



# Energy & Environmental Markets Advisory Committee

March 24, 2020 Meeting

The Market Intelligence Branch / Division of Market Oversight

# Disclaimer

The views expressed represent those of staff in MIB, and do not necessarily reflect the views of the Commodity Futures Trading Commission, any of the Commissioners, the Division of Market Oversight, or other staff at the Commission.

Consistent with Section 8(a) of the CEA, this presentation does not contain data or information that would separately disclose the business transactions or market positions of any person and trade secrets or names of customers.

# Market Intelligence Branch (MIB)

- Supports the Commission's mission to promote integrity, resilience and vibrancy in the derivatives markets.
- Monitors the health and structure of U.S. futures, options, swaps and the various over the counter (OTC) markets.
- Highlight emerging trends.
- Identifies potential systemic risks.

# Scope of MIB Monitoring

MIB monitors characteristics of and developments in derivative markets.

- Volume and activity
- Liquidity, order book depth, price, and implied volatility
- Circuit breakers, limit moves (up/down), velocity triggers
- Term structures, swap spreads, index activities
- Convergence and spreads (cash vs. physical delivery markets)
- Open interest, risk positioning
- Market participant positioning and activity
- Related market activities
- News, industry and government reports, fundamentals, and data

# Products

MIB monitors over one hundred different commodities, indices, financial derivatives markets.

## Agriculture, Nutrition & Forestry

Grains	Livestock
Corn	Live Cattle
Wheat	Feeder Cattle
Oats	Lean Hogs
Rice	
Oil Seeds	Dairy
Canola	Milk
Palm Oil	Butter
Soybeans	Cheese
Soy Meal	
Soy Oil	
Softs	Fiber
Cocoa	Softwood
Sugar	Hardwood
Coffee	Rough Wood
Frozen OJ	Cotton

## Energy & Natural Resources

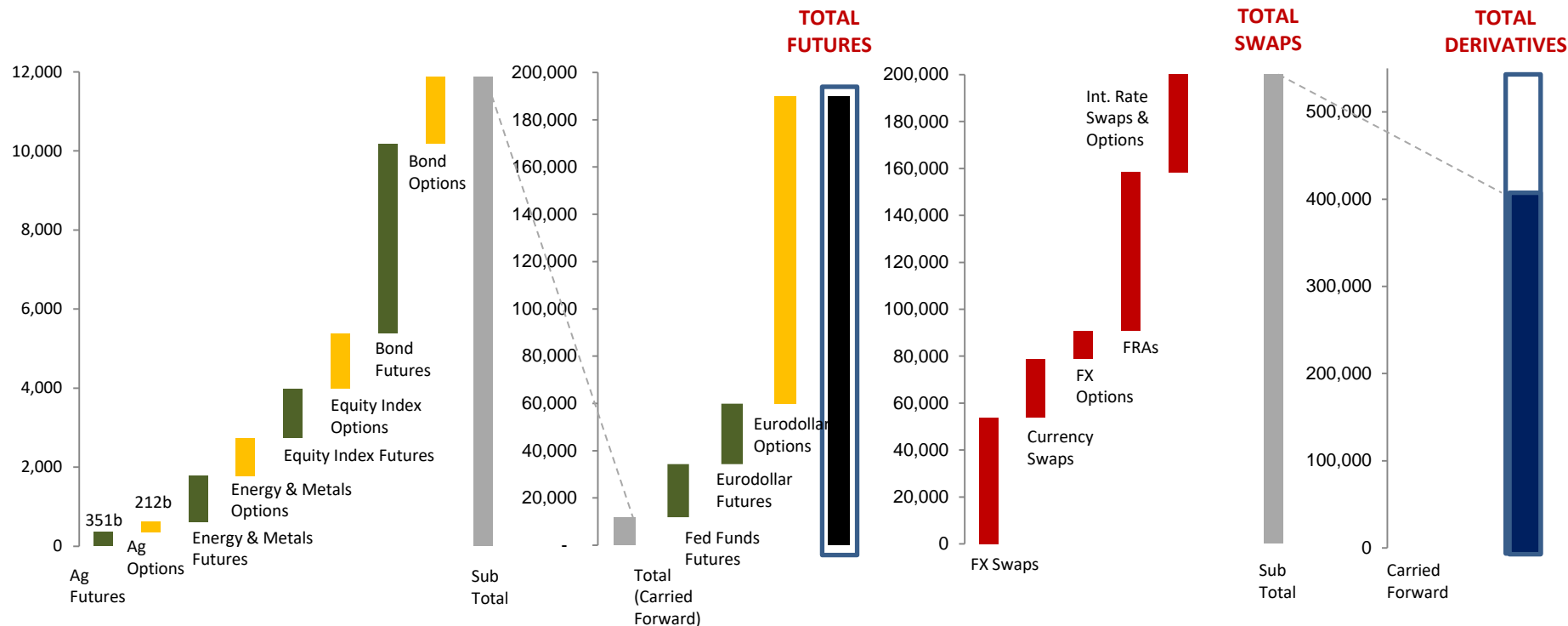
Petroleum	Precious	Environment
WTI	Gold	Weather
Brent	Silver	Emissions
Jet Fuel	Platinum	Pollution
Diesel	Palladium	Carbon
Gasoline	Base Metals	Sulfur
Heating Oil	Copper	
Naphtha	Aluminum	Freight
Fuel Oil	Zinc	Dry Freight
Bio Diesel	Iron Ore	Wet Freight
	Scrap Metal	Trucking
Chemicals	Power & Gas	Fertilizer
Ethylene	Natural Gas	Urea
Propylene	LNG	DAP
Methanol	Electricity	UAN
Poly-Propylene	Solar / Other	

## Banking & Finance

Interest Rate	Equities	Credit
Fed Funds	S&P 500	CDX IG
SOFR	Dow Jones	HY Index
T Bonds/Notes	Russell	Crossover
OIS	Nasdaq	High Vol
Fed Funds	VIX	CMBX
Swaps	GSCI	RMBX
Vanilla Rates	FX	ABSX
Swaptions	FX Futures	Synthetic CDOs
Caps / Floors	FX Forwards	Synthetic CLOs
Exotics	NDF	Tranches
Rate Baskets	FX Options	Credit Baskets
Basis	NDOs	Lev Loan Index
Sovereign CDS	Retail FX	TRS Swaps
Various	DXY	
	EM Index	

# U.S. Derivatives Markets

The U.S. derivatives markets are approximately \$350- \$400 trillion across futures, options and swaps (in swaps equivalents).

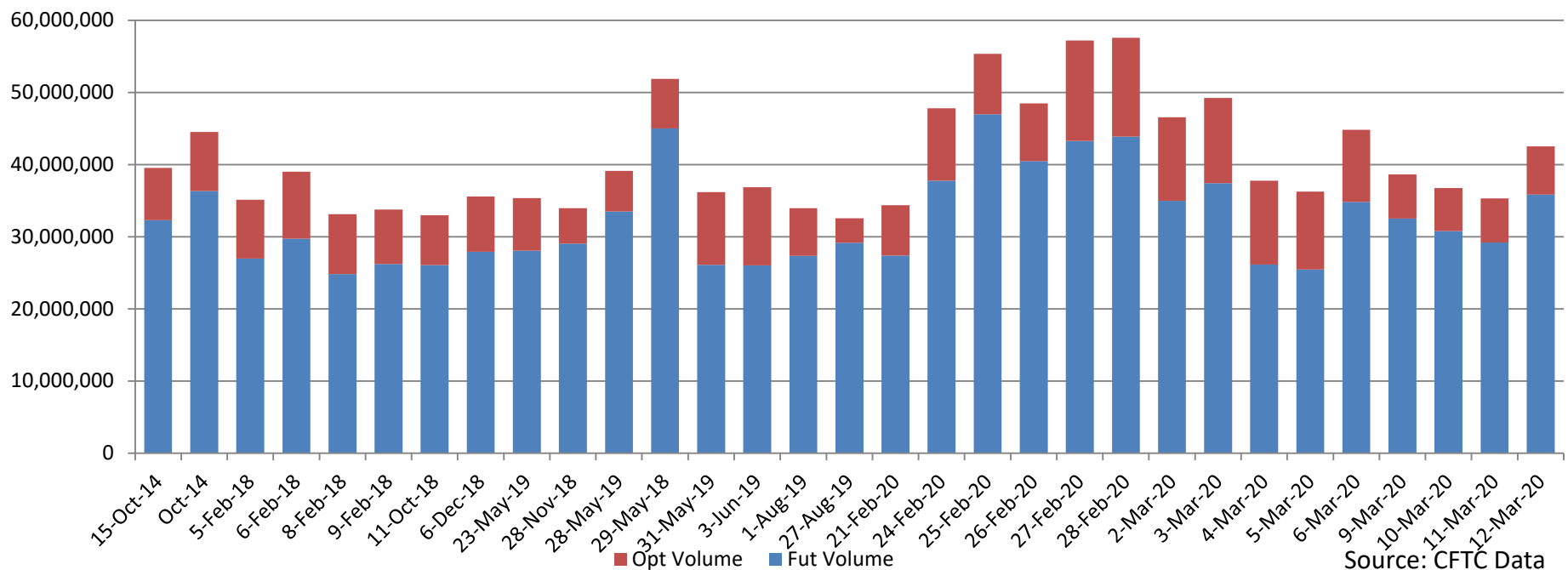


The notional value of open interest in futures and options in 2008 was an estimated \$30 trillion. Today, it is approximately \$90 trillion.

Futures contract volumes have reached nearly 60 million since February 20<sup>th</sup>, with significant totals each day.

## U.S. Futures & Option Contracts

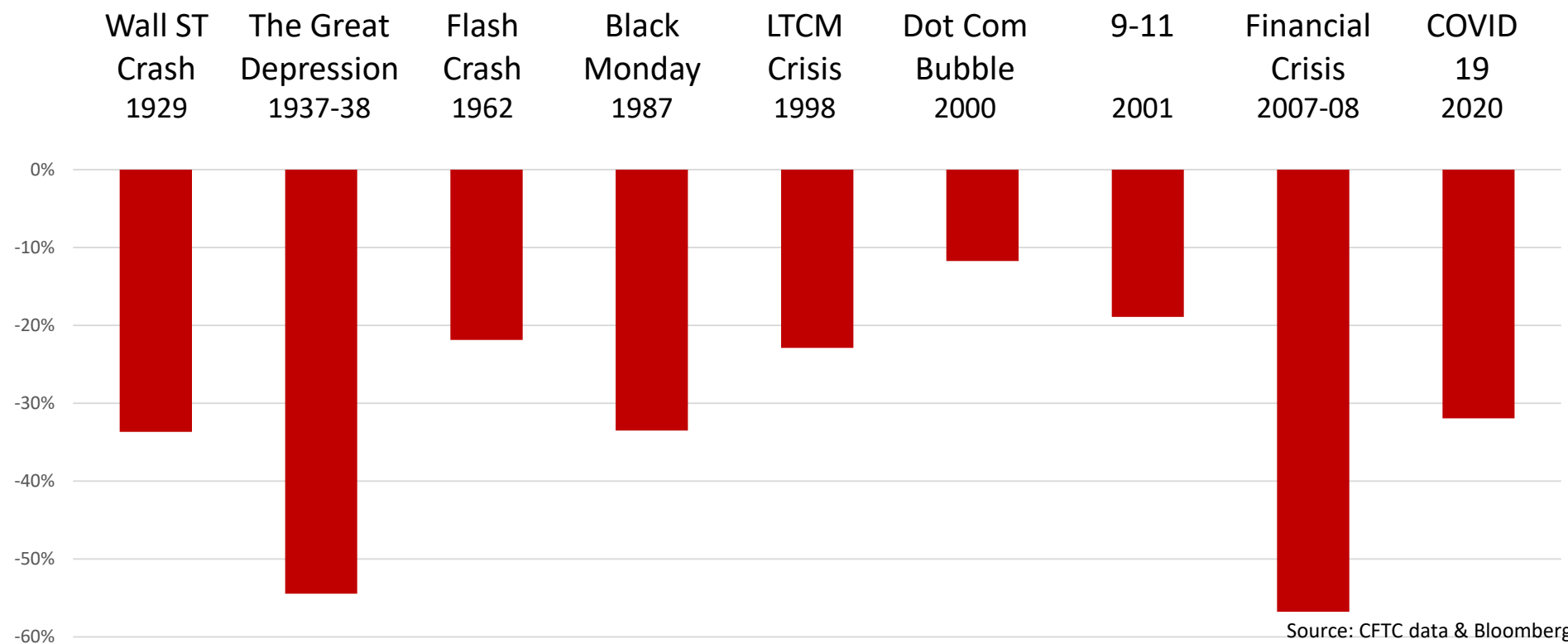
Current and previous highest contract volume dates



# Equity Index Declines

The velocity of the COVID-19 market sell-off is one of the most extreme in equity markets over the past one hundred years.

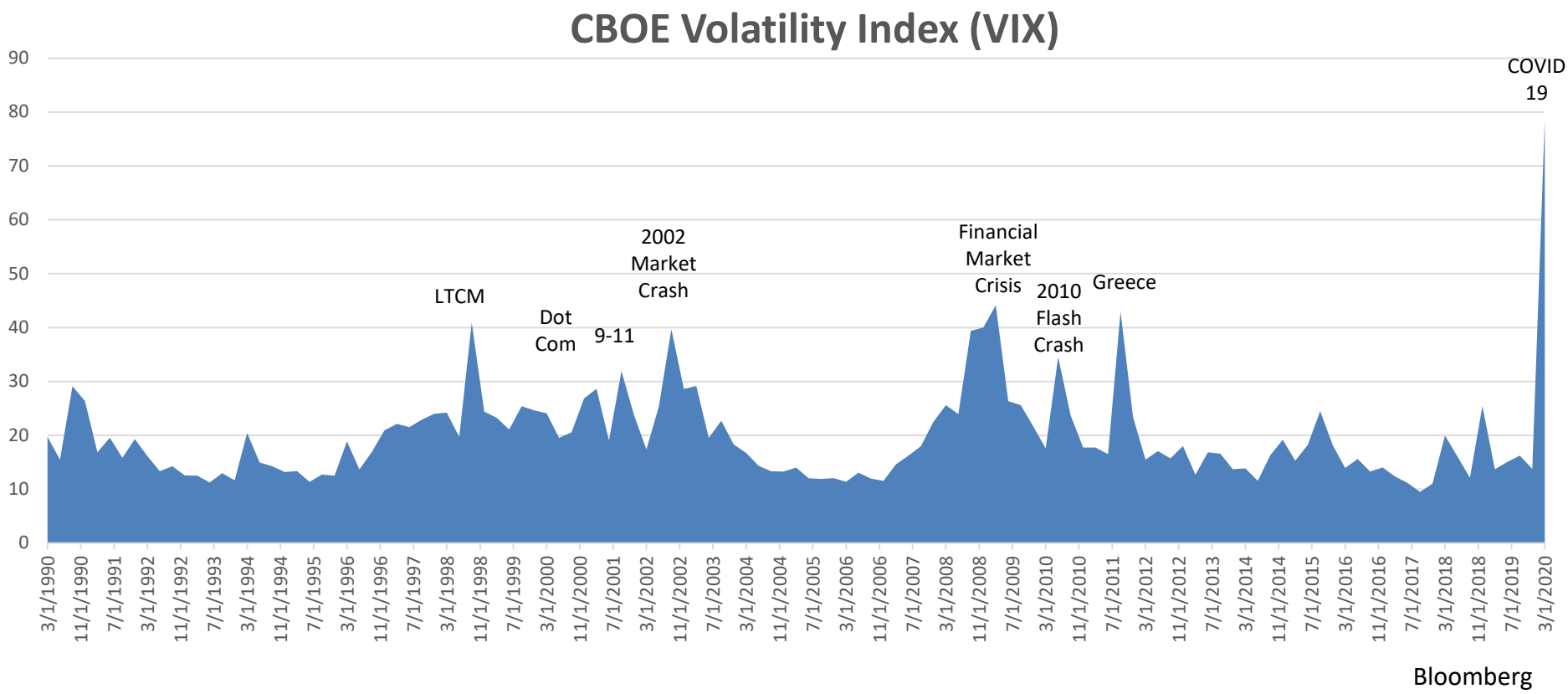
## The U.S. Equity S&P 500 Index





# Equity Volatility

Equity volatility during the current crisis is the highest observed in the past 30 years.



# U.S. Government Bonds

U.S. government bond yields reached their lowest levels in history as domestic and international investors seek safety.

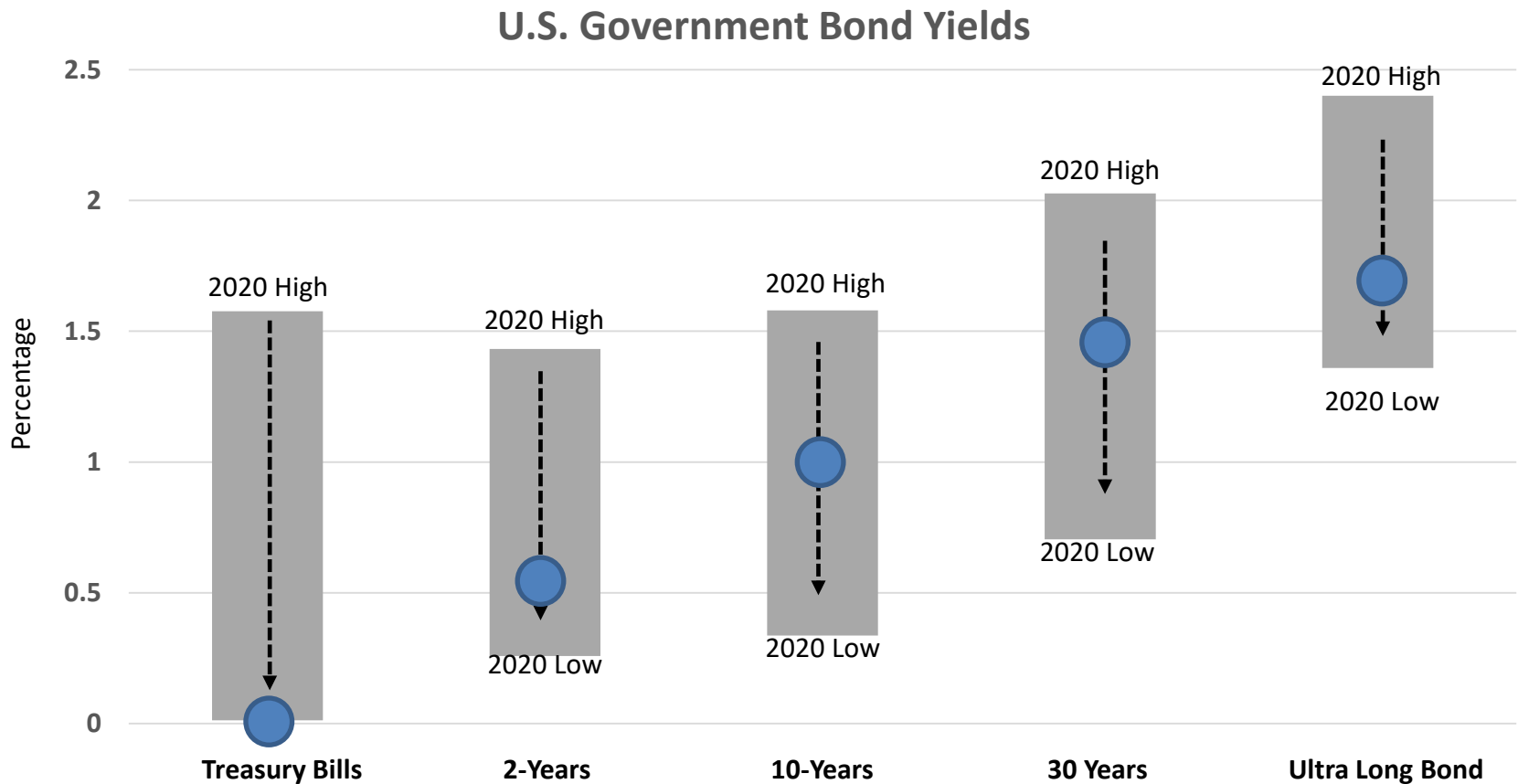
## Implied Yields for 10 and 30 year Treasury Bond Futures



CFTC data

# U.S. Government Bonds

The whipsaw price action registered the largest down move in history and the steepest climb of yields within a period of seven days.

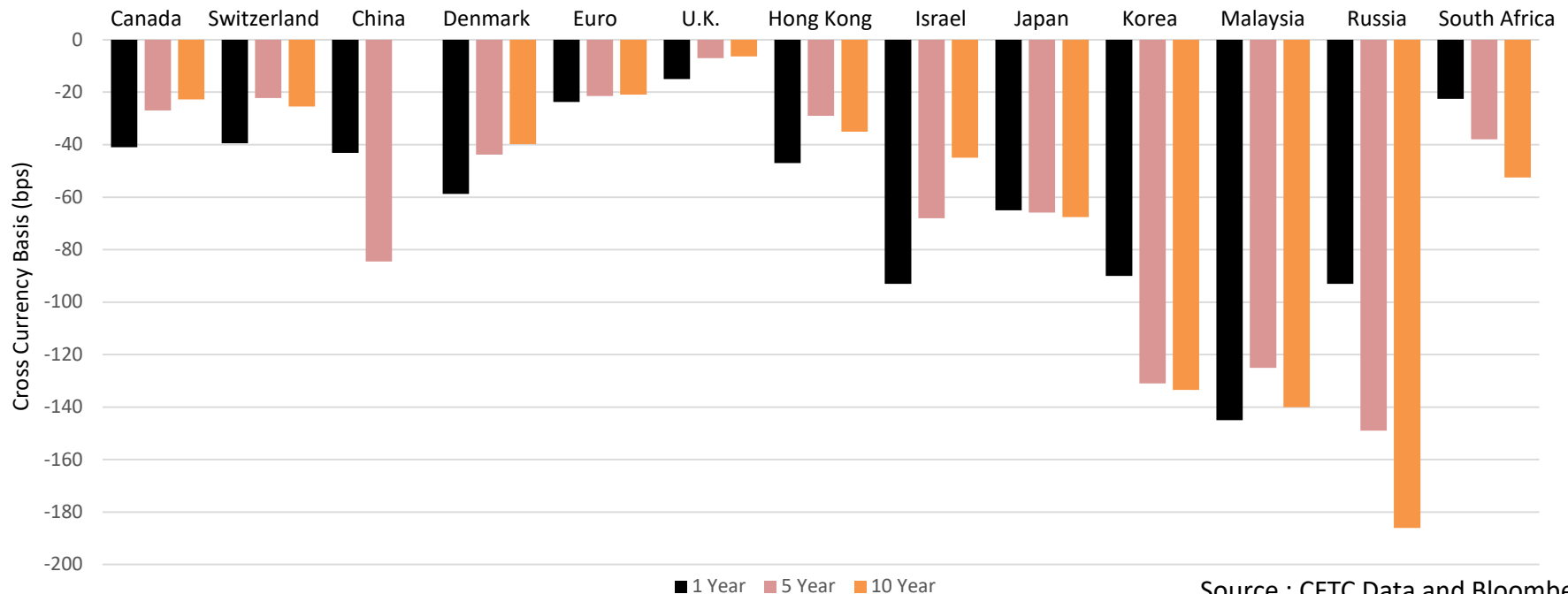


Source : CFTC Data and Bloomberg

# U.S. Dollar Demand

The international demand for U.S. dollars affected cross-currency basis spreads and retreated as the Fed announced increased swap facilities to major nations.

## Cross Currency Basis Swaps Spreads (USD Libor)



Source : CFTC Data and Bloomberg

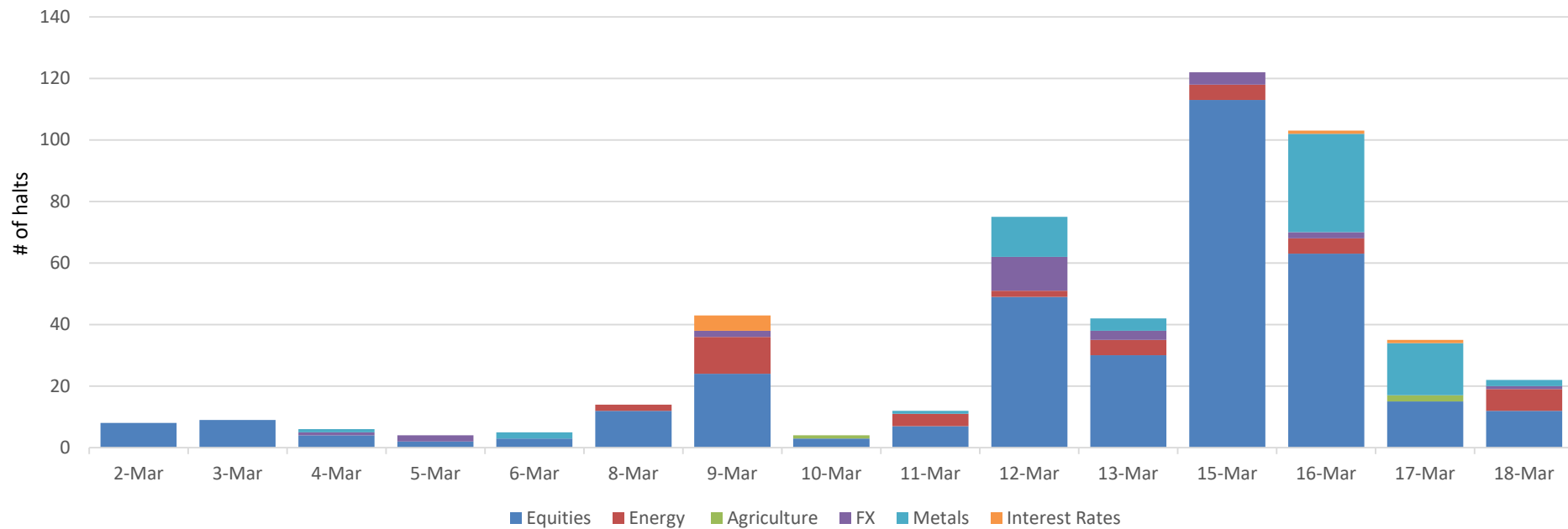
# Liquidity

- Futures liquidity and top-of-book depth have declined and spreads have widened.
- Swap spreads have expanded and liquidity has diminished.
- Foreign exchange and NDF markets have wider spreads, lower liquidity.
- Heavy activity in credit derivatives swaps with wider spreads.

# Market Halts

Four level-one market-wide circuit breaker halts occurred in the equity markets (first since 1987), along with an increase in other market control measures, such as limit-up/limit-down bands and velocity-logic triggers.

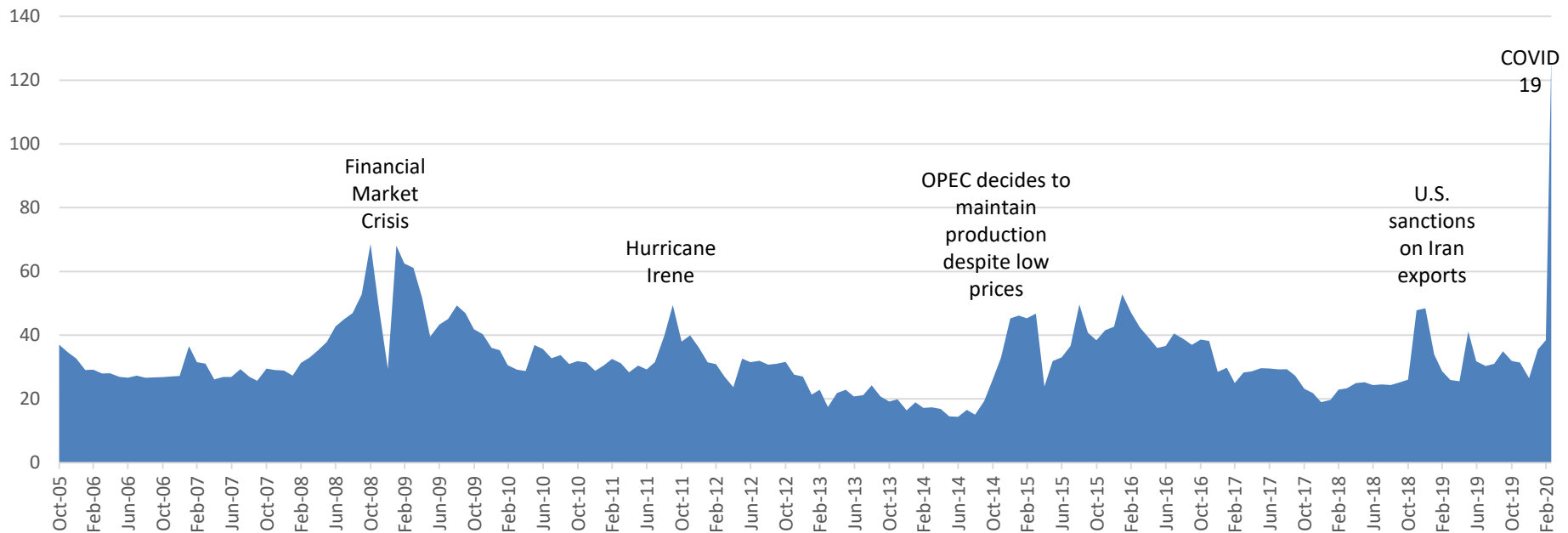
## Market Halts



# Crude Oil Implied Volatility

In March, crude oil 3-month implied volatility spiked to its highest level in more than a decade as WTI hit an 18-year low on news of a breakdown in OPEC negotiations.

## The 3 month implied volatility

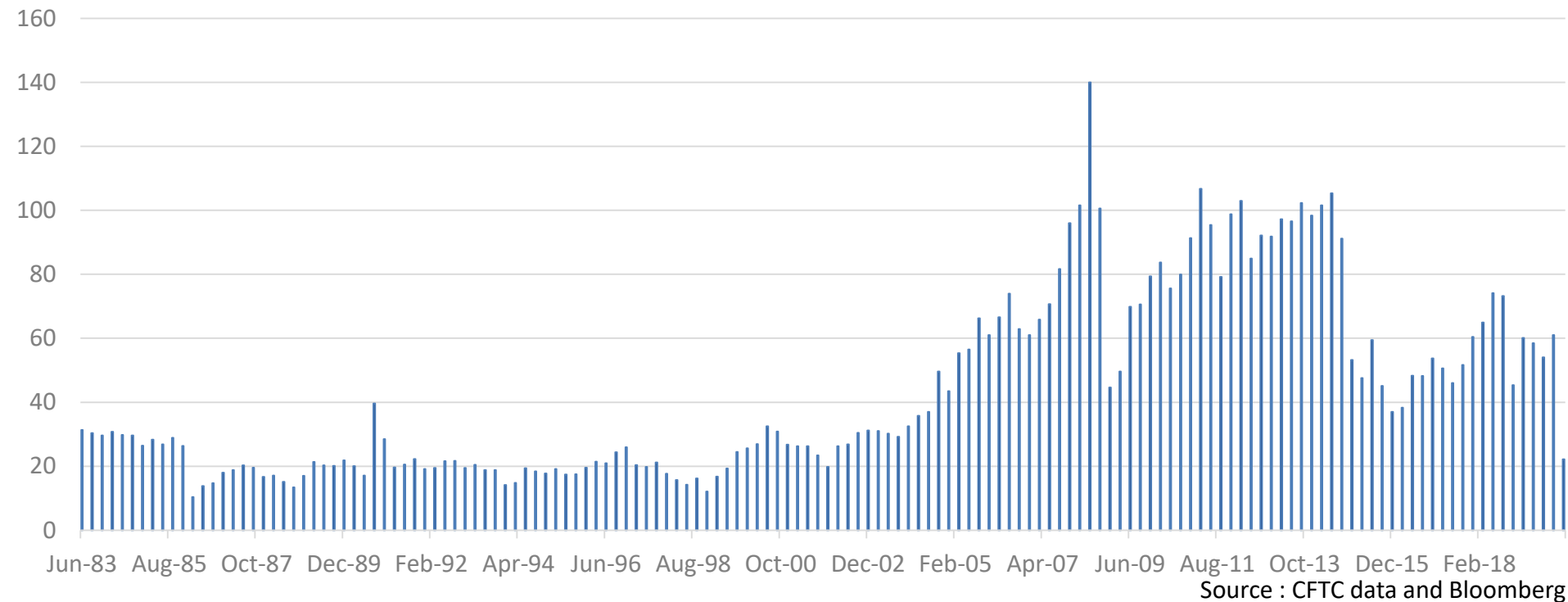


Source : Bloomberg

# Crude Oil Price Collapse

On March 9, 2020, WTI and global oil prices had the largest single day drop in percentage terms since the Gulf War in 1991.

## U.S. Crude WTI Spot Prices - Cushing

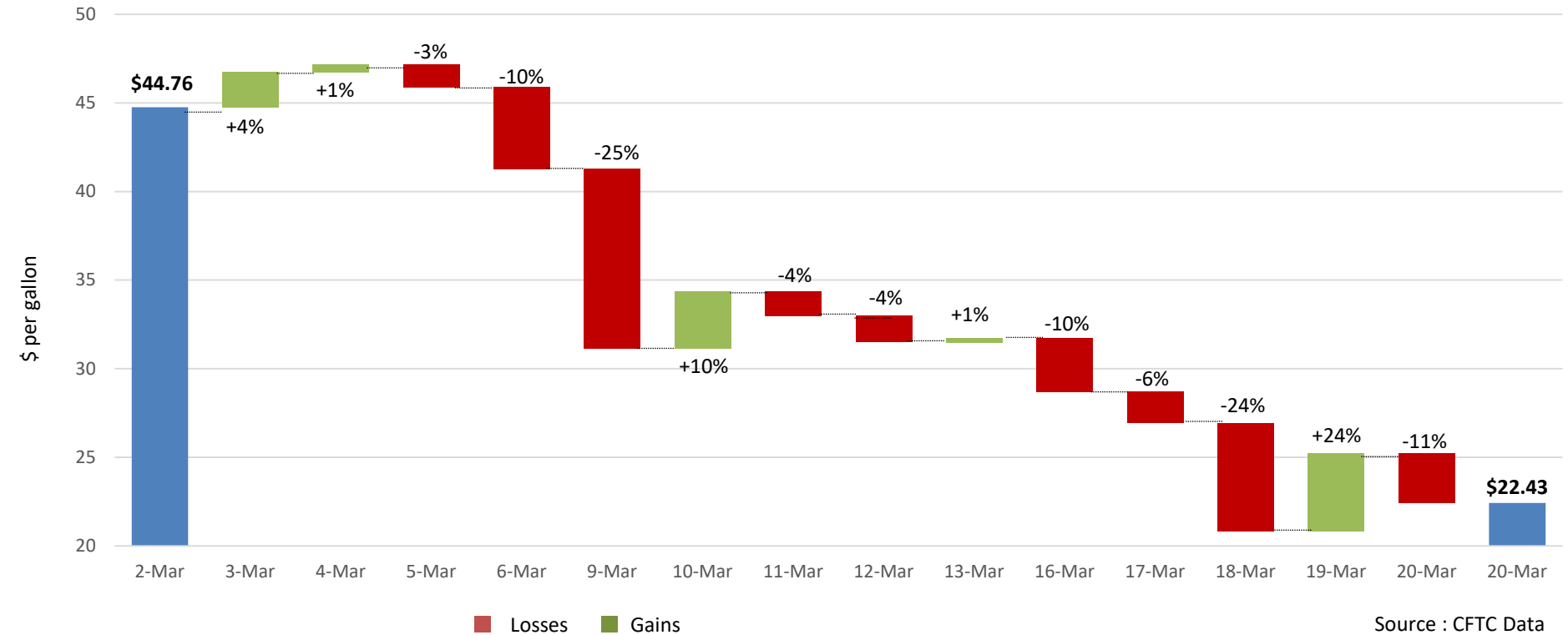




# Crude Oil Daily Price Moves

Price volatility has moved oil prices by almost \$22.50 per barrel (p/b) during this month.

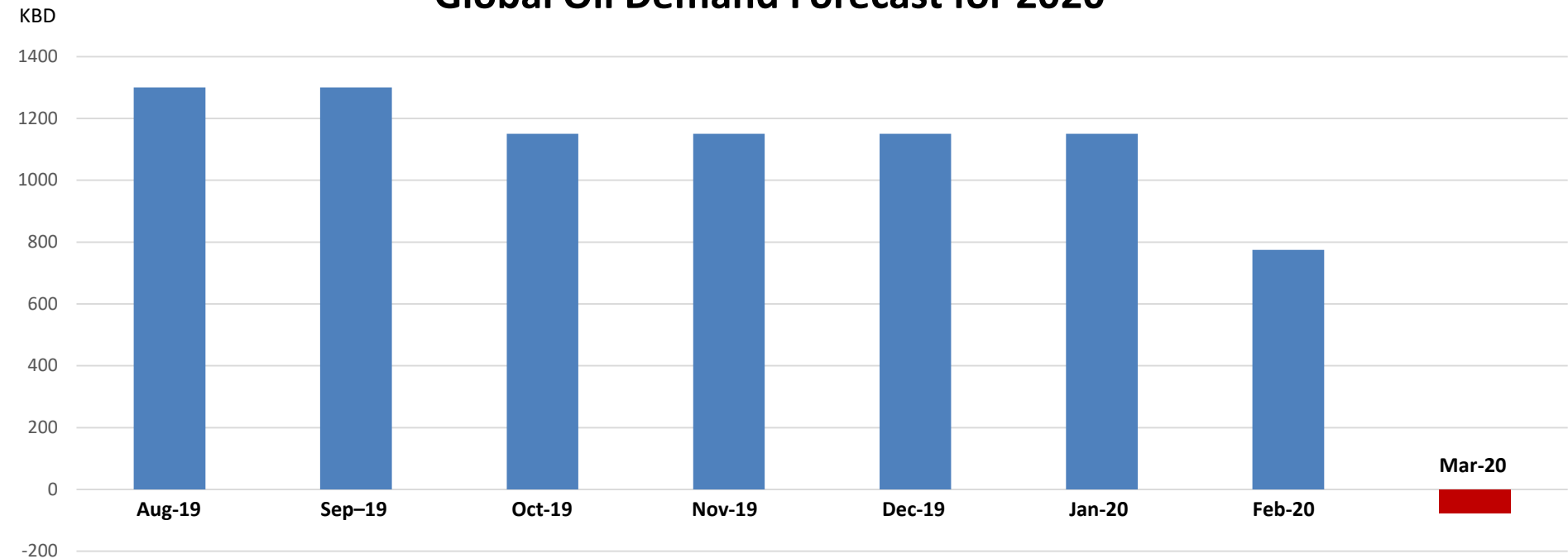
## WTI Futures – Daily Price Moves



# Crude Oil Demand

COVID-19 and the global lockdown have all but removed demand for oil, at least in the short term.

## Global Oil Demand Forecast for 2020

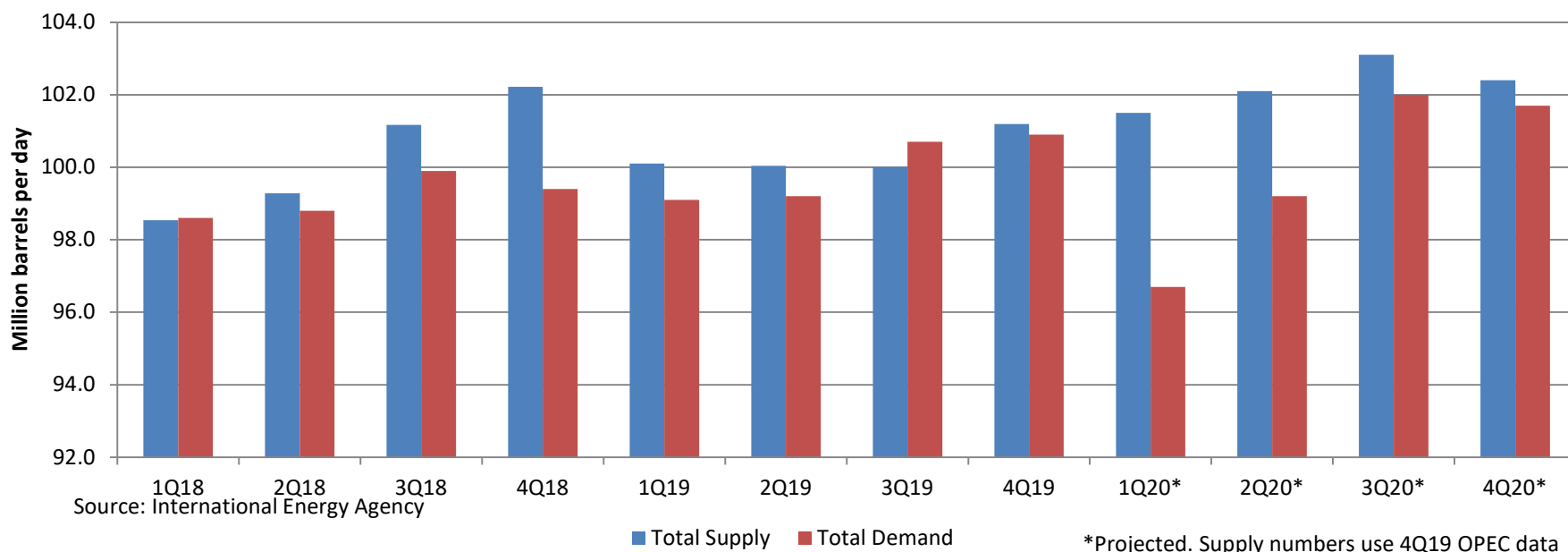


Source : International Energy Agency

# Crude Oil Forecast

Supply and demand forecasts showed an oversupplied market even before OPEC+ failed to reach an agreement. Additional barrels from Saudi Arabia, U.A.E., and other OPEC+ members in 2Q 2020 will only exacerbate the global supply glut.

## Global Supply and Demand Forecast

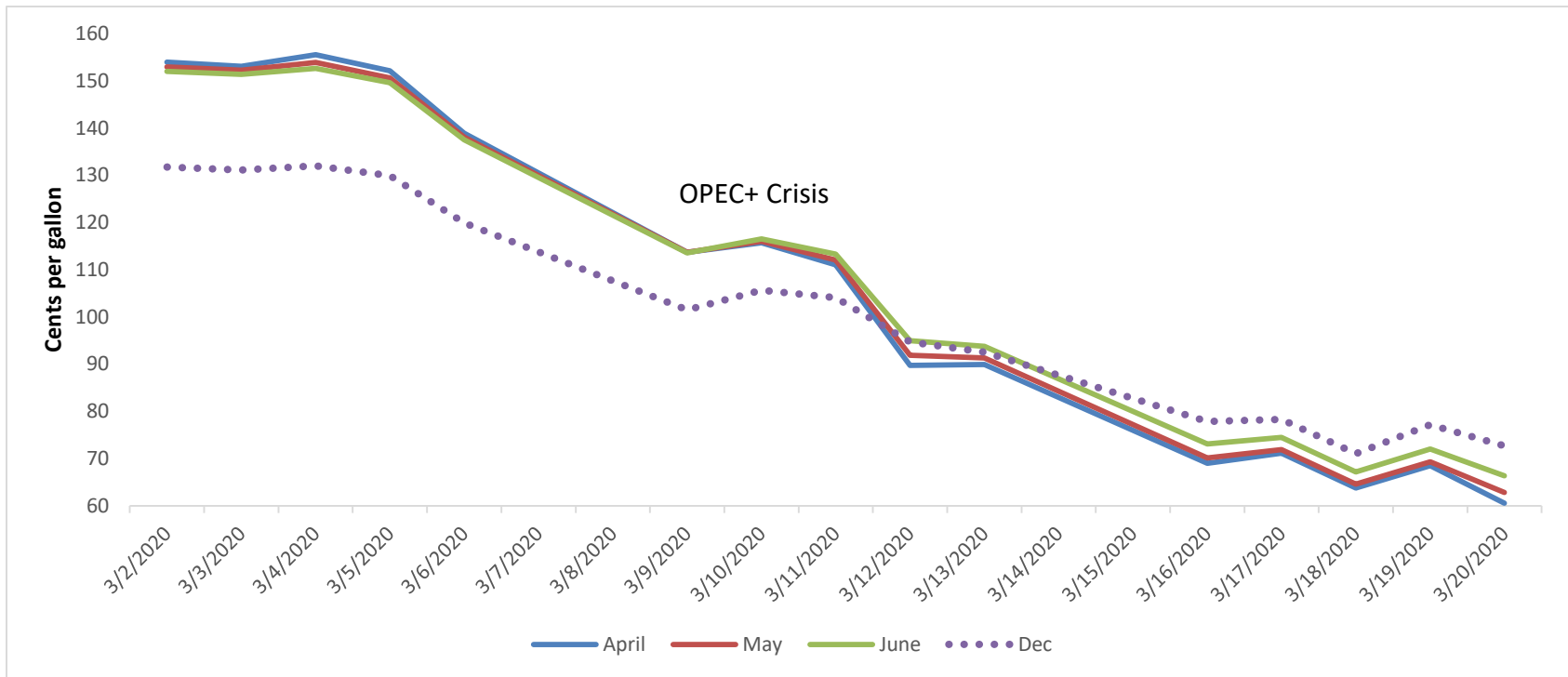


# Stalemate

- Asia's largest importers (China, India, Japan, South Korea) recovering from COVID-19. Demand expected to be low next quarter.
- Russia and Saudi Arabia have the lowest oil production costs (estimated around \$10 p/b).
- Both countries rely heavily on oil revenues. Russian fiscal breakeven estimated to be \$40 p/b. Saudi Arabia's fiscal breakeven estimated to be near \$80 p/b.
- Russia is unlikely to submit to any external pressure at least until the proposed mid-April constitutional change is completed.
- The U.S. oil industry has higher production costs, estimated to be around \$30 p/b, directly linked to U.S. corporate well-being.

While the Gasoline term-structure is in contango, Gasoline prices are not expected to increase materially until the end of 2020.

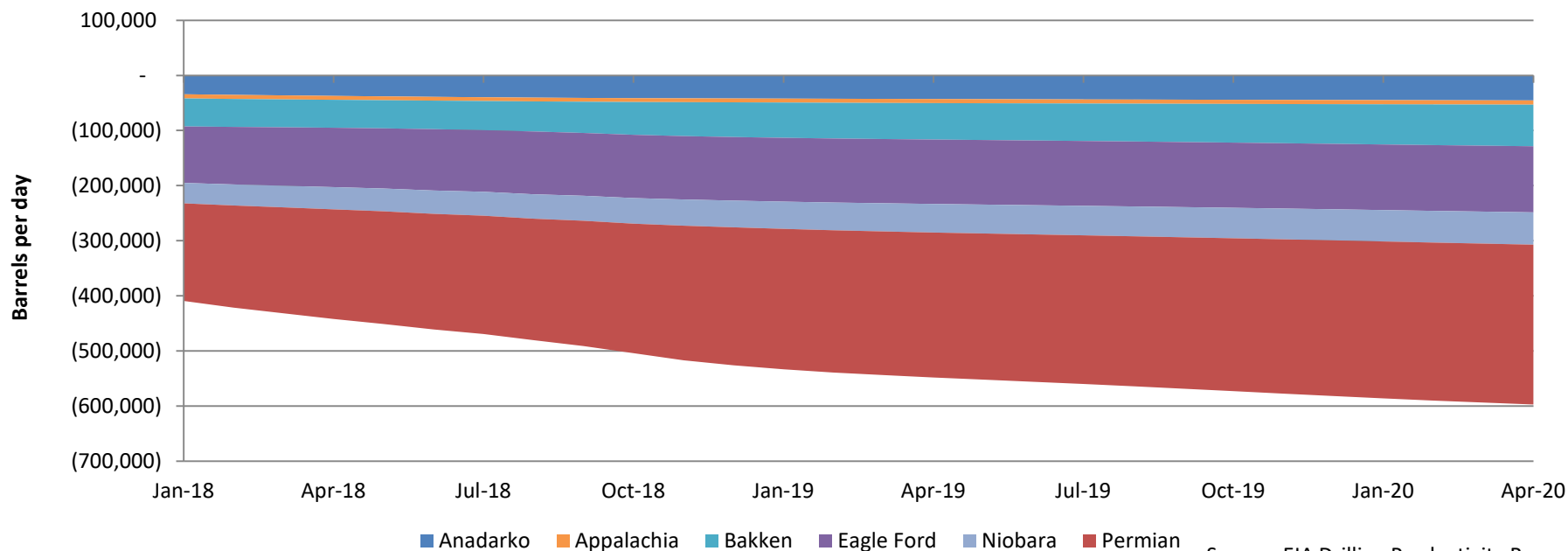
## RBOB Gasoline Term Structure April, May, June and December Contracts



# Crude Oil U.S Production

Tight oil wells have high decline rates, requiring significant new drilling to keep overall production up. Average breakeven costs for new wells in many tight oil basins are well above current market prices. Absent price appreciation, domestic crude production may fall in the coming months.

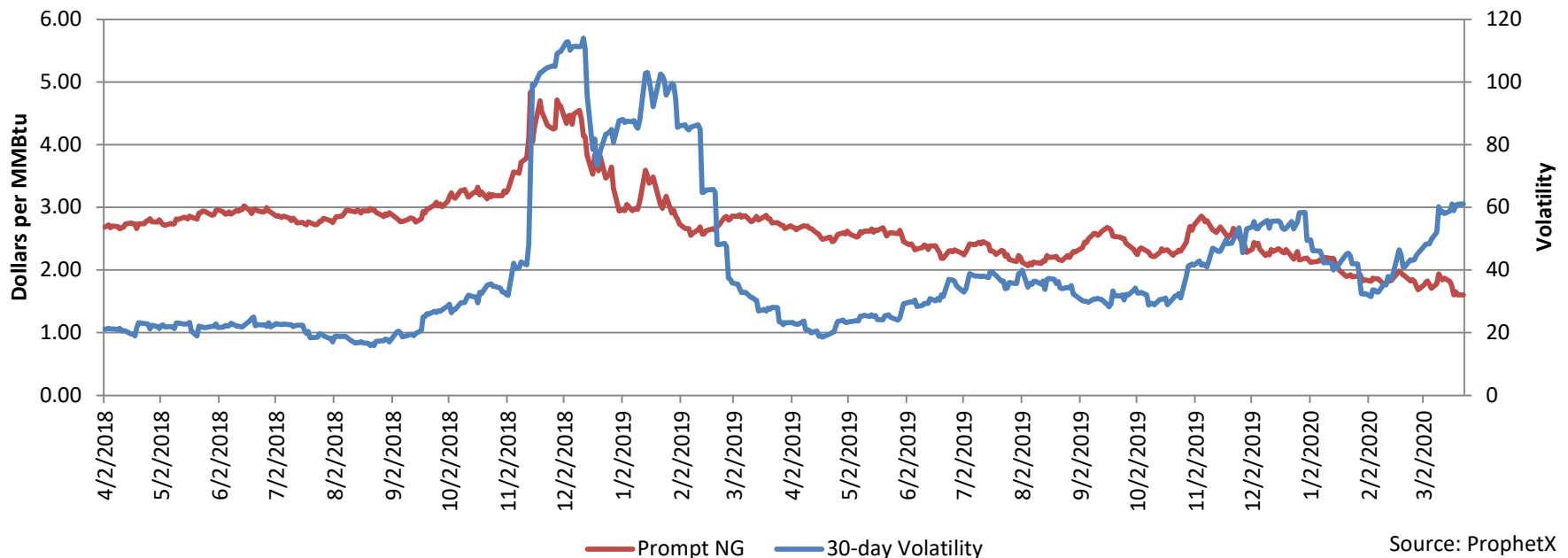
### Legacy oil well production, select areas



# Natural Gas Volatility

Natural gas volatility has doubled in the past two months, but pales in comparison to previous weather-related events. Futures prices are at a 25-year low.

### Prompt NG futures prices v. 30-day volatility

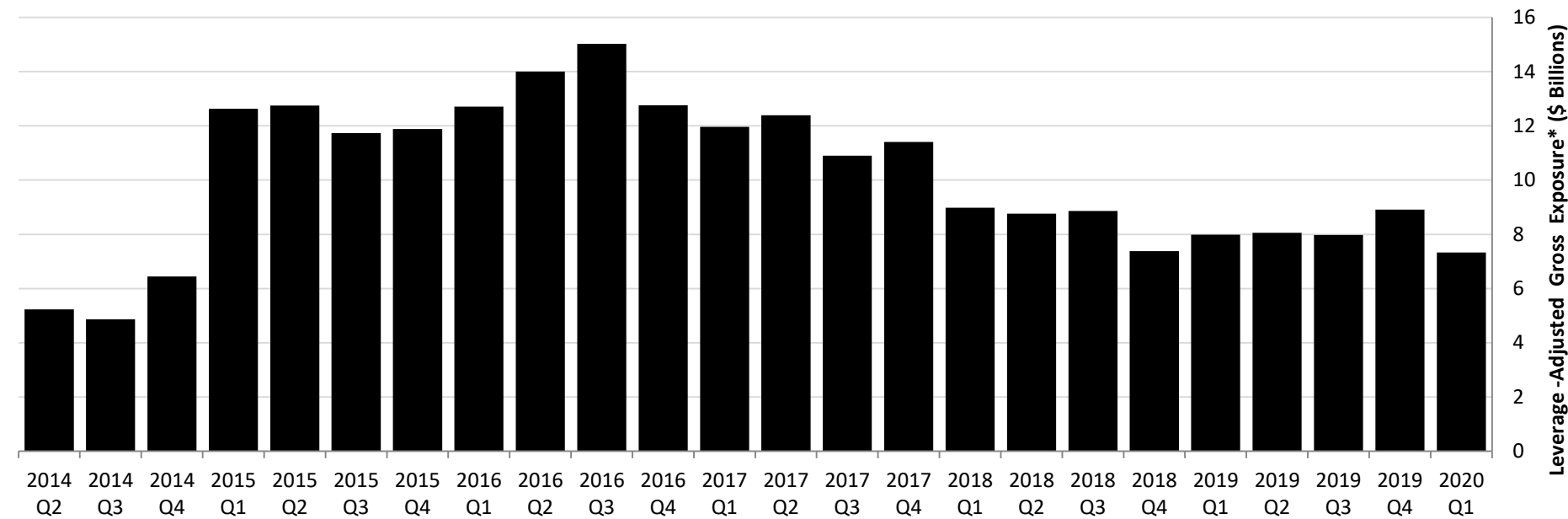


Source: ProphetX

# ETF Markets

The growth of Exchange Traded Funds (ETFs) and Exchange Traded Notes (ETNs) markets has been a significant development since the past financial crisis.

Energy ETF Leverage-Adjusted Gross Exposure



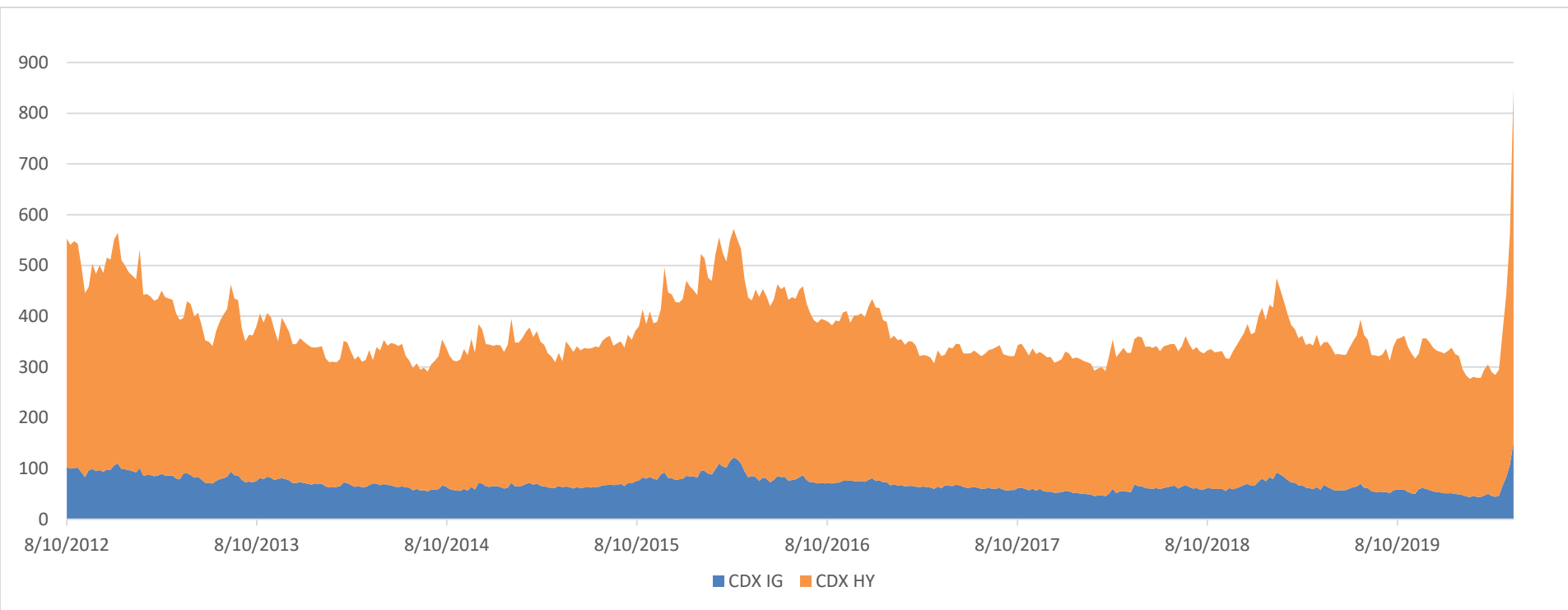
\*Gross exposures, calculated in absolute terms (long/short neutral), of energy-only ETF population

Source: Bloomberg, CFTC



CDS spreads on the CDX High Yield and Investment Grade indices have widened significantly to 850 and 150 bps, respectively (from 280 bps and 43 bps on Feb 12, 2020).

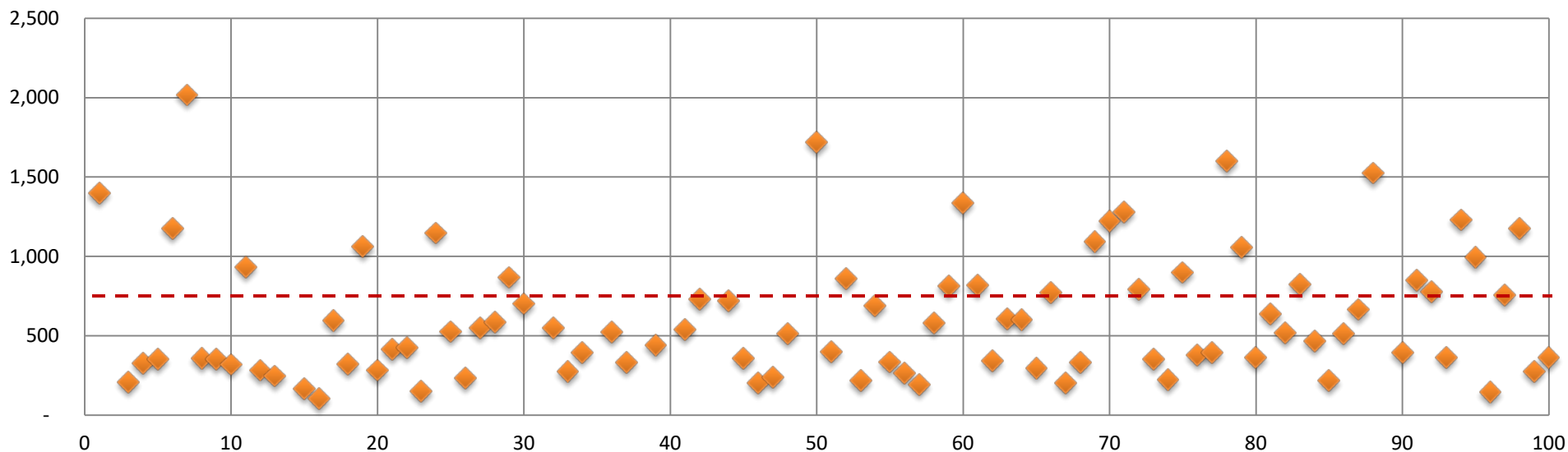
**CDX.NA.HY.33 12/24 and CDX.NA.IG.34 06/25**



# Credit Markets

A number of reference entities in the CDX NA.HY Index are trading above the current index spread of ~850 bps, with most energy companies trading at a spread well above it. There are ten entities with spreads above 2500 bps, of which six are energy companies.

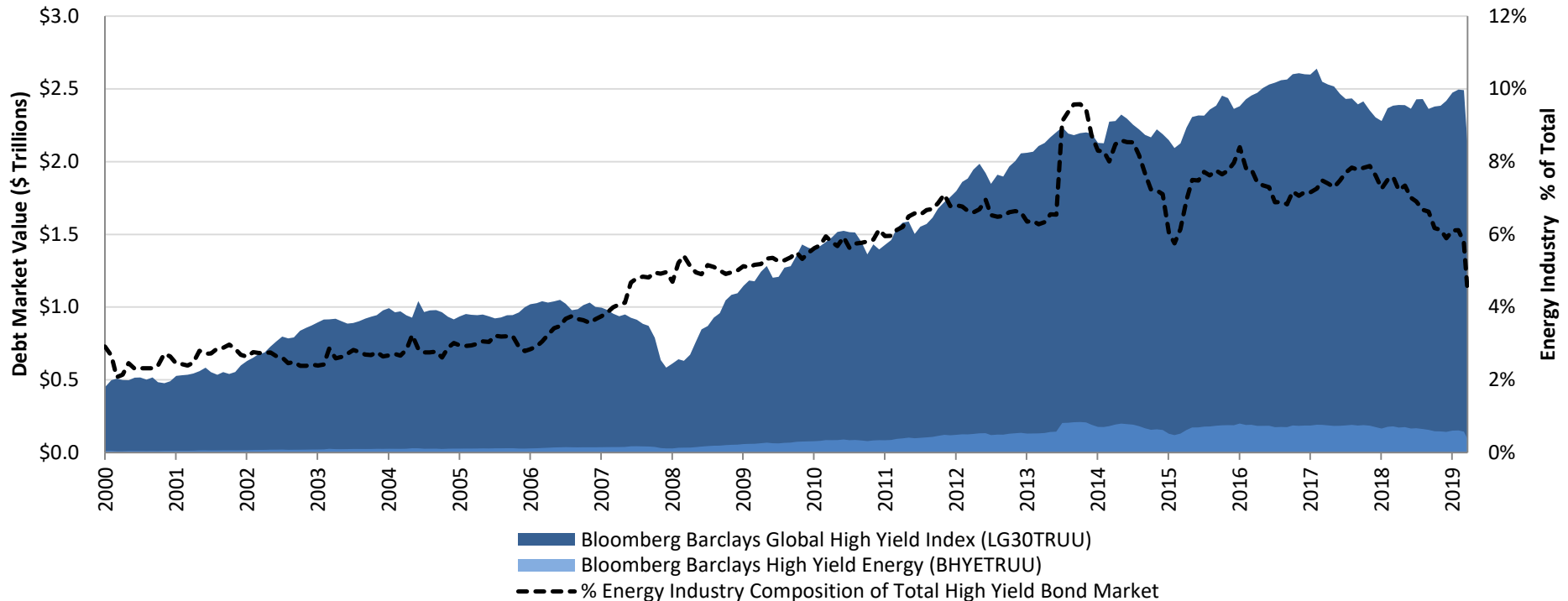
**CDX.NA.HY.33 12/24 – Reference Entities**



# High Yield Corporate Bonds

The energy sector represents a sizeable portion of the ~ \$2.5 trillion high yield bond market. Airline, leisure, and hotel sectors, also impacted by COVID-19, represented a sizeable portion of the market.

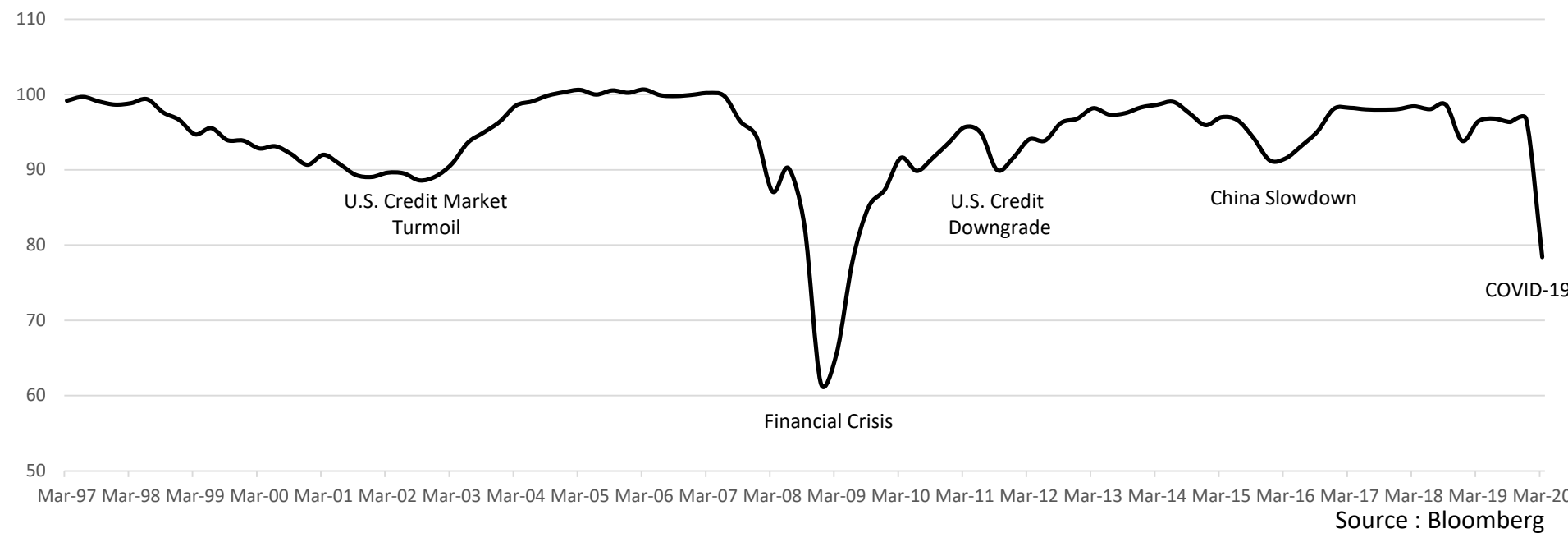
High Yield Bond Market Value



# Leveraged Loans

The leveraged loan market has grown to over \$1 trillion. The current environment has noticeably impacted leveraged loan market prices.

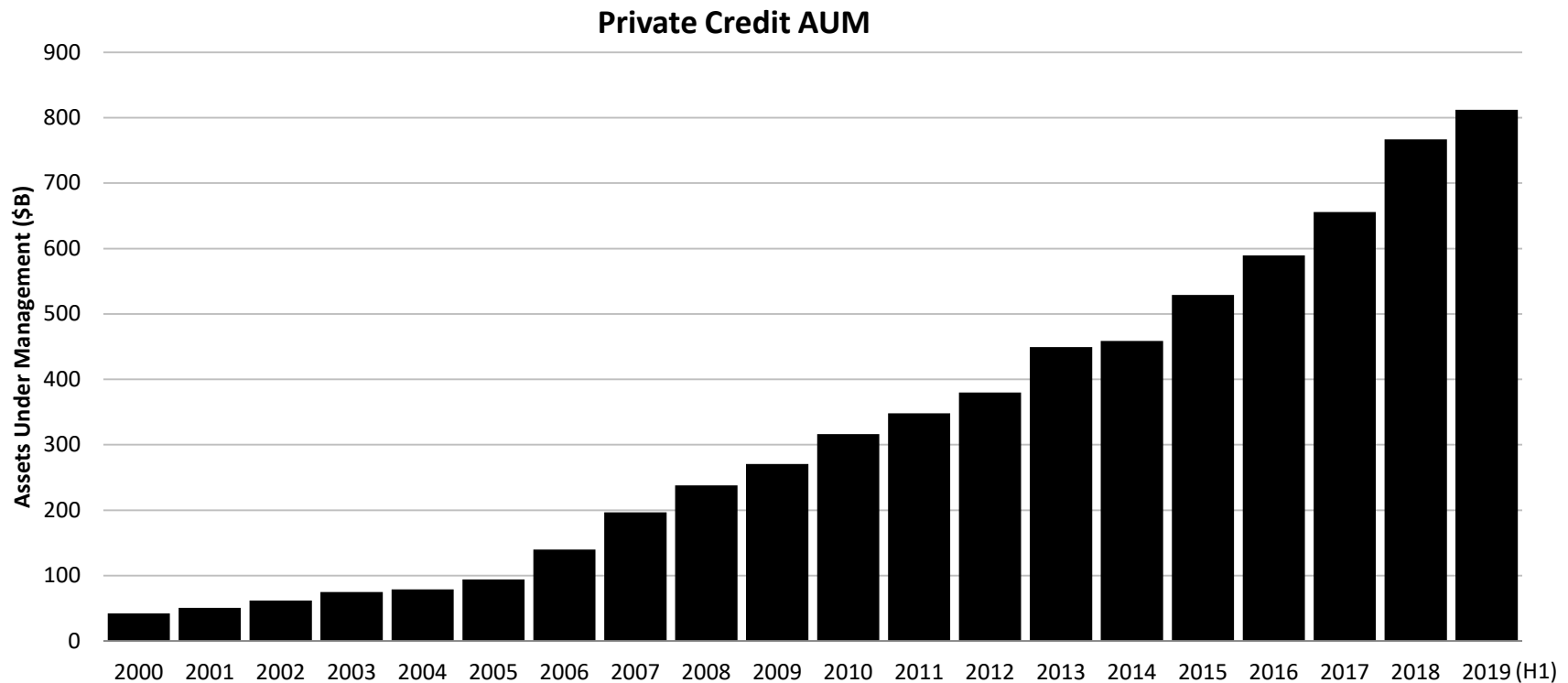
## S&P / LSTA U.S. Leveraged Loan Index



Source : Bloomberg

# Private Credit

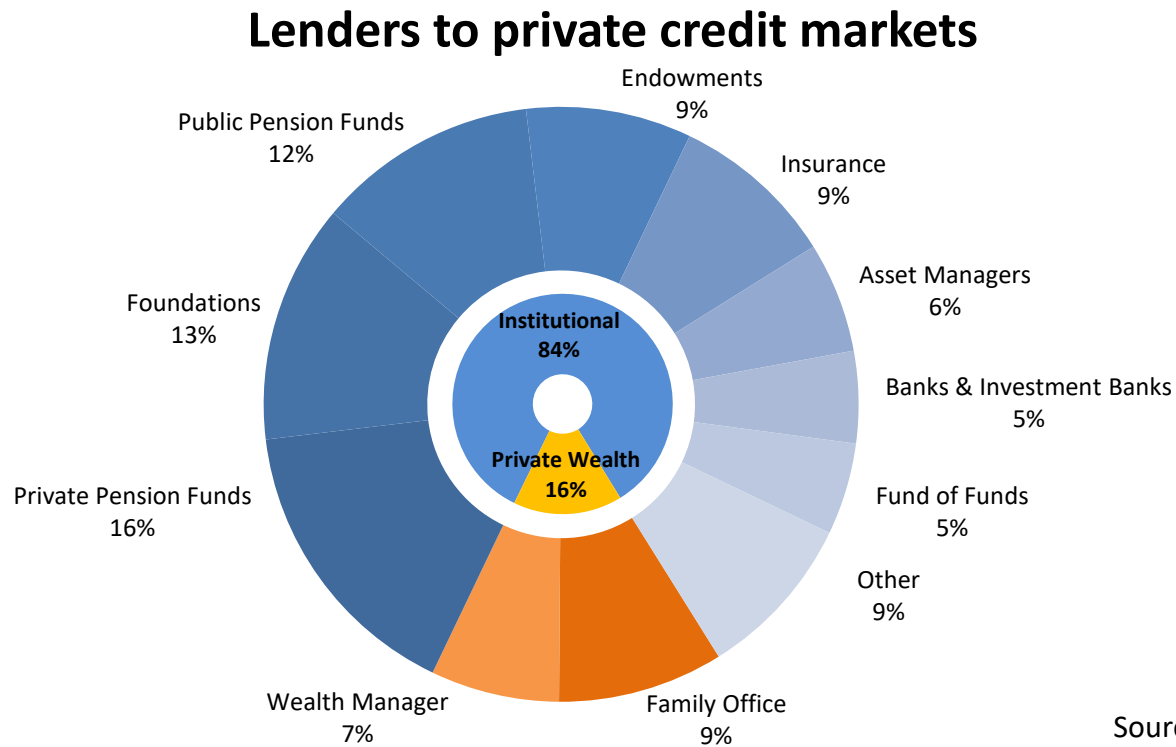
The private credit markets rapidly expanded in recent years as large banks reduced exposure to smaller and riskier borrowers. As of June, 2019, Assets Under Management (AUM) was around \$812 billion.



Source: Bloomberg/Prequin

# Private Credit

Investor composition of the private credit markets is quite diverse with broad representation from both institutional and private wealth funds actively participating.



Source: Bloomberg/Prequin

# Conclusions

- The derivatives markets appear resilient in the face of lower liquidity and historic volatility and volume.
- Economic threats remain elevated.
- MIB will continue to monitor and evaluate.

# QUESTIONS?