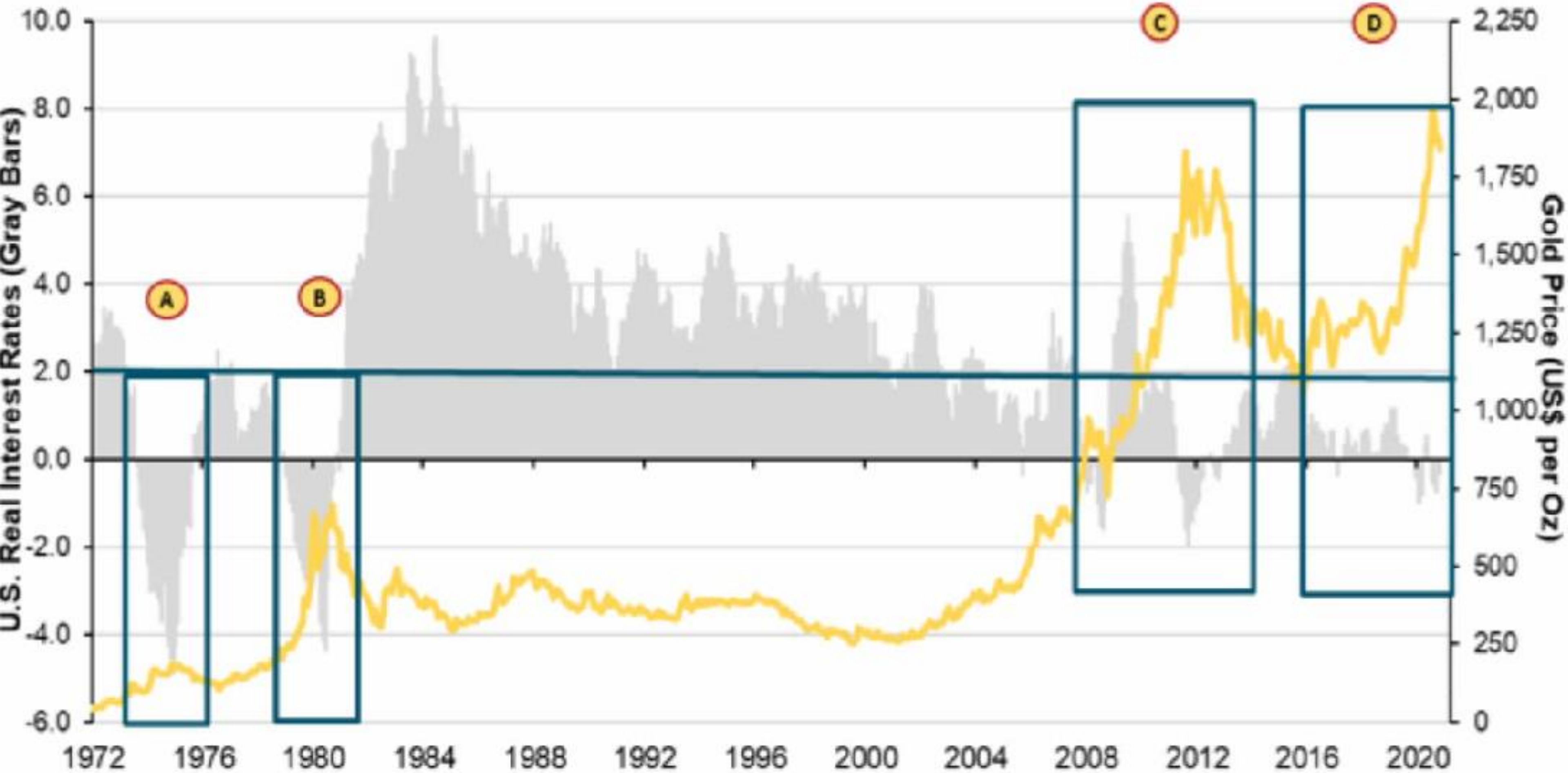


Source: NBF Economics and Strategy (data via Refinitiv and Bank of Canada), data as of 11/04/2020.



Source: NBF Economics and Strategy (data via Bloomberg).

Gold Price and Real U.S. Interest Rates During Four Notable Periods of Negative Real Rates



Source: Bloomberg and CIBC World Markets Inc., data as of 11/23/2020.

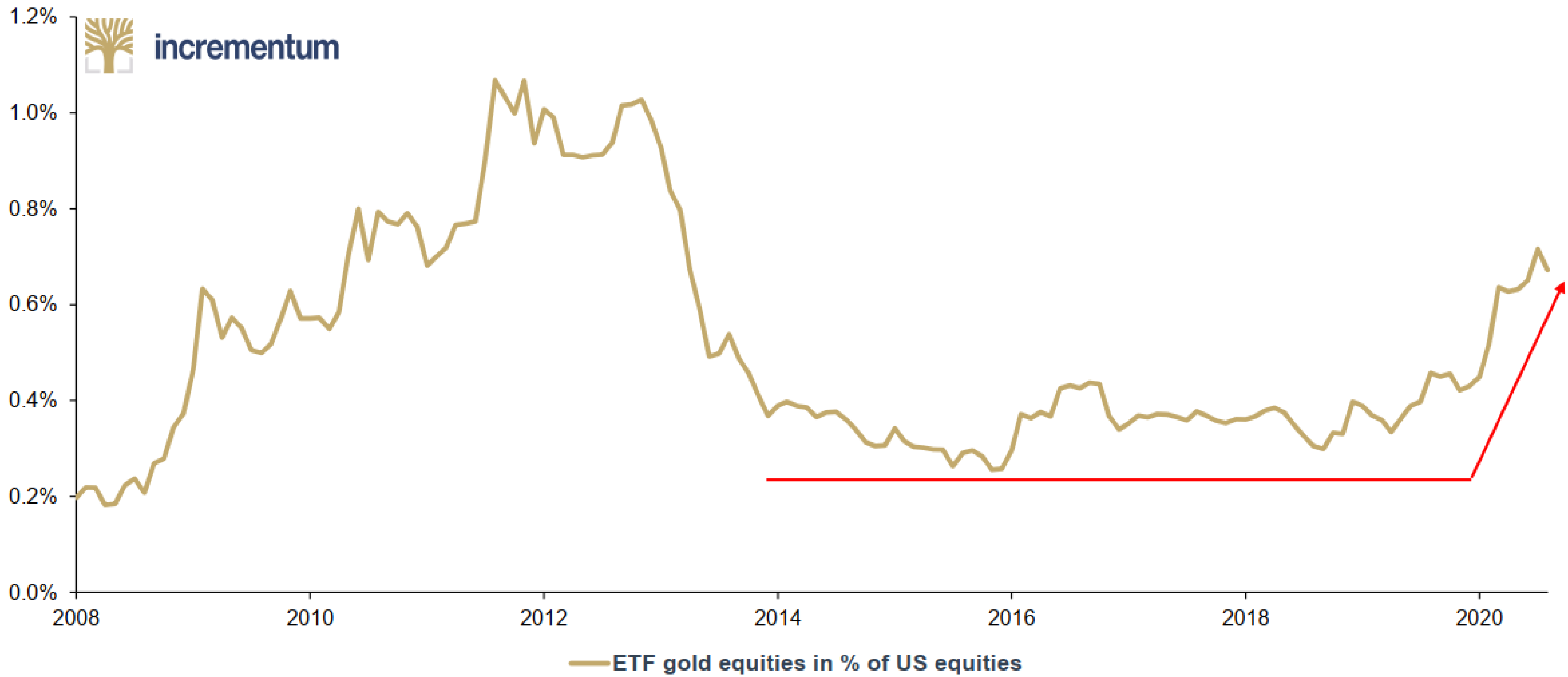
Gold Performance Over Various Periods

Gold Price Performance in Major Currencies, 2000-09/2020

	USD	EUR	GBP	AUD	CAD	CNY	JPY	CHF	INR	Average
2000	-5.3%	1.2%	2.4%	11.2%	-1.9%	-5.4%	5.8%	-4.2%	1.4%	**0.6%**
2001	2.4%	8.4%	5.3%	12.0%	8.8%	2.4%	18.0%	5.5%	5.8%	**7.6%**
2002	24.4%	5.5%	12.3%	13.2%	22.9%	24.4%	12.2%	3.5%	23.7%	**15.8%**
2003	19.6%	-0.2%	8.0%	-10.7%	-1.3%	19.6%	8.1%	7.4%	13.9%	**7.2%**
2004	5.6%	-2.0%	-1.7%	1.5%	-2.0%	5.6%	0.8%	-3.1%	0.1%	**0.5%**
2005	18.1%	35.2%	31.6%	25.9%	14.1%	15.1%	35.9%	36.3%	22.8%	**26.1%**
2006	23.0%	10.4%	8.1%	14.3%	23.3%	19.0%	24.2%	14.1%	20.7%	**17.5%**
2007	30.9%	18.4%	29.2%	18.0%	12.0%	22.5%	22.5%	21.8%	16.9%	**21.4%**
2008	5.4%	10.0%	43.0%	30.5%	28.7%	-1.5%	-14.2%	-0.8%	30.0%	**14.6%**
2009	24.8%	21.8%	13.0%	-1.6%	7.9%	24.8%	27.9%	21.1%	19.2%	**17.6%**
2010	29.5%	38.6%	34.2%	13.9%	22.8%	25.1%	13.2%	16.8%	24.8%	**24.3%**
2011	10.2%	13.8%	10.6%	9.9%	12.7%	5.2%	4.5%	10.7%	30.7%	**12.0%**
2012	7.1%	5.0%	2.4%	5.3%	4.2%	6.0%	20.7%	4.5%	11.1%	**7.4%**
2013	-28.0%	-30.9%	-29.4%	-16.1%	-23.0%	-30.1%	-12.6%	-29.8%	-19.1%	**-24.3%**
2014	-1.8%	11.6%	4.4%	7.2%	7.5%	0.7%	11.6%	9.4%	0.2%	**5.6%**
2015	-10.4%	-0.2%	-5.3%	0.6%	6.8%	-6.2%	-9.9%	-9.7%	-5.9%	**-4.4%**
2016	8.5%	12.1%	29.7%	9.4%	5.3%	16.1%	5.4%	10.3%	11.4%	**12.0%**
2017	13.1%	-0.9%	3.3%	4.6%	5.9%	6.0%	9.0%	8.3%	6.3%	**6.2%**
2018	-1.5%	3.0%	4.3%	9.0%	6.8%	4.1%	-4.2%	-0.8%	7.3%	**3.1%**
2019	18.3%	21.0%	13.8%	18.7%	12.6%	19.7%	17.2%	16.6%	21.3%	**17.7%**
2020 ytd	22.6%	18.2%	27.6%	22.5%	26.4%	20.2%	19.2%	17.6%	26.6%	**22.3%**
Average	10.3%	9.5%	11.7%	9.5%	9.5%	9.2%	10.3%	7.4%	12.8%	**10.0%**

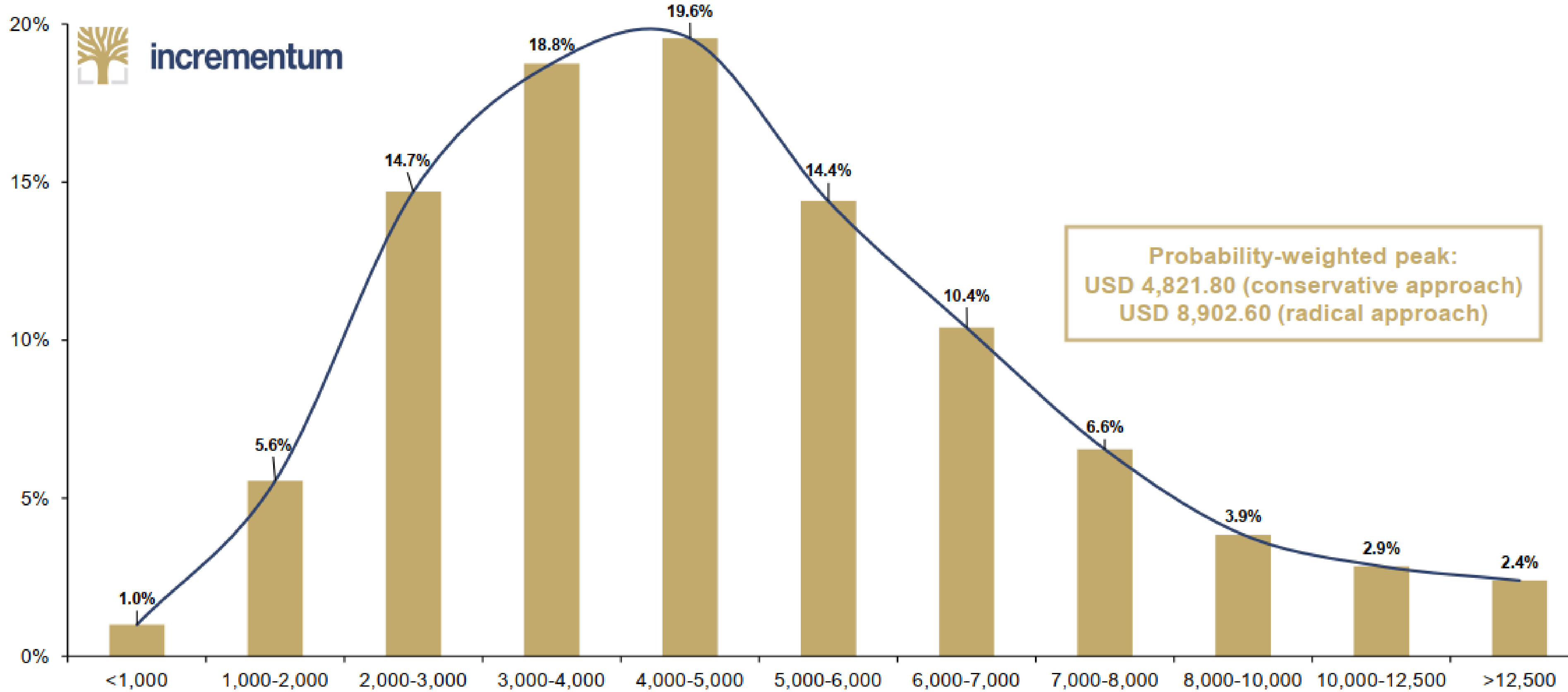
Source: Reuters Eikon (as of 25th of September 2020), goldprice.org, Incrementum AG

Gold Held in ETFs as % of US Equities, 01/2008-08/2020



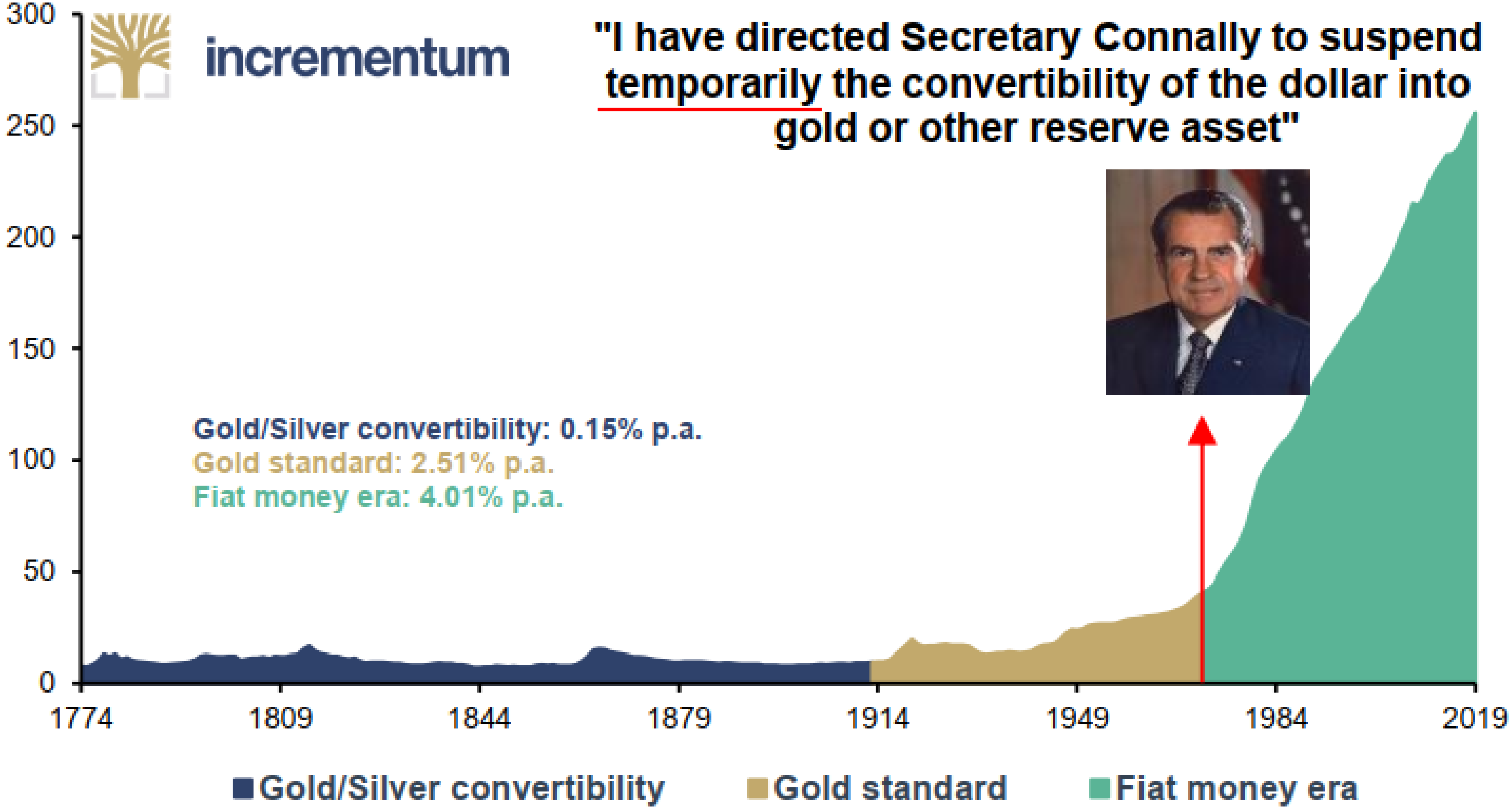
Source: Atlas Pulse, Reuters Eikon, World Gold Council, Incrementum AG

Approximated Gold Price in 2030 by Distribution Probability*, in USD



Source: Incrementum AG (*The exact description of the model can be found in the *In Gold We Trust* report 2020 on page 345ff.)

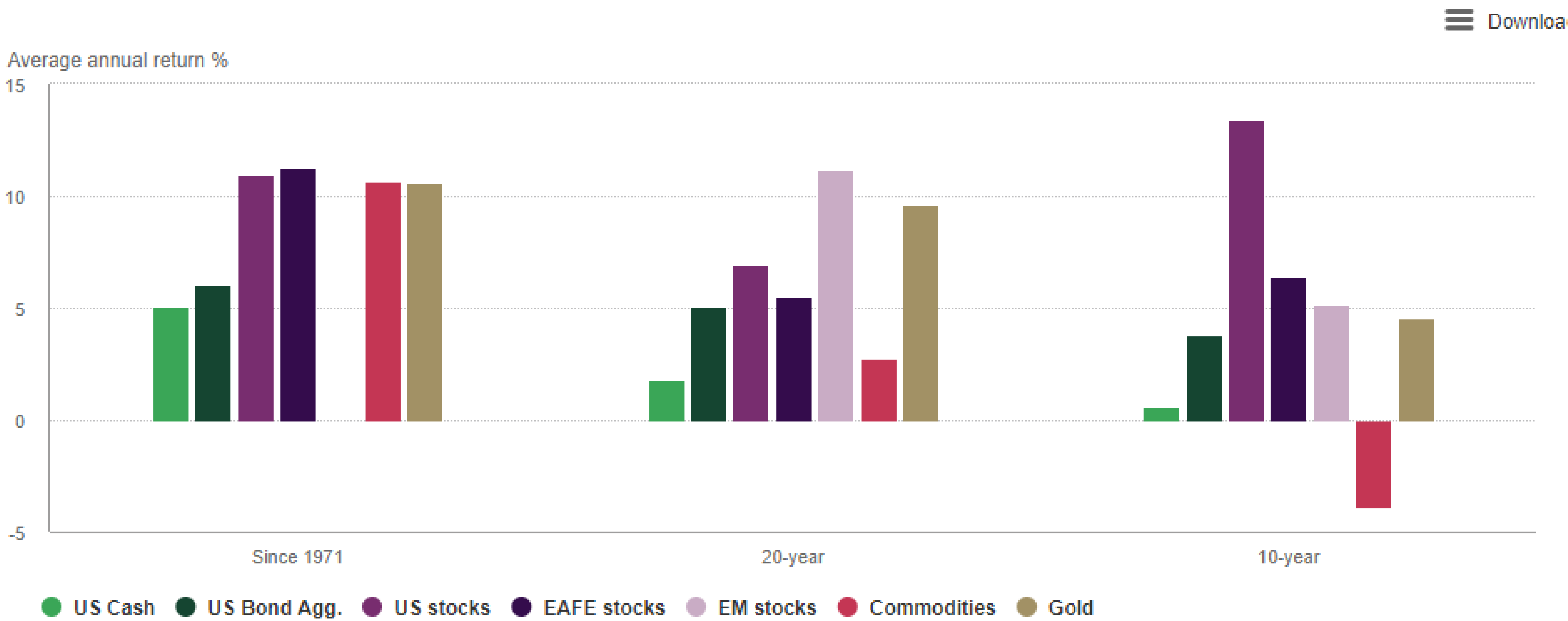
CPI across monetary regimes, 1774-2019



Source: Measuringworth, Reuters Eikon, Incrementum AG

Chart 2: Gold has delivered positive returns over the long run, outperforming key asset classes

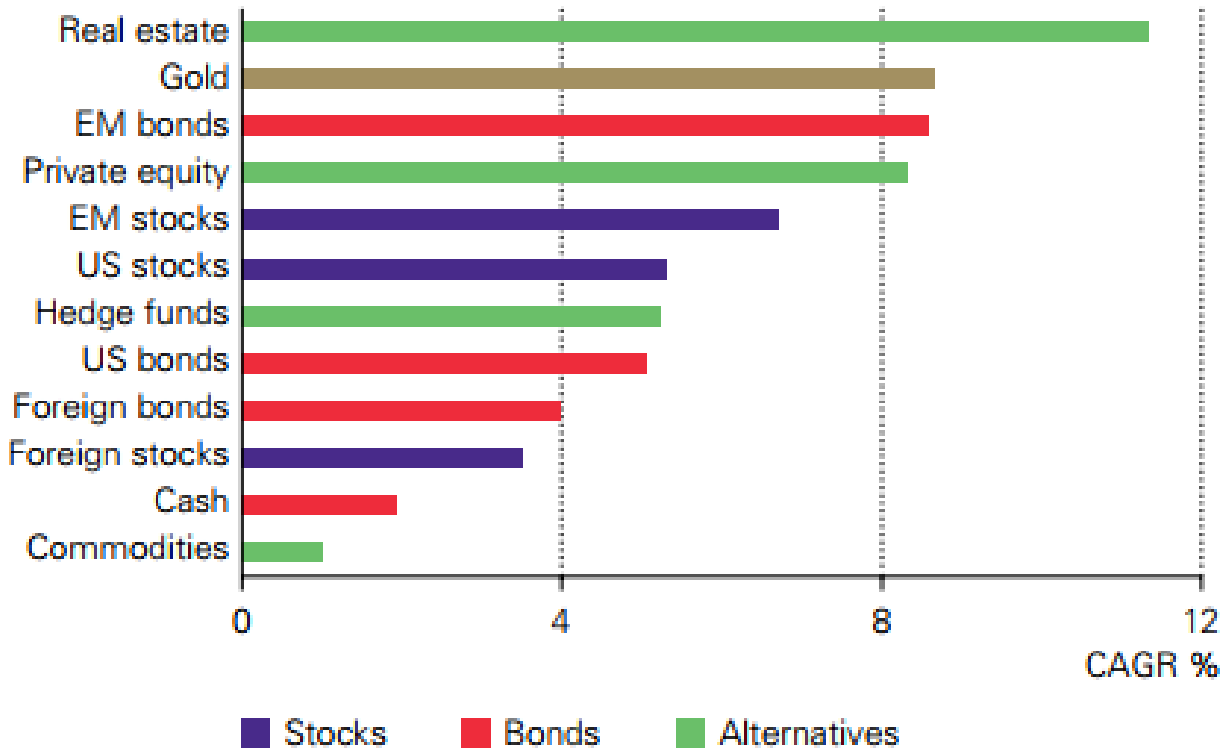
Average annual return of key global assets in US dollars*



Sources: Bloomberg, ICE Benchmark Administration, World Gold Council; Disclaimer

*As of 31 December 2019. Computations in US dollars of total return indices for ICE 3-month Treasury, Bloomberg Barclays US Bond Aggregate, MSCI US, EAFE and EM indices, Bloomberg Commodity Index and spot for LBMA Gold Price PM.

Chart 20: Gold has delivered strong returns against major asset classes over the past 20 years*

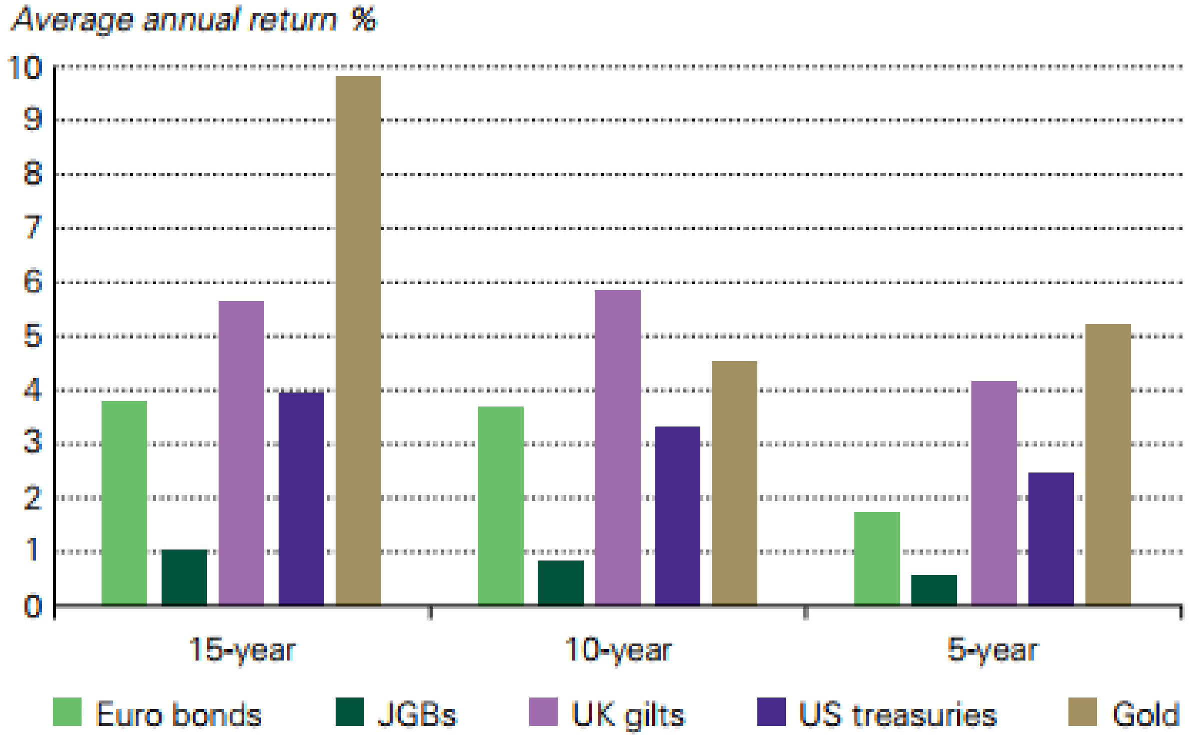


As of 31 December 2019. Computations in US dollars of total return indices for ICE 3-month Treasury, Bloomberg Barclays US, Global and EM Bond Aggregate, MSCI US, EAFE and EM indices, FTSE REITs Index, HFRI Composite, S&P Private Equity Index, Bloomberg Commodity Index and spot for LBMA Gold Price PM.

Source: Bloomberg, ICE Benchmark Administration, World Gold Council

Chart 19: Gold significantly outperforms major global sovereign debt

Gold's long-term performance compared to major sovereign debt*

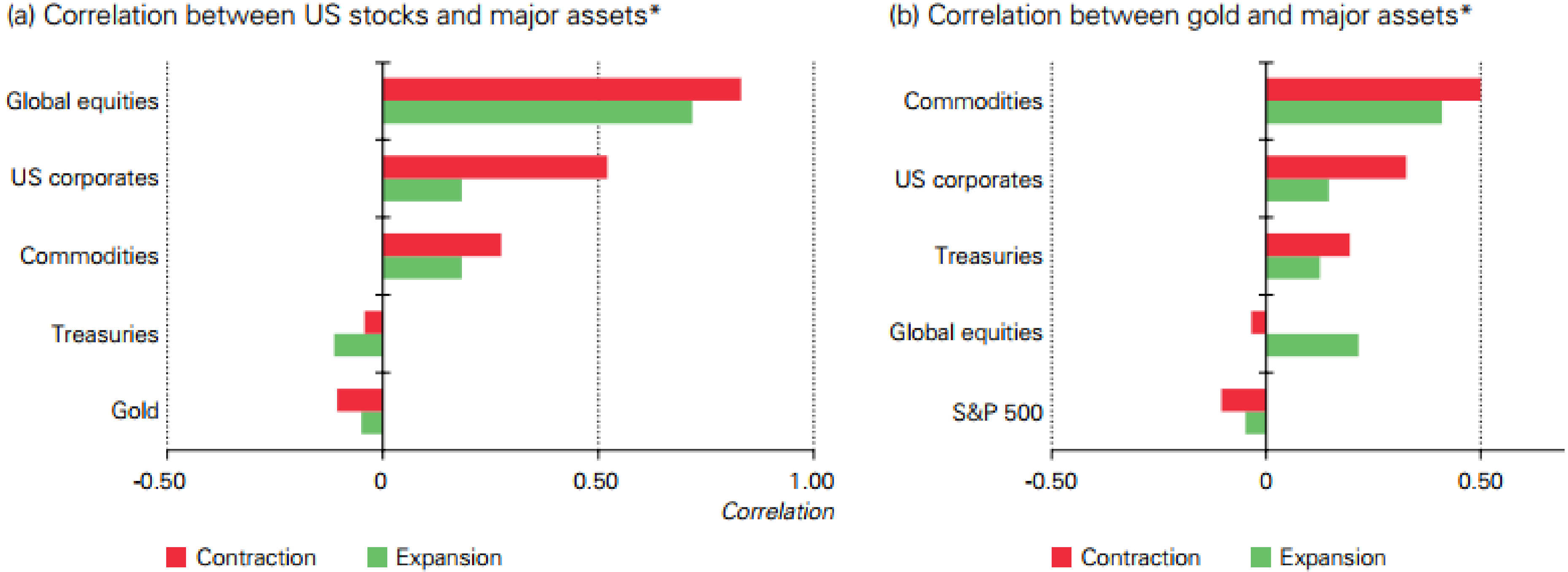


*Based on data from 31 December 2004 to 31 December 2019 due to limited bond data.

All data measured in US dollars and unhedged. Indices used include: Euro bonds (ICE BofA AAA Euro Government Index), JGBs (ICE BofA Japan Government Index), UK gilts (ICE BofA UK Gilt Index), US treasuries (J.P. Morgan GBI US Unhedged), and spot for LBMA PM Gold Price.

Source: Bloomberg, J.P. Morgan Global Bond Index

Chart 24: Gold is an effective diversifier in periods of economic expansion and contraction

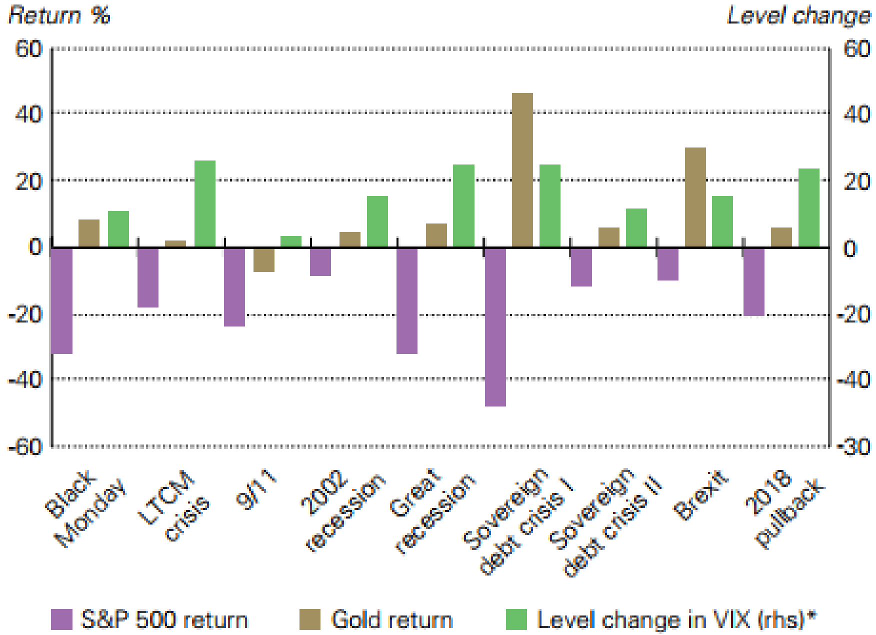


*Based on monthly returns between 1 January 1971 and 31 December 2019. Economic expansions and contractions as determined by the National Bureau of Economic Research (NBER).

Source: Bloomberg, NBER, World Gold Council

Chart 25: The gold price tends to increase in periods of systemic risk

S&P 500 and gold return vs change in VIX level*

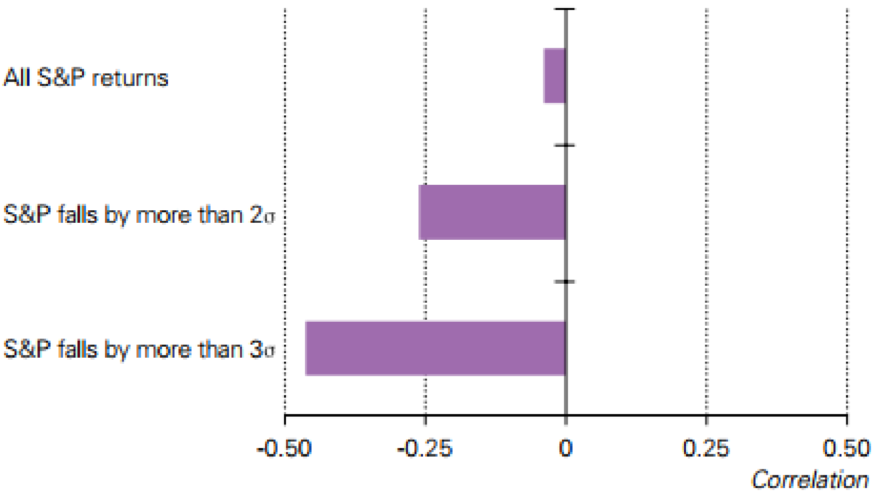


*The VIX is available only after January 1990. For events occurring prior to that date annualised 30-day S&P 500 volatility is used as a proxy. Dates used: Black Monday: 9/1987–11/1987; LTCM: 8/1998; Dot-com: 3/2000–3/2001; September 11: 9/2001; 2002 recession: 3/2002–7/2002; Great Recession: 10/2007–2/2009; Sovereign debt crisis I: 1/2010–6/2010; Sovereign debt crisis II: 2/2011–10/2011; 2018 pullback: 10/2018-12/2018.

Source: Bloomberg, World Gold Council

Chart 26: The price of gold tends to increase more when stocks pull down sharply

Conditional correlation between gold and the S&P 500 relative to the magnitude of the stock pullback*



*Based on weekly returns between 31 December 1989 and 31 December 2019.

Source: Bloomberg, World Gold Council

Historical Asset Class Performance During Stagflationary Periods

Start	End	S&P 500	US Dollar	S&P GSCI	Metals	Industrial Commodities	Agriculture/ Livestock	Gold	Silver	WTI Oil	US T10Y (bps)
Q4/1959	Q1/1971	13.2%		-3.5%	-8.8%	-6.4%	8.9%	10.5%	-10.1%	6.3%	-198
Q4/1973	Q3/1975	-5.7%	11.6%	18.3%	21.8%	-1.1%	10.0%	37.2%	64.7%	158.9%	158
Q2/1979	Q2/1981	32.7%	22.6%	33.0%	-7.8%	1.5%	22.8%	77.4%	4.3%	139.7%	472
Q1/1982	Q1/1983	42.9%	6.8%	1.4%	-11.8%	-5.8%	1.6%	29.7%	48.7%	7.5%	-356
Average nominal return		**20.8%**	**13.7%**	**12.3%**	**-1.6%**	**-2.9%**	**10.8%**	**38.7%**	**26.9%**	**78.1%**	**19**
Average real return		**7.0%**	**-0.1%**	**-1.5%**	**-15.5%**	**-16.8%**	**-3.0%**	**24.9%**	**13.1%**	**64.3%**	

Source: Bloomberg, Haver Analytics, Rosenberg Research, Incrementum AG

Historical Equity Sector Performance During Stagflationary Periods

Start	End	Materials	Discretionary	Industrials	Energy	Health Care	Financials	Staples	Info. Tech.	Telecom	Utilities
Q4/1973	Q3/1975	18.9%	-7.9%	-13.6%	-4.0%	-11.0%	-21.0%	-10.0%	-24.3%	-2.6%	-11.1%
Q2/1979	Q2/1981	26.6%	17.0%	33.2%	54.2%	29.3%	37.4%	20.4%	-7.9%	-5.8%	-4.4%
Q1/1982	Q1/1983	48.5%	70.5%	55.2%	17.8%	43.0%	41.2%	45.8%	79.3%	15.9%	16.8%
Average nominal return		**31.4%**	**26.5%**	**25.0%**	**22.7%**	**20.4%**	**19.2%**	**18.7%**	**15.7%**	**2.5%**	**0.4%**
Average real return		**17.6%**	**12.7%**	**11.1%**	**8.9%**	**6.6%**	**5.4%**	**4.9%**	**1.9%**	**-11.3%**	**-13.4%**

Source: Bloomberg, Haver Analytics, Rosenberg Research, Incrementum AG

Performance of gold in all the years in which the S&P 500 has closed out the year with a loss

	S&P 500	Gold	Out-/Underperformed
1973	-17%	72%	Outperformed
1974	-30%	73%	Outperformed
1977	-12%	25%	Outperformed
1981	-10%	-32%	Underperformed
1990	-7%	-2%	Outperformed
1994	-2%	-2%	Flat
2000	-10%	-6%	Outperformed
2001	-13%	1%	Outperformed
2002	-25%	24%	Outperformed
2008	-38%	3%	Outperformed
2011	0%	11%	Outperformed
2015	-1%	-10%	Underperformed
2018	-6%	-2%	Outperformed
~~2020~~	~~-14%~~	~~14%~~	~~Outperformed~~
Average	-13%	12%	Outperformed

As of May 2020. EOY was Positive

Source: Blackrock, Reuters Eikon, Incrementum AG

What about Silver?

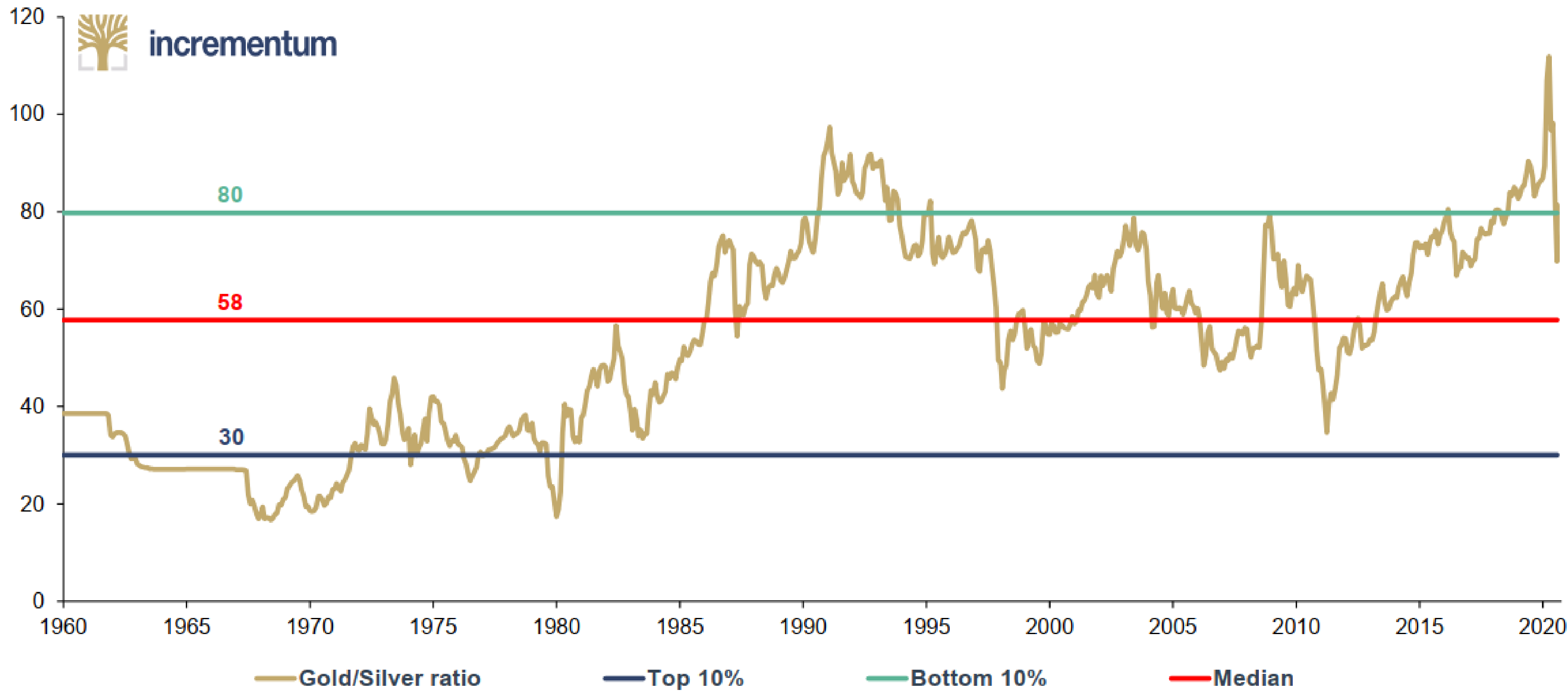
- Silver industrial demand growth: electronics, EV, PV Solar
- Much smaller market and therefore more volatile
- Investment demand growth
- Significantly increasing supply is a challenge

Silver Price Performance in Major Currencies

	USD	EUR	GBP	AUD	CAD	CNY	JPY	CHF	INR	Average
2000	-15.0%	-9.2%	-8.1%	-0.1%	-11.9%	-15.0%	-5.0%	-13.9%	-8.9%	**-9.7%**
2001	0.4%	6.3%	3.3%	9.9%	6.7%	0.4%	15.7%	3.5%	3.8%	**5.6%**
2002	3.3%	-12.4%	-6.8%	-6.0%	2.0%	3.3%	-6.9%	-14.1%	2.7%	**-3.9%**
2003	24.6%	3.9%	12.4%	-7.0%	2.7%	24.6%	12.6%	11.9%	18.6%	**11.6%**
2004	14.5%	6.3%	6.6%	10.1%	6.2%	14.5%	9.3%	5.1%	8.6%	**9.0%**
2005	29.7%	48.6%	44.6%	38.3%	25.4%	26.5%	49.3%	49.8%	35.0%	**38.6%**
2006	46.1%	31.1%	28.4%	35.8%	46.4%	41.3%	47.4%	35.5%	43.3%	**39.5%**
2007	14.8%	3.8%	13.3%	3.4%	-1.8%	7.4%	7.4%	6.8%	2.5%	**6.4%**
2008	-23.5%	-20.1%	3.8%	-5.3%	-6.6%	-28.5%	-37.7%	-28.0%	-5.6%	**-16.8%**
2009	48.9%	45.4%	34.9%	17.4%	28.8%	49.0%	52.7%	44.6%	42.3%	**40.4%**
2010	83.4%	96.2%	89.9%	61.2%	73.8%	77.0%	60.2%	65.3%	76.6%	**76.0%**
2011	-10.3%	-7.3%	-9.9%	-10.5%	-8.2%	-14.3%	-14.9%	-9.9%	6.4%	**-8.8%**
2012	9.5%	7.4%	4.6%	7.7%	6.5%	8.4%	23.4%	6.9%	13.6%	**9.8%**
2013	-36.0%	-38.5%	-37.1%	-25.3%	-31.4%	-37.8%	-22.3%	-37.5%	-28.0%	**-32.7%**
2014	-19.3%	-8.3%	-14.2%	-12.0%	-11.7%	-17.3%	-8.3%	-10.2%	-17.7%	**-13.2%**
2015	-11.7%	-1.6%	-6.7%	-0.8%	5.2%	-7.6%	-11.2%	-11.0%	-7.2%	**-5.9%**
2016	15.2%	19.0%	37.6%	16.2%	11.8%	23.2%	11.9%	17.1%	18.3%	**18.9%**
2017	6.4%	-6.8%	-2.9%	-1.6%	-0.4%	-0.3%	2.5%	1.8%	-0.1%	**-0.2%**
2018	-8.7%	-4.5%	-3.2%	1.1%	-1.0%	-3.5%	-11.2%	-8.0%	-0.5%	**-4.4%**
2019	15.2%	17.8%	10.8%	15.6%	9.7%	16.6%	14.2%	13.6%	18.1%	**14.6%**
2020 ytd	28.2%	23.6%	33.4%	28.1%	32.1%	25.6%	24.7%	23.0%	32.4%	**27.9%**
Average	10.3%	9.6%	11.2%	8.4%	8.8%	9.2%	10.2%	7.2%	12.1%	**9.7%**

Source: Reuters Eikon (as of 25th of September 2020), silverprice.org, Incrementum AG

The Gold/Silver Ratio of the Modern Era, 01/1960-09/2020



Source: World Bank, Wheaton Precious Metals, Incrementum AG

Ways to Buy Gold and Silver

- Bullion coins, bars, rounds
- Gold Commodity ETFs like OUNZ, PHYS
- Silver Commodity ETFs like PSLV
- Digital Gold/Silver: OneGold, G-Coin

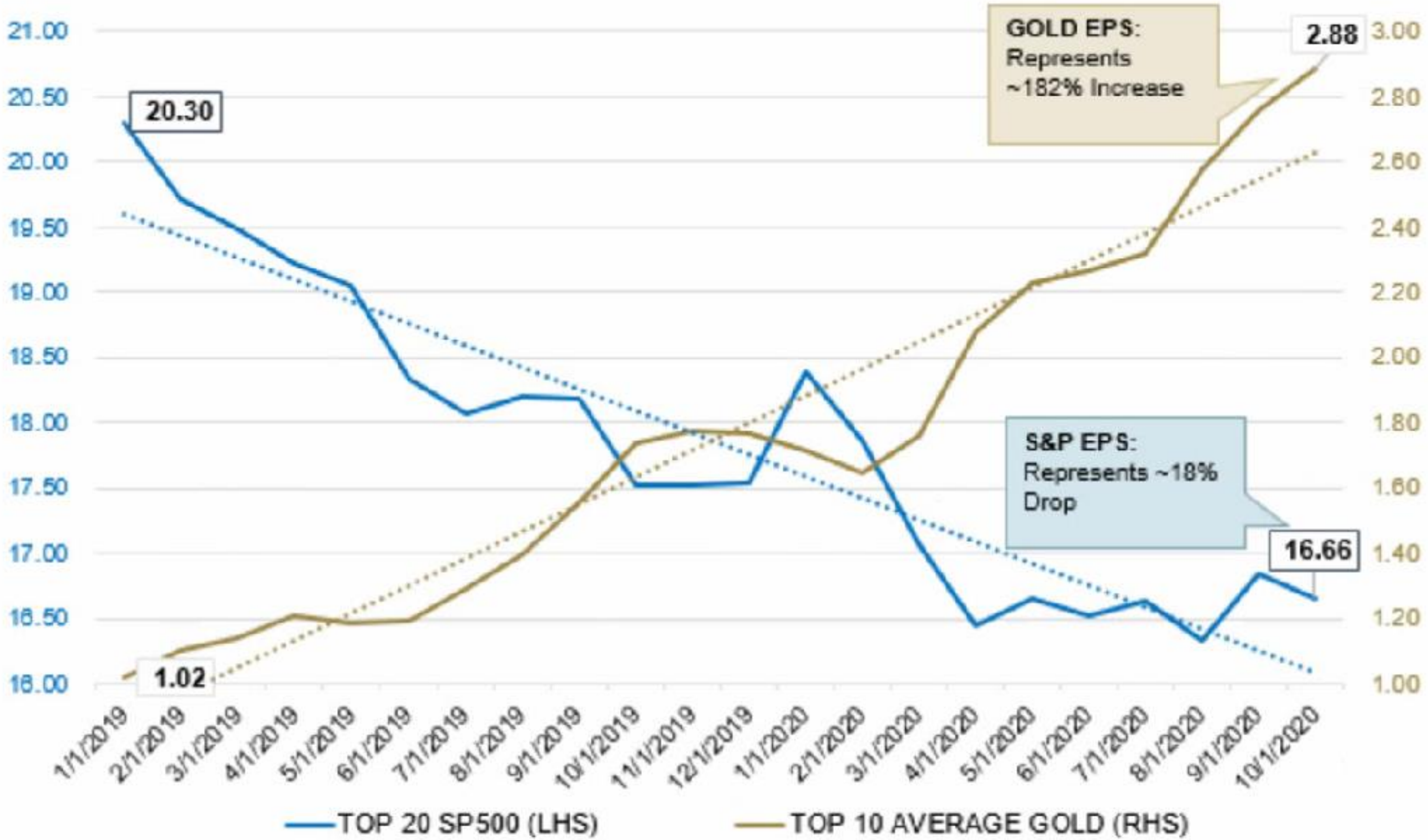
Some Bullion Sellers to Consider

- American Precious Metals Exchange: apmex.com
- SD Bullion: sdbullion.com
- Texas Precious Metals: texmetals.com
- Perhaps your local dealer

Besides the Metal, Other Ways to Invest in Gold (Silver)

Gold Miners EPS Outlook is Very Positive

Earnings Per Share (EPS) estimates are up ~182% for gold miners and down ~18% for the S&P 500



Source: Bloomberg. Data as of 10/31/2020. Based on 1-YR Forward EPS revisions for the top 10 gold mining companies vs. the average for the top 20 S&P 500 companies. You cannot invest directly in an index. Past performance is no guarantee of future results.

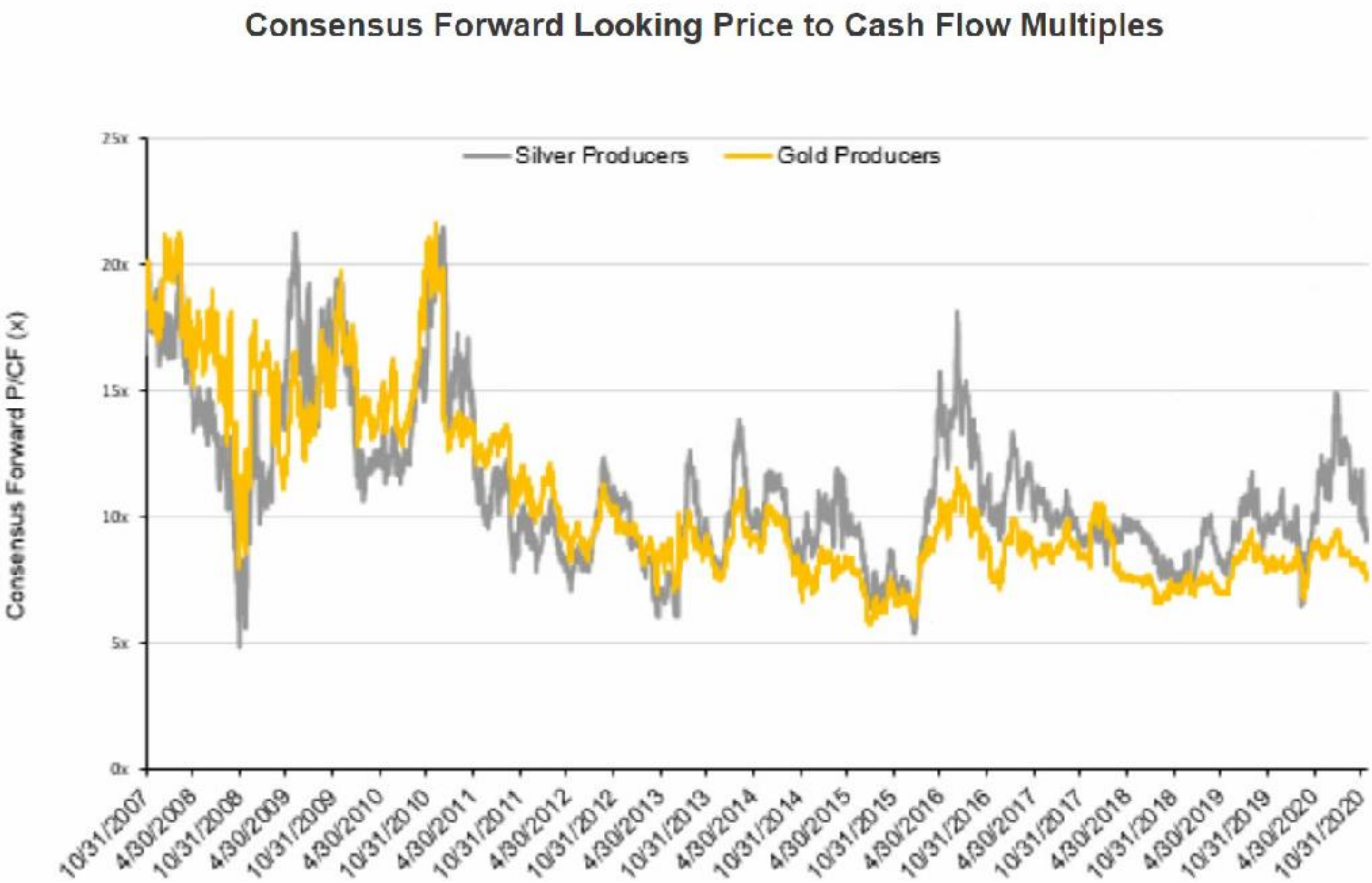
Gold Mining Equities vs. S&P 500 Index: EV/EBITDA

- Gold mining shares represent unprecedented value in comparison to conventional equity alternatives
- Miners trade at EV/EBITDA* of 8.05x compared to the equal-weighted S&P 500 of 14.92x, the widest spread in 10 years

*Enterprise value to earnings before interest, taxes, depreciation and amortization. The EV/EBITDA ratio is a popular metric used as a valuation tool to compare the value of a company, debt included, to the company's cash earnings less non-cash expenses.

Source: Bloomberg. Data as of 10/31/2020. S&P 500 Index is measured by the SPXEVEBT Index and Gold Mining Equities are measured by the GDMEVEBT Index. You cannot invest directly in an index. Past performance is no guarantee of future results.

Gold & Silver Company Valuations



Source: Bloomberg; RBC Capital Markets, data to November 23, 2020.

Leveraged Gold

- Gold Royalty/Streaming Companies
- Gold Mining ETFs
- Gold Mining Companies
- Gold Explorers (including Project Generators)

Questions and Discussion

Gold is a commodity and a monetary metal. As such, the short and medium-term factors that affect price movements are closely related to the current situation of the monetary system and financial markets, primarily depending on the following factors:

- Trend of the US dollar and other fiat currencies
- Opportunity costs (shares, bonds, ...)
- Trend in commodity prices
- Inflation trend and inflation expectations
- Level and trend of real interest rates
- Credit spreads (as an indicator of economic confidence and credit growth)
- Dynamics of the debt situation
- Trends and momentum of monetary growth
- Confidence in central bank policy and the stability of the financial system and economic development
- Confidence in politics and fiscal stability
- Geopolitical environment
- Technical setup (positioning, sentiment, ...)