J.P.Morgan

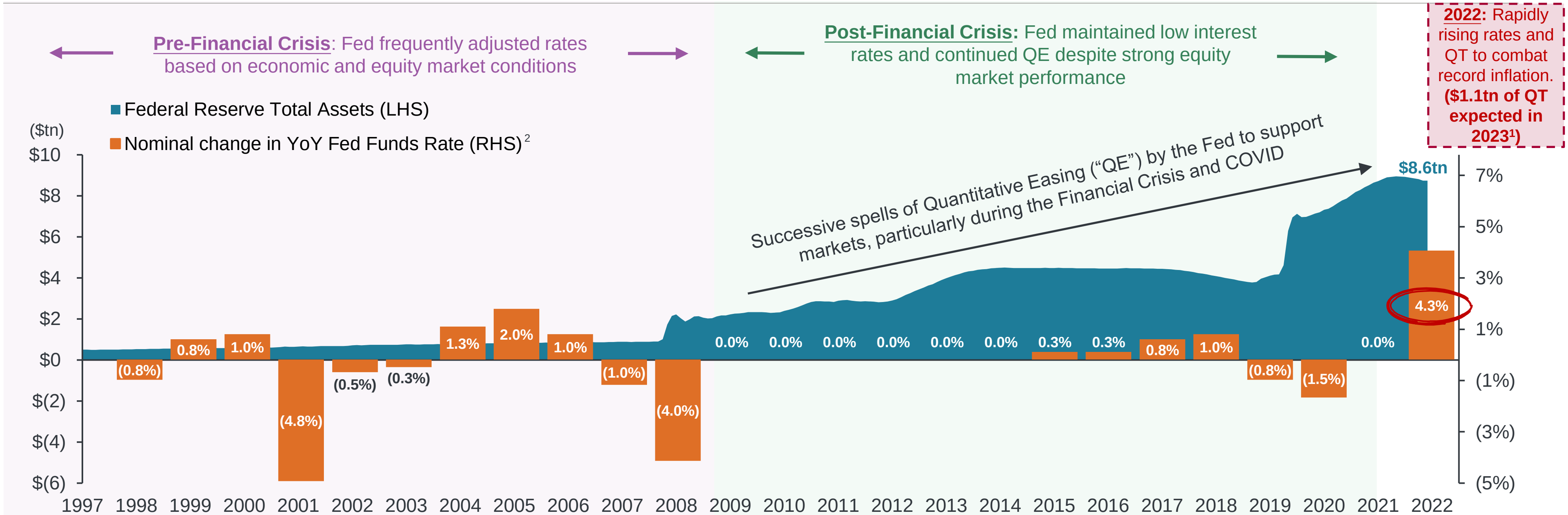
10 Striking Facts for 2023

January 2023

Corporate Finance Advisory

1 Fed to Market: “Party’s over”

THE FED HAS BEGUN TO UNWIND AN UNPRECEDENTED AMOUNT OF STIMULUS



S&P 500 Average NTM P/E	20.6x	23.6x	22.7x	20.8x	17.9x	16.7x	16.6x	15.2x	14.4x	14.8x	12.5x	13.6x	13.0x	12.2x	12.5x	14.1x	15.5x	16.5x	16.6x	17.8x	16.6x	16.8x	20.4x	21.6x	17.7x

Long term average NTM P/E: 16.9x (1998 – 2022)

12/31/2022 NTM P/E 16.9x

2022 saw the largest annual Fed Funds rate hike in modern Fed history

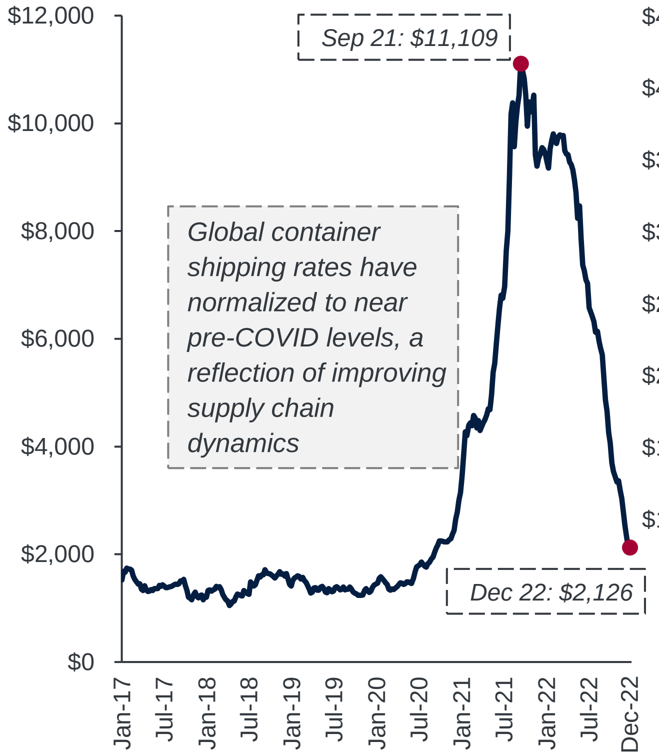
Why it matters?

- **In 2022, the Federal Reserve pushed the largest shift in rate policy in decades, bringing an end to an unprecedented period of accommodative policy and stimulus**
- **Fed actions have supported a steady increase in P/E multiples in the years following the Financial Crisis**
- **Market multiples remain at or above long-term averages despite the Fed’s shift away from supporting asset prices and an uncertain macro backdrop, potentially exposing equity markets to incremental downside risk**

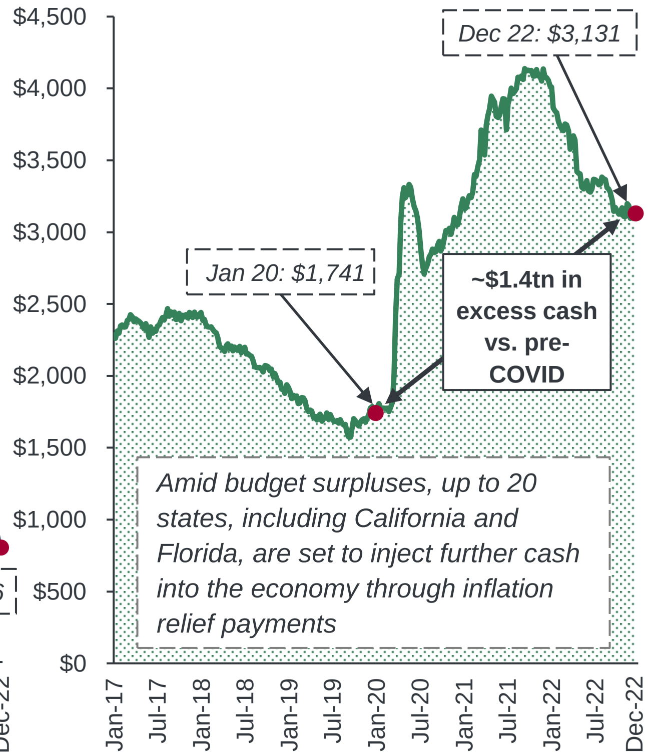
Source: Bloomberg, FactSet, Federal Reserve; Market data as of 12/31/2022; [1] Based on $95bn monthly tapering affirmed by the Fed since Sept 2022; [2] Defined as nominal % change in upper bound of year end fed funds rate over the previous year

2 Inflationary risks likely to persist

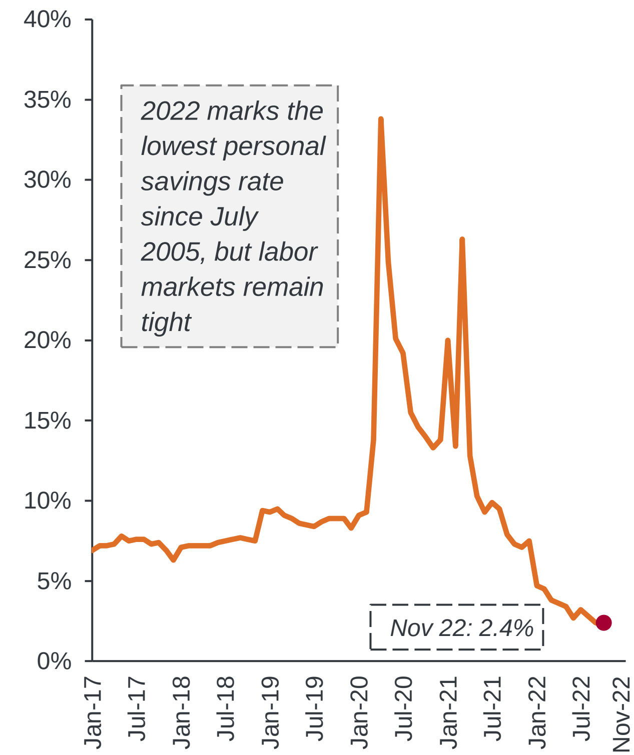
GLOBAL CONTAINER FREIGHT INDEX[1]



U.S. COMMERCIAL BANK CASH[2] ($BN)



U.S. PERSONAL SAVING RATE[3] (%)



Consumers and businesses still hold ~$1.4tn in excess savings accumulated during COVID

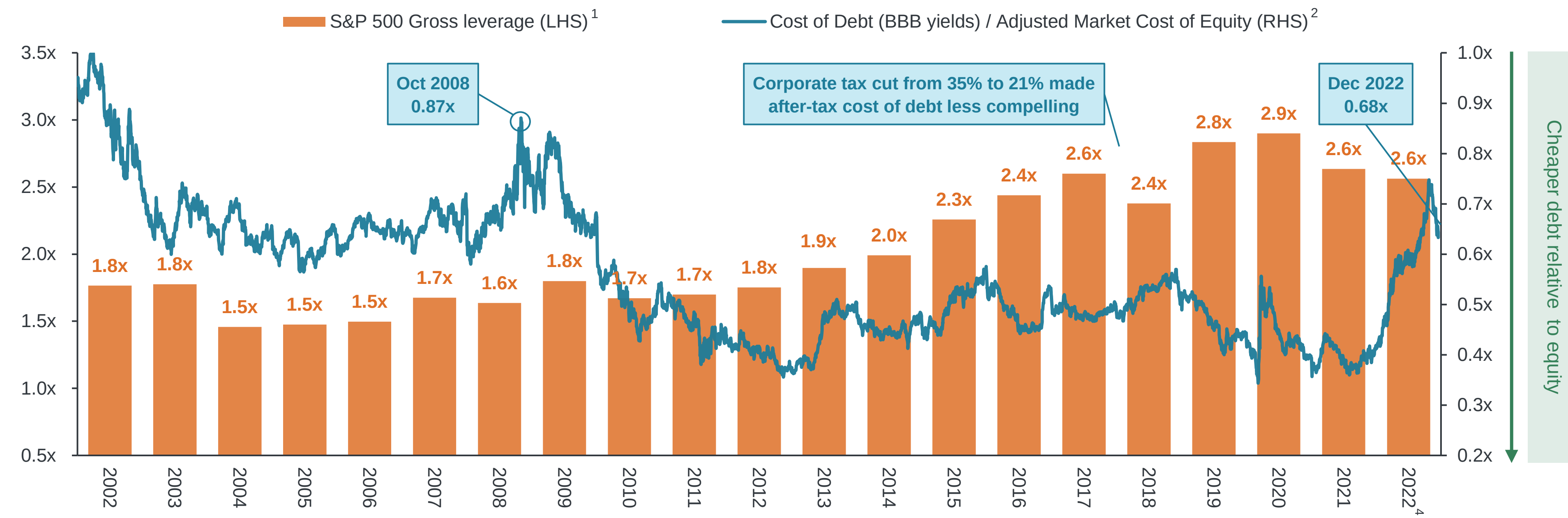
Why it matters?

- **Investments in supply chain resilience should remain a priority despite some normalization indicated by declining freight costs – onshoring and "friendshoring" (partially as a result of IRA and CHIPS Act) likely to remain themes**
- **The ability of corporates to pass on ongoing price increases to consumers without demand destruction remains to be seen**
- **Trajectory of household savings and employment trends key drivers of expected inflation**

Source: Bloomberg, FRED, Federal Reserve Bank of St. Louis as of 12/31/2022
[1] Reflects weekly data from Freightos Baltic Index, based on weighted average of 12 underlying regional route indices (40ft container shipping rates); [2] Indicates seasonally adjusted weekly data for all commercial banks; [3] Indicates personal saving as a % of disposable personal income; Personal saving is equal to personal income less personal outlays and personal taxes

3 Rising rates change the capital structure paradigm

COST OF DEBT VS. MARKET COST OF EQUITY IN 2022



5.5%	4.4%	2.6%	2.9%	2.6%	2.3%	4.6%	6.4%	3.7%	2.9%	3.4%	2.1%	1.7%	3.4%	4.3%	2.6%	2.4%	3.2%	4.2%	2.2%	3.3%

IG vs HY yield differential[3]
Current differential: 3.6% | Long term average: 3.4% (2008 – 2022)

The cost of debt relative to equity is the highest since 2009

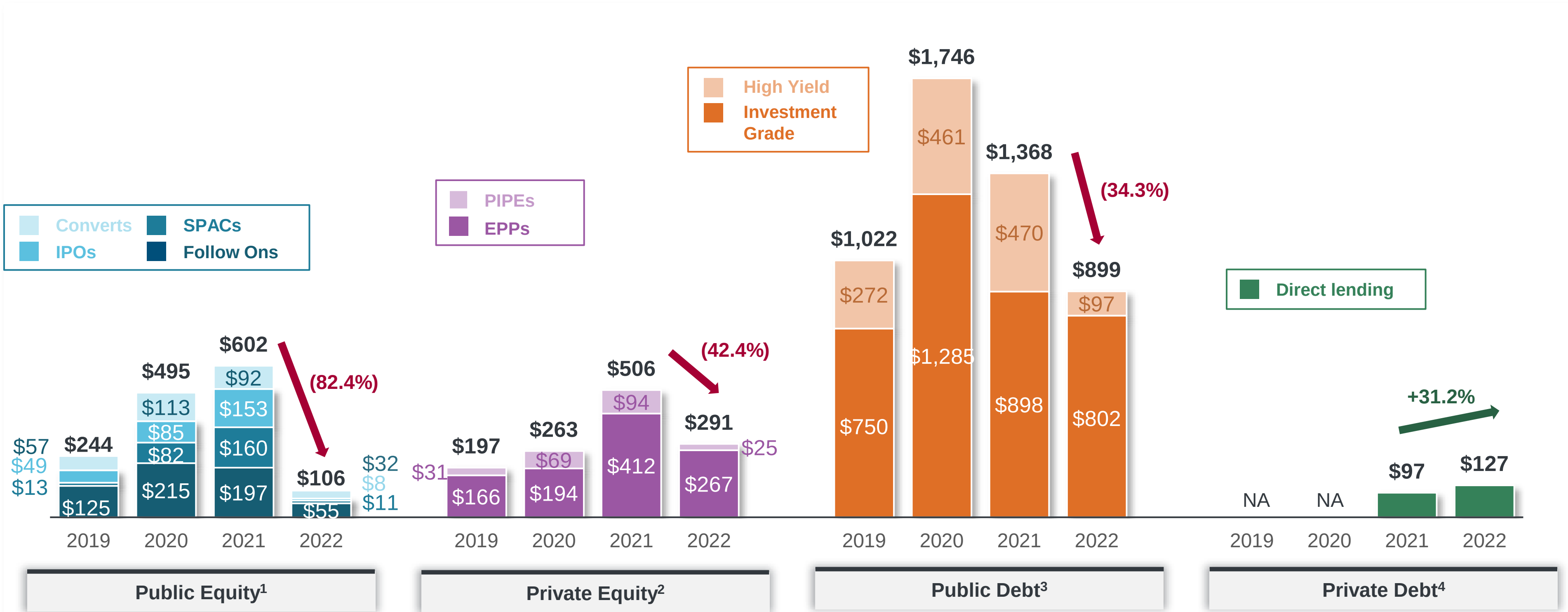
Why it matters?

- **For more than a decade, central bank policies drove down borrowing costs in absolute terms but also relative to alternative costs of capital like equity, contributing to a market-wide increase in leverage in capital structures**
- **That trend has reversed, with debt now relatively less attractive that it has been over the last 10+ years**
- **The trend towards de-leveraging is likely to persist as firms revisit the optimal capital structure paradigm, interest deductibility limitation constraints, and balance sheet resiliency**

Source: Bloomberg, FactSet as of 12/31/2022
Note:[1] Based on median gross leverage for members as of 12/31 of each respective year and excludes financials; [2] Adjusted market cost of equity calculated as S&P 500 earnings yield + 3% Long Term Growth Expecation; [3] Based on current yield differential between portfolio yield of JULI IG Index vs JULI HY YTW Index; [4] 2022 S&P 500 gross leverage reflects latest reported as of 12/31/2022

4 Companies are seeking alternate sources of capital

CAPITAL RAISING ACTIVITY 2019-2022 ($BN)



U.S. IPO activity hit a three-decade low in 2022, amid broader decline in capital raising activity

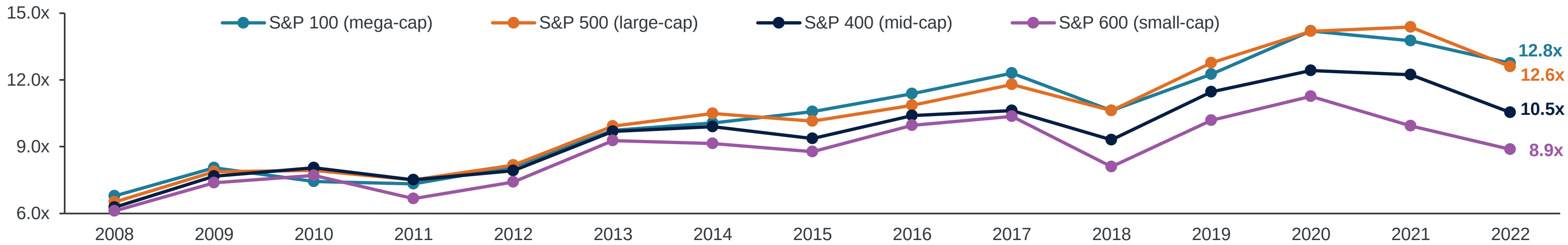
Why it matters?

- **Limited availability of traditional capital sources has changed the financing playbook for many companies, with earlier-stage companies that are more reliant on public equity particularly impacted**
- **The relative resiliency of private capital market activity coupled with the shifting interest rate backdrop have led many firms to evaluate a wider array of capital sources (e.g., private placements, converts)**

Note: IG supply volumes include non-financials only; [1] Dealogic, Bloomberg, and FactSet; IPOs and Follow Ons as of 12/31/22 (excludes deals <$50mm and CLEFs); Converts as of 12/31/22; SPACs from Dealogic as of 12/28/22, trust account subject to redemptions at de-SPAC closing, (includes SPAC deals ≥ $100mm since 2019); [2] Captures equity fundraising in private markets; Equity private placement (EPP) data from Pitchbook and Dealogic data as of 1/3/23 excluding secondary private deals; deals >$50mm; companies with HQ location in Americas; Private investment in public equity (PIPE) data from PrivateRaise as of 12/30/22; includes deals >$50mm; excludes Reg S deals; [3] U.S. Investment Grade Issuances as of 12/31/22 and U.S. High Yield Issuances as of 12/31/22 from Dealogic and J.P. Morgan Markets; [4] Private debt data from KBRA DLD; 2021 reflects issuance from 4/21 – 12/21; 2022 reflects issuance from 1/22 – 11/22

5 Scale and capital access are driving value in the market

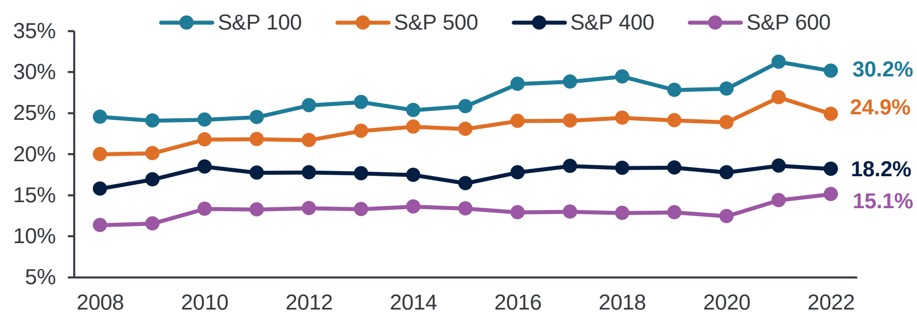
MEDIAN EV / NTM EBITDA MULTIPLES OVER TIME[1]



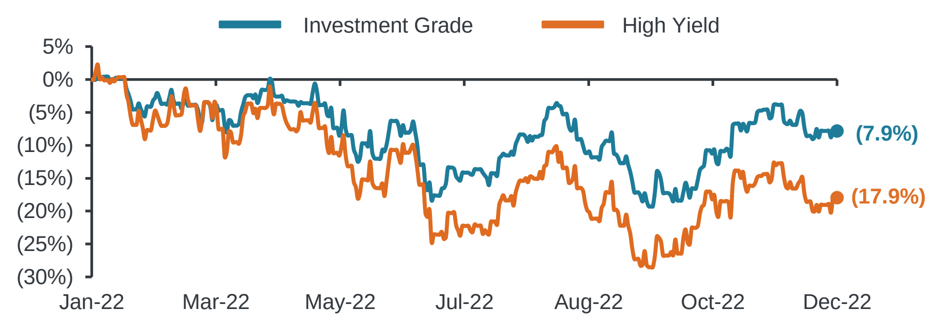
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Large cap. premium to small cap.	7%	7%	3%	13%	10%	7%	15%	16%	9%	14%	31%	25%	26%	45%	42%

Long-term average (2008-2022) :16.2%

EBITDA MARGINS BY SIZE[1]



S&P 1500 RETURNS BY CREDIT PROFILE[2,3]



The premium for scale is nearly 3x the long-term average

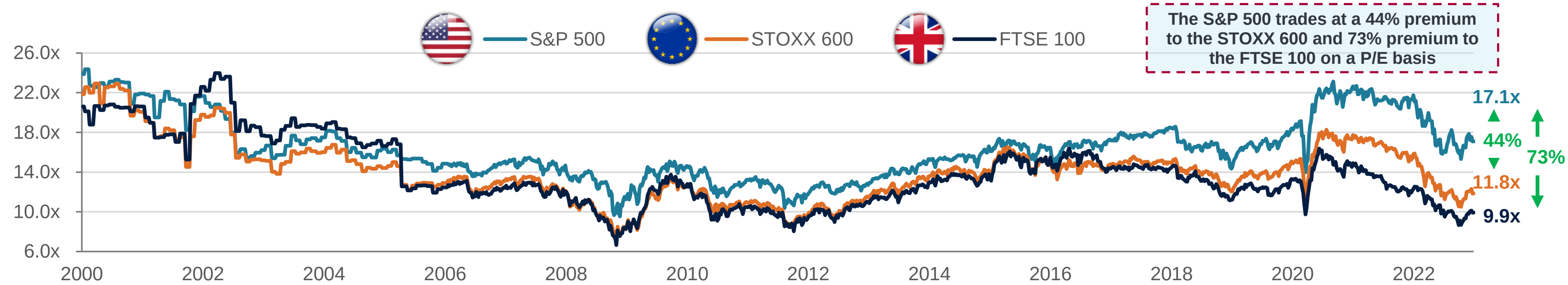
Why it matters?

- **The valuation premium for scale paired with depressed valuations creates a compelling narrative for pursing acquisitive growth**
- **Margins across the broader market are correlated with size as larger firms gain economies of scale and greater pricing power, particularly important factors in a market focused on inflationary pressures**
- **Equity investor focus on corporate balance sheet strength and capital market access has also increased given the uncertain economic backdrop**

Source: Bloomberg, FactSet; Market date as of 12/31/2022
[1] Reflects index constituents as of 12/31 for each respective year; [2]Returns are computed as median of total returns of the individual constituents of sample subset of S&P 1500 derived based on ratings criteria; [2]S&P 1500 members, ratings and leverage as of 01/01/2022

6 A strong dollar and strong dollar valuations for now

RELATIVE P/E MULTIPLES OVER TIME[1]



DXY INDEX ROLLING YOY% CHANGE 1990 - 2022

U.S. equity valuations are at a 40-70% premium relative to European companies, the highest in over two decades

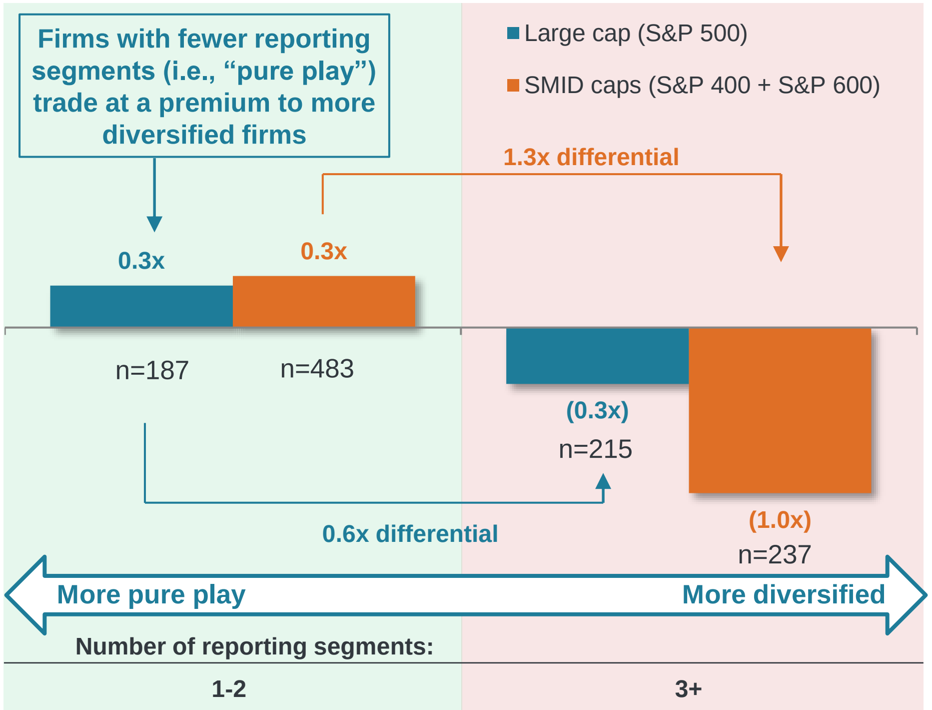
Why it matters?

- **A strong dollar creates an attractive window of opportunity for M&A activity, for both cash and equity consideration**
- **Benefits are particularly pertinent for acquirers looking to expand internationally – focusing on asset-light acquisitions and companies with USD-denominated cashflows**

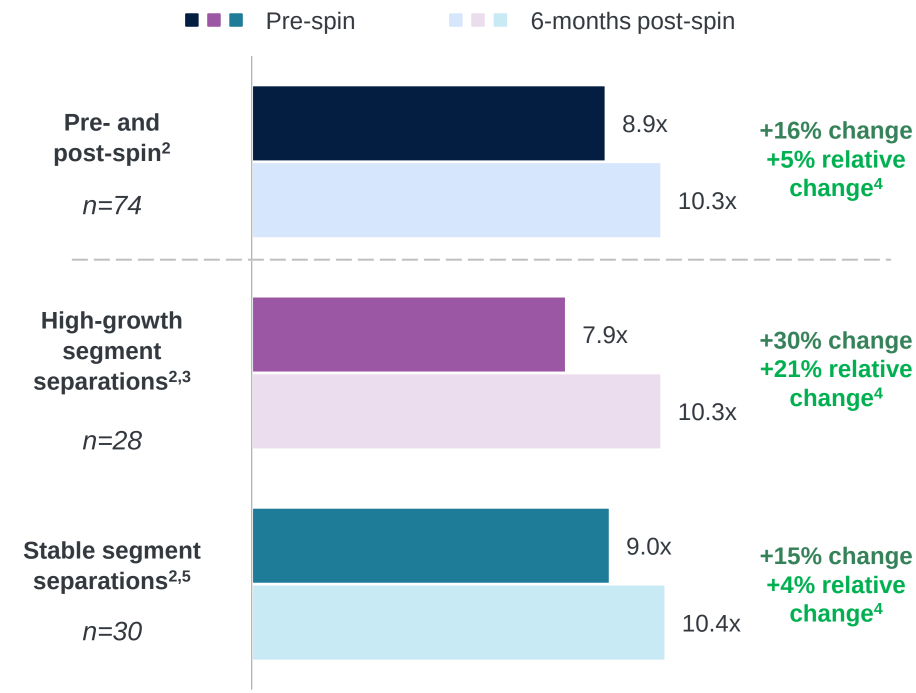
Source: Bloomberg; as of 12/31/2022
Note: U.S. Dollar Index ("DXY") represents the weighted average exchange rate between USD and major world currencies; DXY Index is composed of EUR (58%), JPY (14%), GBP (12%), CAD (9%), CHF (4%), SEK (4%);[1] Monthly data from 2000 – 2006, weekly data from 2006 – current

7 Markets continue to reward corporate clarity

CURRENT NTM P/E MULTIPLE DIFFERENTIAL VS. S&P 500 & SMID CAP MEDIAN BY REPORTING SEGMENTS[1]



EV/EBITDA VALUATION MULTIPLES PRE- AND POST-SEPARATION



Pure play companies typically trade at a 0.5x – 1.5x premium to more diversified companies

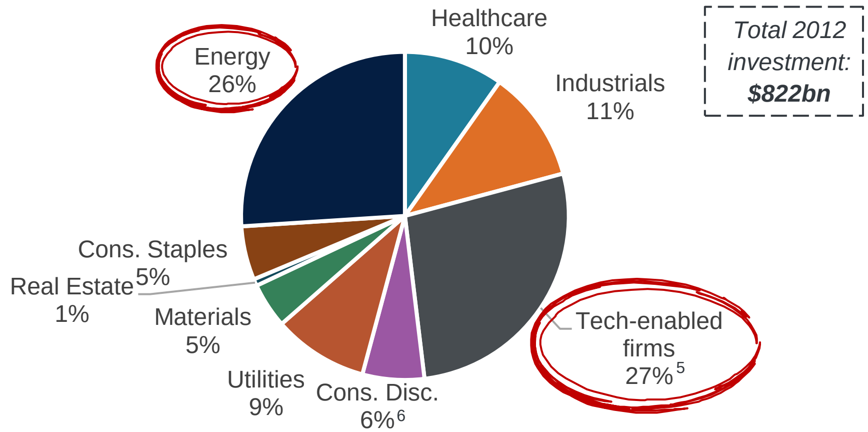
Why it matters?

- **Volatility in today's markets has driven a scramble toward transparency and corporate clarity**
- **An analysis of valuation multiples relative to number of reported segments (a proxy for business diversification) suggests that there may be valuation overhang in operating an overly diversified set of businesses**
- **Focussed scale is being rewarded most highly, in a market**

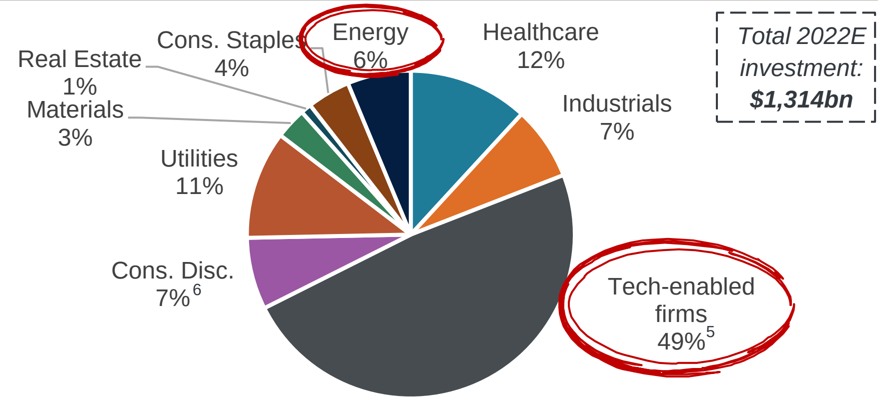
Source: P/E and EV/EBITDA multiples from Bloomberg, FactSet as of 12/31/2022; [1] Data excludes Financials and Real Estate; Y-axis is the difference between the median multiple of all firms in the S&P 1500 and the median multiple of firms with certain number of segments; [2] Based on next-twelve-month multiples based on IBES consensus estimates; Post-spin weighted average based on EBITDA weightings 6-months post completion of spin; [3] Defined as separations where the absolute value of the absolute LTG differential (RemainCo – SpinCo post-separation) > 5%; [4] Relative to change in S&P 500 EV/EBITDA over the same time periods; [5] Defined as separations where the absolute value of the Barra Beta differential (RemainCo – SpinCo 6 months post-separation) > 0.25

8 Tech to follow Energy towards increased investment discipline?

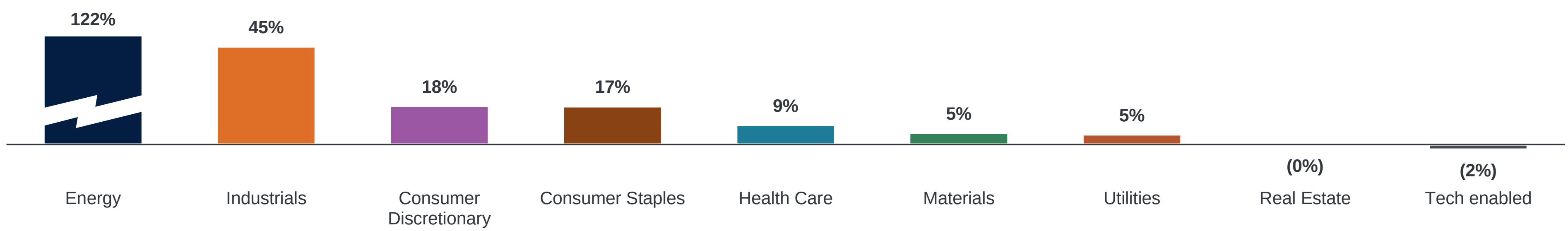
2012 INVESTMENT BY SECTOR (CAPEX + R&D)[1]



2022E INVESTMENT BY SECTOR (CAPEX + R&D)[1,2]



SECTOR RETURNS ON INVESTMENT FOR FIVE MOST CAPITAL-INTENSIVE FIRMS (2021 – 2022E)[3,4]



Tech investment is now nearly equal to investment across all other sectors, but returns have lagged

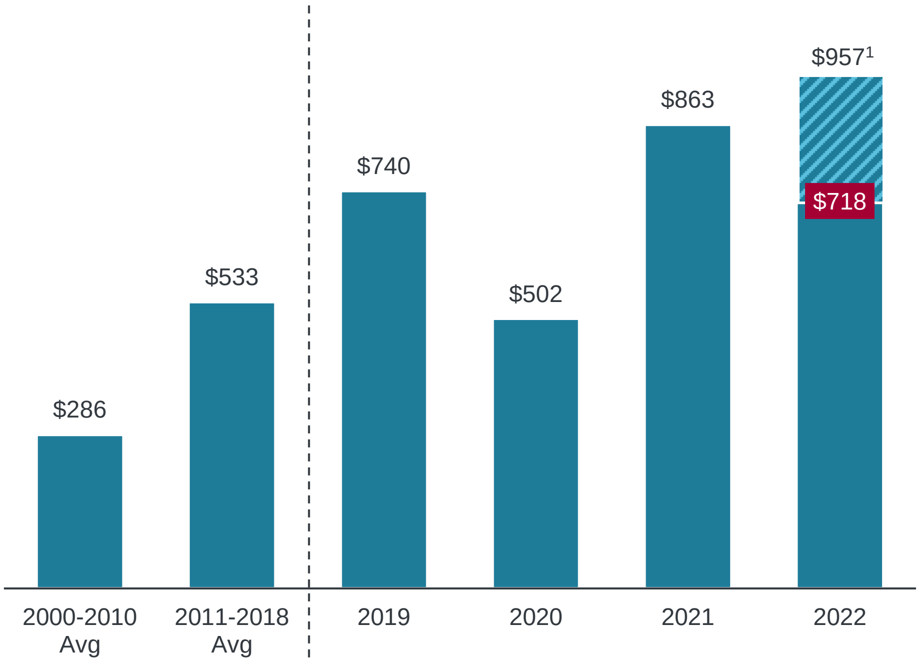
Why it matters?

- **There has been a sectoral shift in investment over the past decade, with investment in tech-enabled sectors increasing from $213bn (27% of total) to $637bn (49% of total)**
- **Near-term investment returns coupled with lackluster share price performance suggest investment scrutiny is likely to increase, particularly in a rising rate environment**

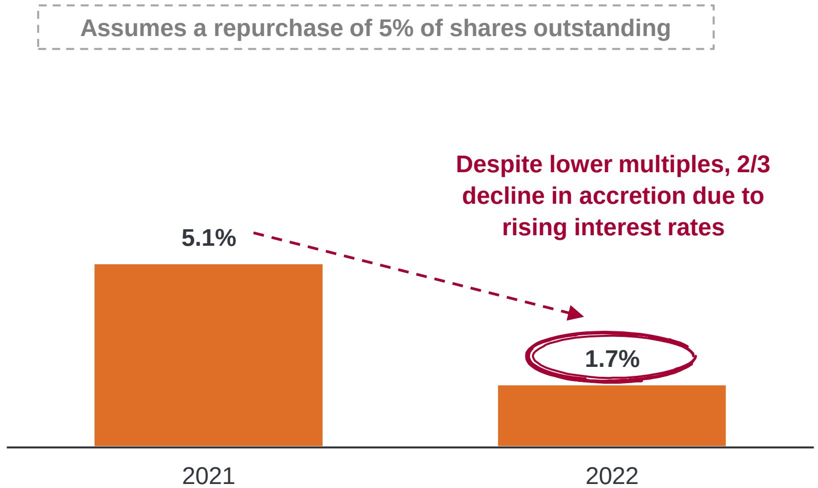
Source: Bloomberg, FactSet; Note: Investment defined as sum of Capex and R&D spending; [1] Includes S&P 500 members, excluding financials as of year-end of corresponding year (2012 and 2022); [2] Current as of 12/31/2022; [3] Includes S&P 500 members as of year-end 2022; [4] Capital intensity measured as change in EBIT over 2 years / sum of 2-year capex and R&D spend, as of 12/31/2022; [5] Includes information technology, communication services and Amazon; [6] Excludes Amazon

9 Buyback headwinds growing after (another) record year

S&P 500 ANNUAL BUYBACKS ($BN)



ILLUSTRATIVE EPS ACCRETION FROM CASH FUNDED BUYBACKS[2,3]



	2021	2022
Illustrative interest rate for cash	0.2%	4.8%
S&P 500 P/E	21.6x	16.9x

Illustrative EPS accretion from cash funded buybacks is ~2/3 less accretive than at the start of 2022, but share buybacks remain an accretive and flexible tool for capital return

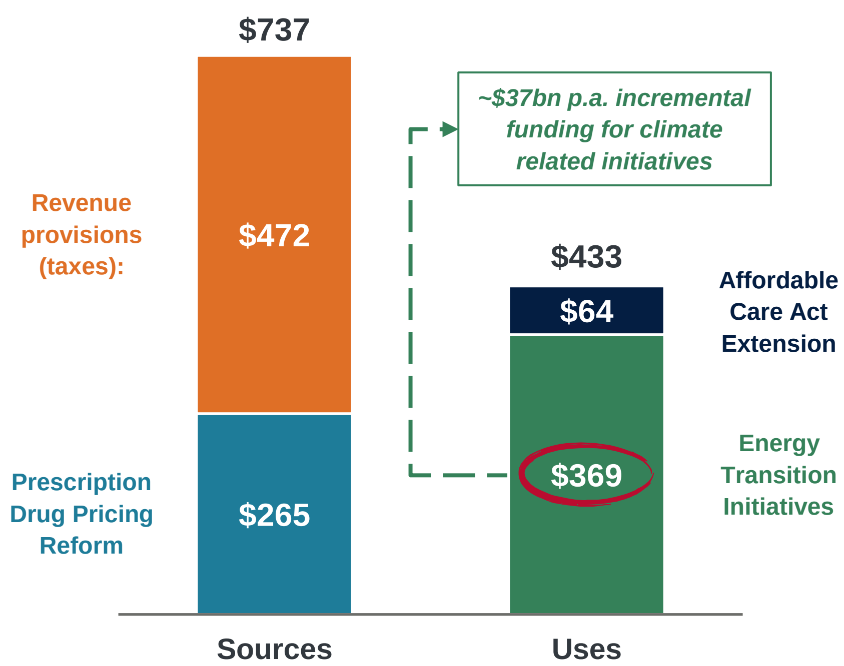
Why it matters?

- **EPS accretion from buybacks has changed significantly since the start of the year, requiring a reassessment of interest expense / income vs. current multiples to determine accretion**
- **Introduction of 1% excise tax doesn't materially change the "toolkit" for capital return to shareholders, but a future increase in the tax rate for buybacks may change behavior**
- **Despite lower EPS accretion, buybacks remain a flexible option for corporates and tax advantaged to investors vs. dividends**

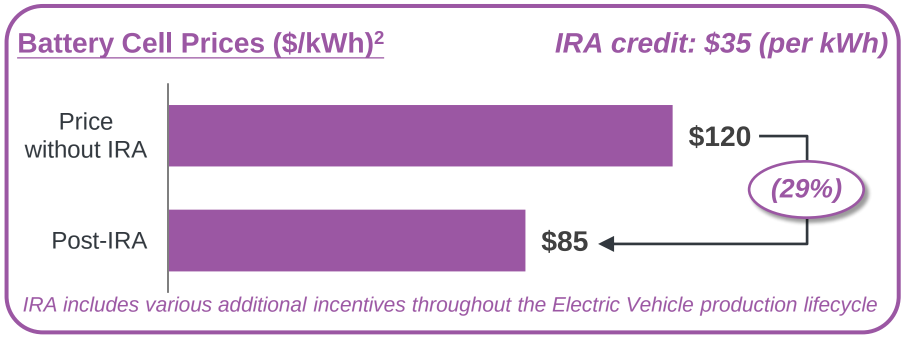
Source: Bloomberg, FactSet
Note: [1] 2022E estimate based on YTD 2022A figure of $718mm annualized; [2] Based on Year end for 2021 and 2022; [3] Assumes 3 month LIBOR as the interest rate on cash with a 5% premium paid for repurchased shares (end of year share count assumed for pro forma shares outstanding for EPS)

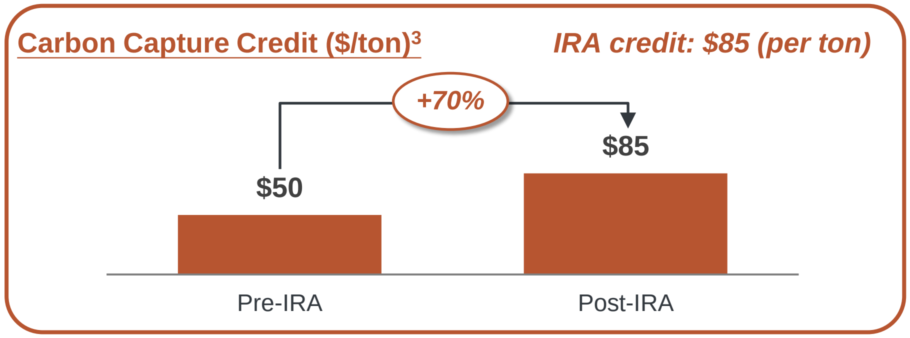
10 Policymakers step in to support strategic investment

Inflation Reduction Act (IRA) – 10-yr sources and uses ($bn)[1]



Impact to select energy transition investments





The IRA represents the largest climate-related public spending commitment in history; $369bn projected with significant upside potential

Why it matters?	
	• Opportunity for corporates to achieve emissions reduction / net-zero targets at reduced investment level – will investors expect more ambitious transition targets as a result? • Targeted fiscal stimulus to drive U.S. investment and manufacturing, similar to the CHIPS and Science Act ($280bn spending bill passed in August 2022 to bolster US semiconductor capacity and catalyze scientific R&D) to become the norm in the absence of broad support via rate policy?

Source: [1] Congressional Budget Office estimate; [2] Bloomberg estimate for 2022 volume-weighted average lithium-ion battery pack price in 2022 ($120/kWh); [3] $85/ton credit is for Carbon Capture Storage only. Credit for capturing carbon and using for enhanced oil recovery is $65/ton

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