April 30, 2021 08:14 PM GMT

FOUNDATION

Morgan Stanley

Equity Research Spring Training

Financials Teach-In

MONDAY, MAY 3, 2021

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Agenda

Agenda — Monday, May 3, 2021

8:00 a.m. – 8:05 a.m. — **Welcome & Opening Remarks**
Lore Serra, *Managing Director, Associate Director of North America Equity Research*

8:10 a.m. – 8:50 a.m. — **Large Cap Banks and Midcap Advisors**
Betsy Graseck, *Managing Director*
Manan Gosalia, *Executive Director*

9:00 a.m. – 9:30 a.m. — **Consumer Finance**
Betsy Graseck, Managing Director
Jeffrey Adelson, *Vice President*

9:40 a.m. – 10:10 a.m. — **Midcap Banks**
Ken Zerbe, *Executive Director*

10:20 a.m. – 10:50 a.m. — **Brokers & Asset Managers**
Michael Cyprys, *Executive Director*

11:00 a.m. – 11:30 a.m. — **Business & Professional Services**
Toni Kaplan, *Executive Director*

11:40 a.m. – 12:10 p.m. — **Payments & Processing**
James Faucette, *Managing Director*

12:20 p.m. – 12:40 p.m. — **Lunch**

12:40 p.m. – 1:00 p.m. — **Financials Product Toolkit**
Reyna Venkat, *Executive Director, Institutional Equity Division*
Michael Mullen, *Institutional Equity Division*

1:10 p.m. – 1:40 p.m. — **Life Insurance**
Nigel Dally, *Managing Director*

1:50 p.m. – 2:20 p.m. — **Property & Casualty Insurance**
Mike Phillips, *Executive Director*

2:30 p.m. – 3:10 p.m. — **REITs, CRE & CMBS**
- Richard Hill, *Managing Director*
- Vikram Malhotra, *Executive Director*
- *Ronald Kamdem, Executive Director*

3:20 p.m. – 3:50 p.m. — **Investment Banking Panel: Bank M&A and Fintech**
Moderated by Betsy Graseck, *Managing Director, Large Cap Finance* and Ken Zerbe, *Executive Director, Midcap Banks*
- Grant Gregory, *Managing Director, Investment Banking Division*
- Jigar J. Patel, *Managing Director, Investment Banking Division*
- Kaivan Shakib, *Managing Director, Investment Banking Division*

4:00 p.m. – 4:30 p.m. — **Top Picks Panel with the Financials Team**
- Betsy Graseck, *Managing Director*
- Ken Zerbe, *Executive Director*
- Stephanie Ma, *Associate*
- Toni Kaplan, *Executive Director*
- James Faucette, *Managing Director*
- Nigel Dally, *Managing Director*
- Mike Phillips, *Vice President*
- Richard Hill, *Managing Director*
- Vikram Malhotra, *Executive Director*

Biographies

Betsy Graseck

Large Cap Banks, Consumer Finance & Head of Global Banks and Div Fin Research

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Betsy Graseck is a Managing Director covering US Large Cap Banks and is Global Head of Banks and Diversified Finance Research. Betsy picked up US Large Cap Banks in 2002. Betsy's awards include the Starmine #1 stock picker in US Banks in 2018 and in US Commercial Banks in 2008 and 2009; she was the #6 stock picker in the US across all sectors in 2009, Starmine #1 Earnings Estimator in Capital Markets in 2016, and is ranked in the Institutional Investor poll. Betsy was Associate Director of Equity Research for TMT from 1998 to 2002, and was ranked in the Institutional Investor All-Asia Research Team Poll while covering Japanese Banks, Brokers, and Consumer Finance stocks from Tokyo in 1992-98. Prior to Tokyo, Betsy was a consultant in KPMG's bank group, focusing on capital and reserve adequacy, balance-sheet restructuring, and profit-improvement projects. Betsy first joined Morgan Stanley in 1986, after a year at Gunma Bank. Betsy received her BA in Japanese studies with a minor in economics from Cornell University. She studied at Waseda University, has an MBA from Columbia University, and holds the Chartered Financial Analyst designation.

Manan Gosalia

Midcap Advisors

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Manan Gosalia is a Vice President covering the US Midcap Advisors. Manan is also part of the US Large Cap Banks Equity Research team, led by Betsy Graseck, where he focuses primarily on the US money center banks. Manan joined Morgan Stanley in 2009 and holds a Bachelor's degree in Commerce from the University of Mumbai, India. Manan is also a Chartered Accountant with a degree from the Institute of Chartered Accountants of India.

Biographies

Jeff Adelson

Consumer Finance

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Jeff Adelson is a Vice President in Equity Research, based in New York; he joined Morgan Stanley in 2014. Jeff is a part of the US Large Cap Banks team where he covers Consumer Finance. Jeff joined Morgan Stanley in 2014 from JPMorgan, where he worked in Equity Research on the U.S. Mid- and Small-Cap Banks team and prior to that in the Private Banking group as an investment analyst. Jeff received his BA in Economics from Cornell University, and holds the Chartered Financial Analyst designation.

Ken Zerbe

Midcap Banks

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Ken Zerbe is an Executive Director in Equity Research, based in New York; he joined Morgan Stanley in 2002. Ken has spent more than a decade covering the US Midcap Banks, having launched coverage in early 2008, just before the financial crisis. He previously covered the Financial Guarantors and Small-Cap US & Large-Cap Canadian Life Insurers. Prior to joining Morgan Stanley, Ken spent several years working on the sell-side at Bear Stearns and UBS. He also has prior buy-side experience at Oppenheimer Investment Advisors. Ken graduated summa cum laude with a dual degree in Finance and Economics from Utah State University, received his MBA from NYU's Stern School of Business, and holds the CFA designation.

Biographies

Michael Cyprys

Brokers & Asset Managers
Michael.Cyprys@morganstanley.com, 212 761-7619

Michael Cyprys is a Senior Research Analyst and Executive Director covering Brokers & Asset Managers since 2014. Institutional Investor magazine voted him an All-America Rising Star in 2017, and he is currently ranked Runner-Up. Mike joined Morgan Stanley in 2010 as a member of the Large Cap Banks team, with secondary coverage responsibilities for money center banks. Prior to joining Morgan Stanley, Mike worked at Oppenheimer in sell-side research for a year covering health insurance companies. Before becoming an equity research analyst, he worked at Merrill Lynch in its corporate finance group, where he structured and executed capital raising transactions for clients. He started his career in accounting at Deloitte & Touche. Mike holds a Bachelor's degree in Business Administration from Boston University and the Chartered Financial Analyst (CFA) designation.

Toni Kaplan

Business Services
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Toni Kaplan is an Executive Director at Morgan Stanley and heads US Business Services research. She has covered the industry for a decade, having joined Morgan Stanley in 2009. Previously, she spent four years at The Travelers Companies in the Financial Management Leadership Development Program. Toni has an M.B.A. from Harvard Business School and a B.S. from Cornell University in Applied Economics and Management.

Biographies

James Faucette

Payments

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James Faucette leads the US Fintech and Payments research team; he has experience covering a number of sectors within technology. James joined Morgan Stanley from Pacific Crest Securities, and also worked at Deutsche Bank (London) as a European tech strategist and at ING Barings (Santiago, Chile) as part of the Latin American electrical utilities team. He holds an International MBA from the University of Chicago and a BS in business economics from the University of Arizona.

Nigel Dally

Life Insurance

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Nigel Dally joined Morgan Stanley in 1995, and is currently a Managing Director covering the US life insurance and annuities sector. In 1998, he helped pioneer the Australian Equity Research Division for Morgan Stanley, while providing research coverage on the Australian financials industry. Previously, Nigel was an analyst for the US money center and Canadian banks. Prior to joining the firm, he worked in management consulting at Booz-Allen & Hamilton. Nigel graduated with honors (first class) from the University of Western Australia, and holds an MBA (Beta Gamma Sigma) from Columbia Business School.

Biographies

Michael Phillips

P&C Insurance

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Mike Phillips is an executive director and leads the P&C Insurance team. He joined Morgan Stanley Research full-time in 2016, helping to propel the team to a top-ranked position. From 2010-16, as an actuary in the Casualty Actuarial Society, Mike performed all actuarial reserve analyses for Morgan Stanley's lead insurance analyst. Prior to that, Mike was the Mid-Cap P&C analyst at Stifel Nicolaus. Mike started his career inside the insurance industry, working 10 years as a reserving actuary at The Travelers and a consulting actuary at Milliman. Mike is a former board member of United Fire Group (UFCS). He graduated from Bucknell University with a degree in math and economics, and earned an MBA from Kenan-Flagler Business School at the University of North Carolina in Chapel Hill.

Richard Hill

REITs & CRE Debt Research

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Richard Hill is a Managing Director covering the US commercial real estate market and leads Morgan Stanley's US REIT Equity and Commercial Real Estate Debt research teams. Richard joined the Firm in 2013 and has been an II-ranked CMBS analyst for several years. He has covered the industry in various capacities for 18 years in both banking and research roles, including positions at Royal Bank of Scotland and Banc of America Securities. Prior to becoming a research analyst, Richard worked in the Structured Securities Group of Banc of America Securities, where he was responsible for the origination, structuring, and distribution of securitization backed by CRE debt. He started his career in that bank's Interest Rate Derivatives group, where he structured hedging strategies for CRE developers. Richard is a graduate of Georgetown University, with a BSBA in Finance.

Biographies

Vikram Malhotra
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Vikram Malhotra is an Executive Director who covers the REIT industry and previously covered Machinery and Business Services. Vikram joined Morgan Stanley in 2007 after serving as a Senior Manager with Jones Lang LaSalle, a global real estate solutions firm. He has also worked for Colliers International as a real estate investment consultant. Vikram holds a BS in industrial management from Purdue University and an MBA from the University of Michigan's Ross School of Business.

Ronald Kamdem
REITs
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Ronald Kamdem, CFA, is an Equity Research Analyst at Morgan Stanley, where he has covered public companies in the Real Estate sector for 5 years. He has experience in various property subsectors including Retail, Office, Industrial, Multifamily, Single Family, and Storage. Prior to his current role, Ronald worked in Equity Sales at Morgan Stanley in its Wealth Management business helping financial advisors and their clients identify investment opportunities. Ronald graduated from Harvard College in 2010 with a major in Economics and a minor in Statistics, and he has earned the Chartered Financial Analyst designation. Ronald is fluent in French and is the former co-chair of the junior board of an education and squash non-profit in Harlem.

Morgan Stanley

FOUNDATION

May 2021

Financials Spring Training Teach-In

Large Cap Banks & Consumer Finance

MORGAN STANLEY RESEARCH
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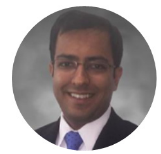

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Overview of Large Cap Banks

Large Cap Bank and Consumer Finance EPS: Six Drivers to 2021 Outlook

1. Lower Interest Rates
2. Loan and Deposit Growth
3. Higher Fee Income
4. Higher Expenses
5. Reserve Bleed
6. Buybacks Resume

↑ Increases EPS

↓ Decreases EPS

Sample Bank Income Statement

	Driver	% of 2020 Rev. (Our Coverage)	2021E Y/Y (Our Coverage)
Net Interest Margin ("NIM")	1		-22 bp
x Interest Earning Assets ("IEA")	2		9%
Net Interest Income ("NII")		**49%**	**-2%**
+ Fee Income	3	51%	8%
Total Revenues		**100%**	**3%**
– Non-Interest Expenses	4	61%	5%
Pre-Provision Operating Profit ("PPOP")		**39%**	**0%**
– Provisions	5	17%	-99%
Pre-Tax Income		**22%**	**78%**
– Tax		4%	107%
Operating Income		**18%**	**72%**
– Preferred Dividends / NCI		1%	-9%
Operating Income to Common		**17%**	**78%**
÷ Shares Outstanding	6		**-2%**
EPS (weighted-average)			**82%**

Note: All items in sample income statement shown on a WAVG basis.
Source: Company Data, Morgan Stanley Research Estimates

Positive Inflection Drives 2023 Higher

1. NIM Stabilizes
2. Loan and Deposit Growth
3. Higher Volume, Asset Values
4. Efficiency Improvement
5. Loan Losses Moderating
6. Buybacks Accelerate

Increases EPS

Decreases EPS

Sample Bank Income Statement		% of 2023E Rev. (Our Coverage)	2019-2023E CAGR (Our Coverage)
Net Interest Margin ("NIM")	1		-15 bp
x Interest Earning Assets ("IEA")	2		7%
Net Interest Income ("NII")		**49%**	**0%**
+ Fee Income	3	51%	4%
Total Revenues		**100%**	**2%**
– Non-Interest Expenses	4	58%	2%
Pre-Provision Operating Profit ("PPOP")		**42%**	**2%**
– Provisions	5	8%	3%
Pre-Tax Income		**34%**	**2%**
– Tax		7%	3%
Operating Income		**27%**	**2%**
– Preferred Dividends / NCI		1%	-1%
Operating Income to Common		**25%**	**2%**
÷ Shares Outstanding	6		**-5%**
EPS (weighted-average)			**8%**

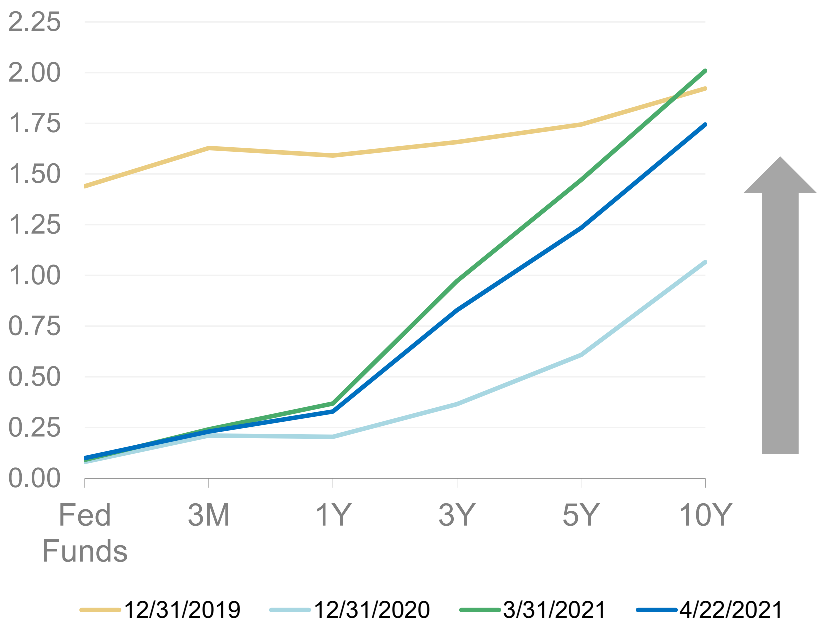
Note: All items in sample income statement shown on a WAVG basis.
Source: Company Data, Morgan Stanley Research Estimates

1 **NIM Stabilizes**

Long end of curve lifts forward NIM estimates

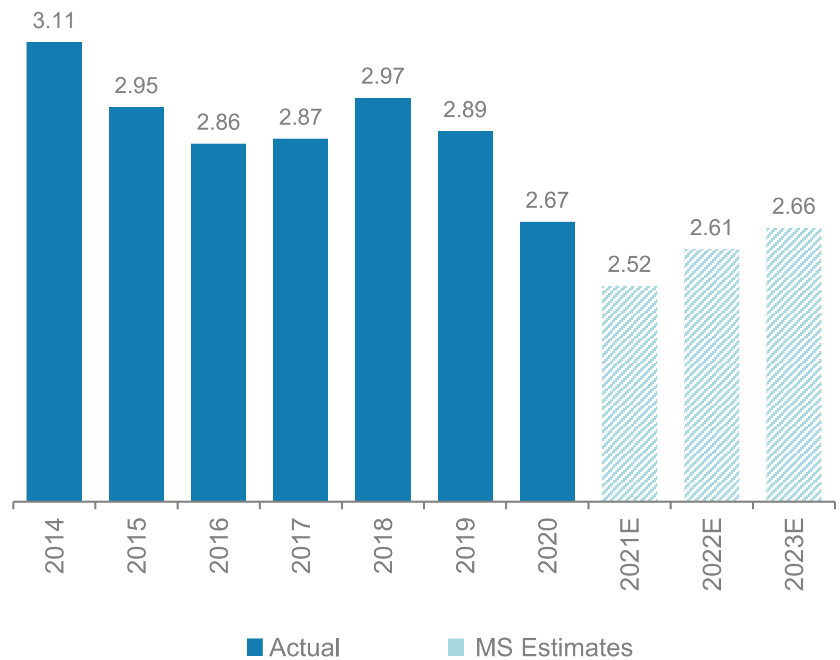
Long end of curve rising after sharp drop off in 2020…

Market-Implied **12M Forward Rates (%)**



…We model NIM bottoming in 2021 as a result

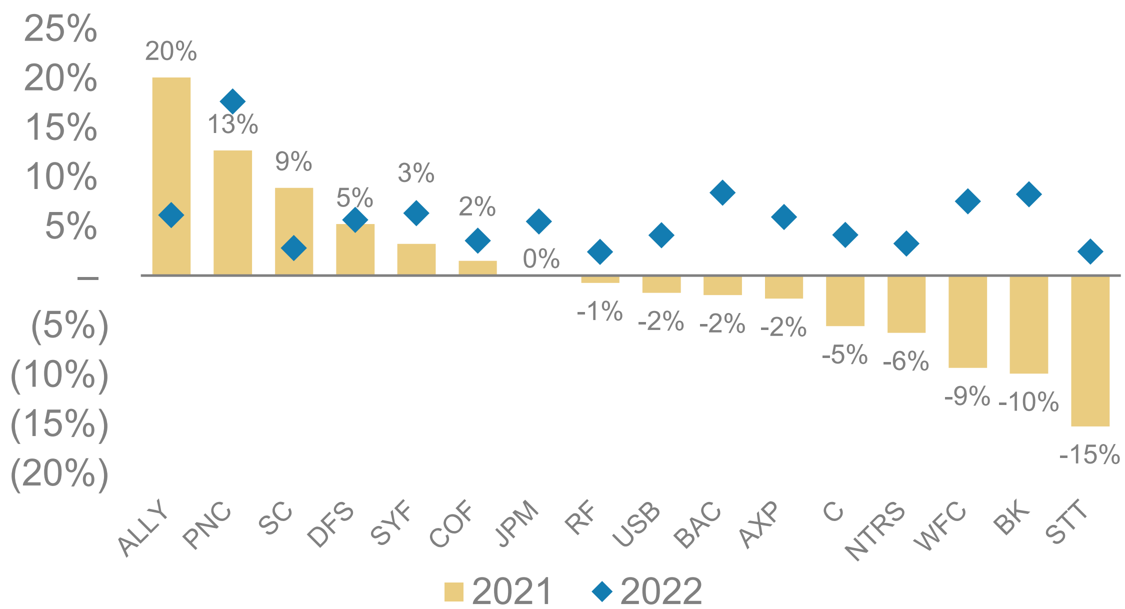
Large Cap Banks Median NIM (%)



Source: Thomson Reuters, Company Data, Morgan Stanley Research estimates

1 **NIM Stabilizes**

But pressure remains in 2021 with NII declining a median 1% before rebounding in 2022



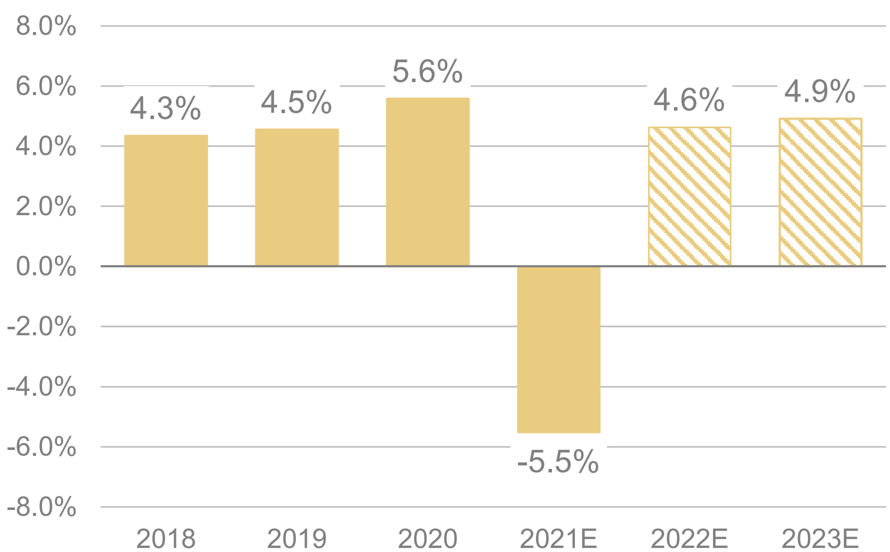
Source: Company Data, Morgan Stanley Research estimates

2 Loan and Deposit Growth

Loan growth picks up in 2022

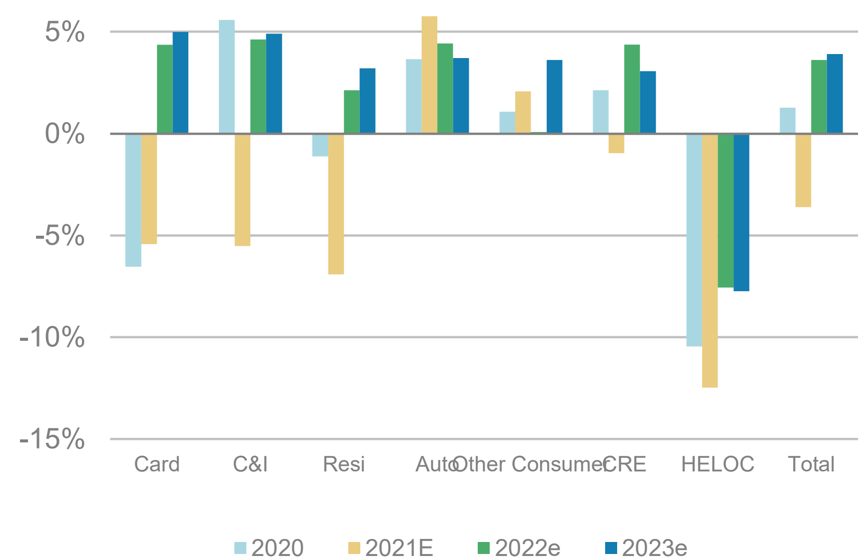
C&I loans normalizing post PPP runoff

WAVG C&I Loan Growth, Y/Y



Loan growth inflects in 2022 across most categories

WAVG Loan Growth, Y/Y



Source: Company Data, Morgan Stanley Research estimates

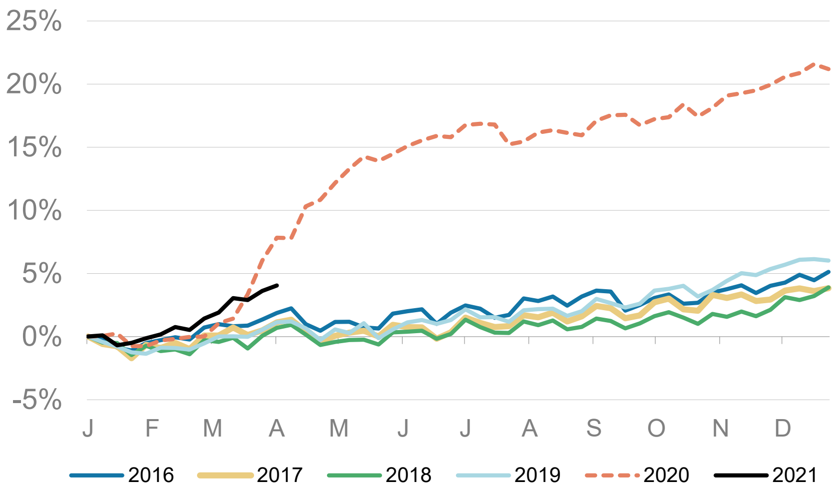
2 Loan and Deposit Growth

Deposit growth remains strong in 2021 given stimulus and Fed balance sheet expansion

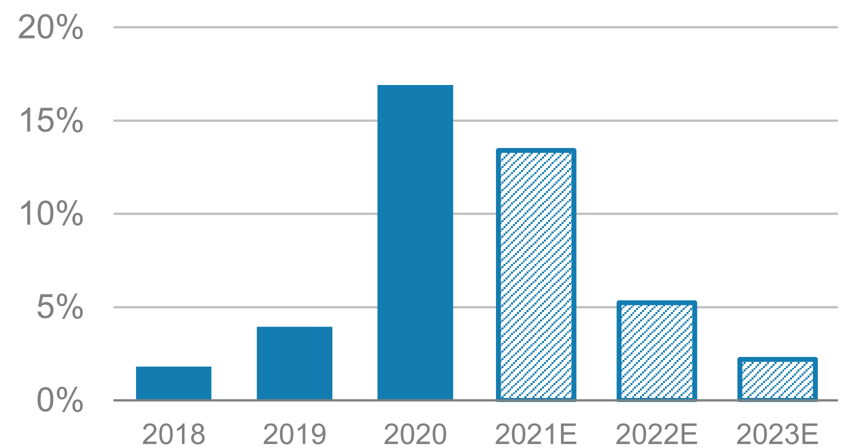
Industry deposit growth tracking above most prior year averages

We estimate deposit growth across our coverage at ~13% in 2021 before dropping to 2-5% the next 2 years

Deposit Growth (%)
All Commercial Banks, NSA



Average Total Deposit Growth (Y/Y, %)



Source: Federal Reserve, Company Data, Morgan Stanley Research estimates

2 Loan and Deposit Growth

JPM, WFC & BAC dominate domestic lending

Domestic Market Share (2020)

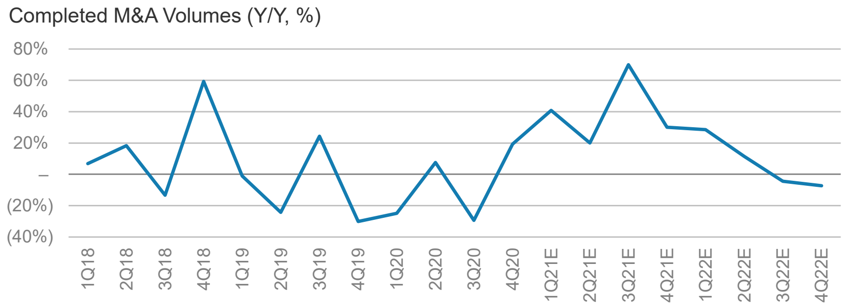
	Resi		Consumer		CRE		C&I		Total Loans	
1.	WFC	14%	JPM	12%	WFC	5%	BAC	10%	JPM	9%
2.	BAC	11%	COF	10%	JPM	5%	JPM	6%	WFC	9%
3.	JPM	11%	BAC	9%	BAC	3%	WFC	6%	BAC	9%
4.	USB	4%	C	8%	TFC	2%	PNC	4%	C	4%
5.	C	4%	WFC	7%	NYCB	2%	USB	3%	USB	3%
6.	TFC	3%	DFS	5%	USB	2%	TFC	3%	TFC	3%
7.	PNC	2%	ALLY	4%	MTB	2%	C	3%	COF	2%
8.	TD (US)	2%	AXP	4%	PNC	2%	FITB	2%	PNC	2%
9.	MS	2%	TFC	4%	COF	1%	KEY	2%	MS	2%
10.	CFG	2%	USB	4%	TD (US)	1%	CFG	2%	TD (US)	2%
11.	MUFG (US)	1%	SC	3%	C	1%	BMO (US)	2%	GS	1%
12.	FITB	1%	TD (US)	2%	ZION	1%	TD (US)	2%	CFG	1%
13.	RF	1%	UBS (US)	2%	FHN	1%	COF	1%	ALLY	1%
14.	HBAN	1%	CFG	2%	MUFG (US)	1%	ALLY	1%	FITB	1%
15.	MTB	1%	PNC	2%	VLY	1%	AXP	1%	KEY	1%
16.	HSBC (US)	1%	MS	2%	CFG	1%	RF	1%	MTB	1%
17.	KEY	1%	BARC (US)	1%	SNV	1%	HBAN	1%	AXP	1%
18.	UBS (US)	1%	FITB	1%	BNP (US)	1%	CMA	1%	DFS	1%
19.	BBVA	1%	HBAN	1%	BBVA	1%	HSBC (US)	1%	SC	1%
20.	ALLY	1%	BNP (US)	1%	SC	1%	GS	1%	BMO (US)	1%
Top 20 Total		**64%**		**84%**		**34%**		**52%**		**57%**

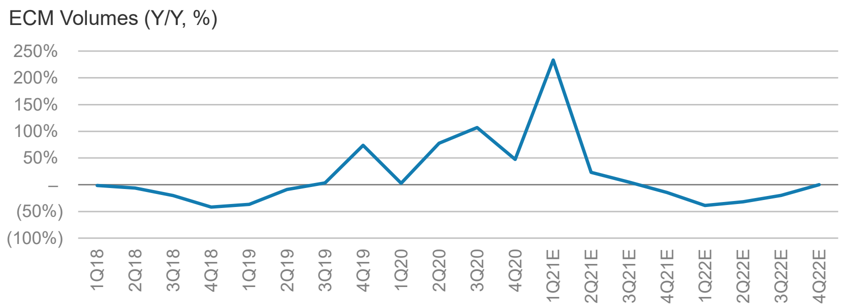
Note: Consumer includes domestic loans to individuals for household, family, and other personal expenditures that are not secured by real estate; CRE includes construction and land, farm loans, multi-family and other commercial real loans; C&I includes agricultural production loans

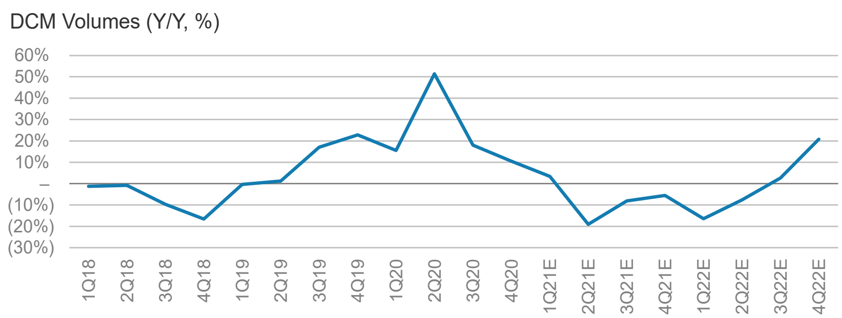
Source: SNL Financial, FDIC. Data as of 4Q20.

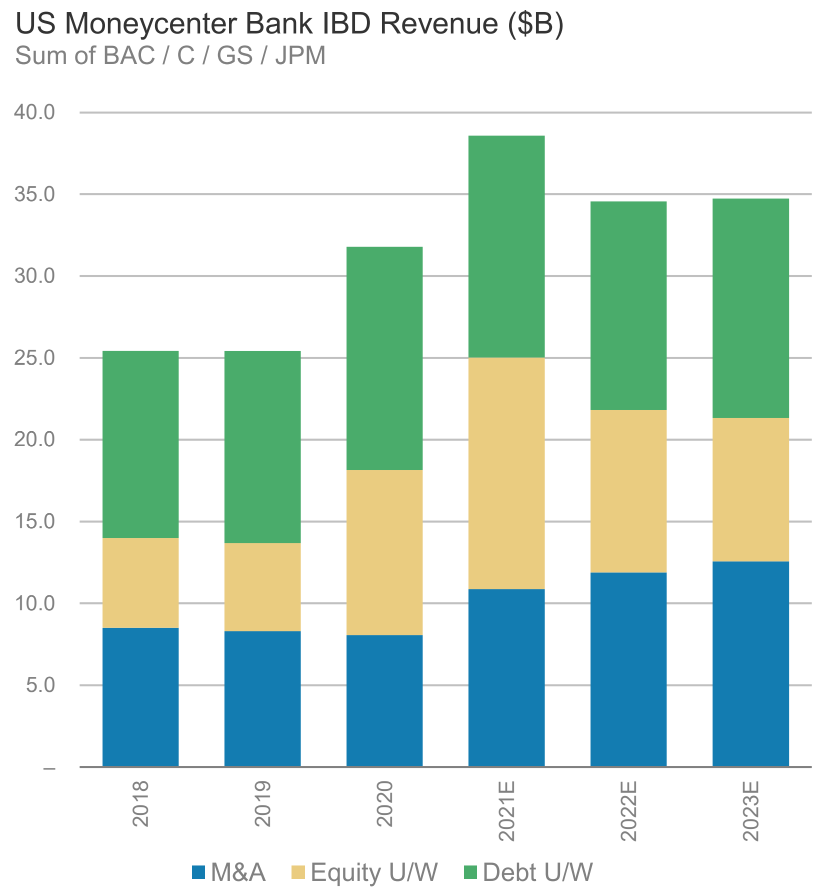
3 Higher Volumes, Asset Values

Higher volume boosts IBD revenues in 2021









Source: Dealogic, Company Data, Morgan Stanley Research estimates

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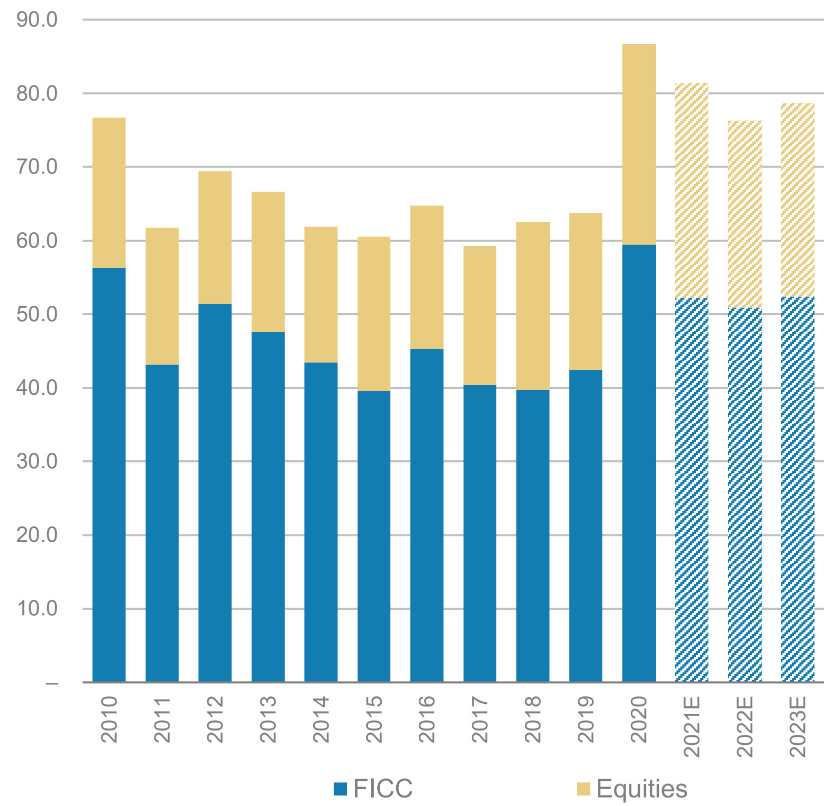
3 **Higher Volumes, Asset Values**

Volatility stays elevated in 2021

Equity Volatility: VIX

FX Volatility: EURUSD 3M

US Moneycenter Bank Trading Revenue ($B)
Sum of BAC / C / GS / JPM

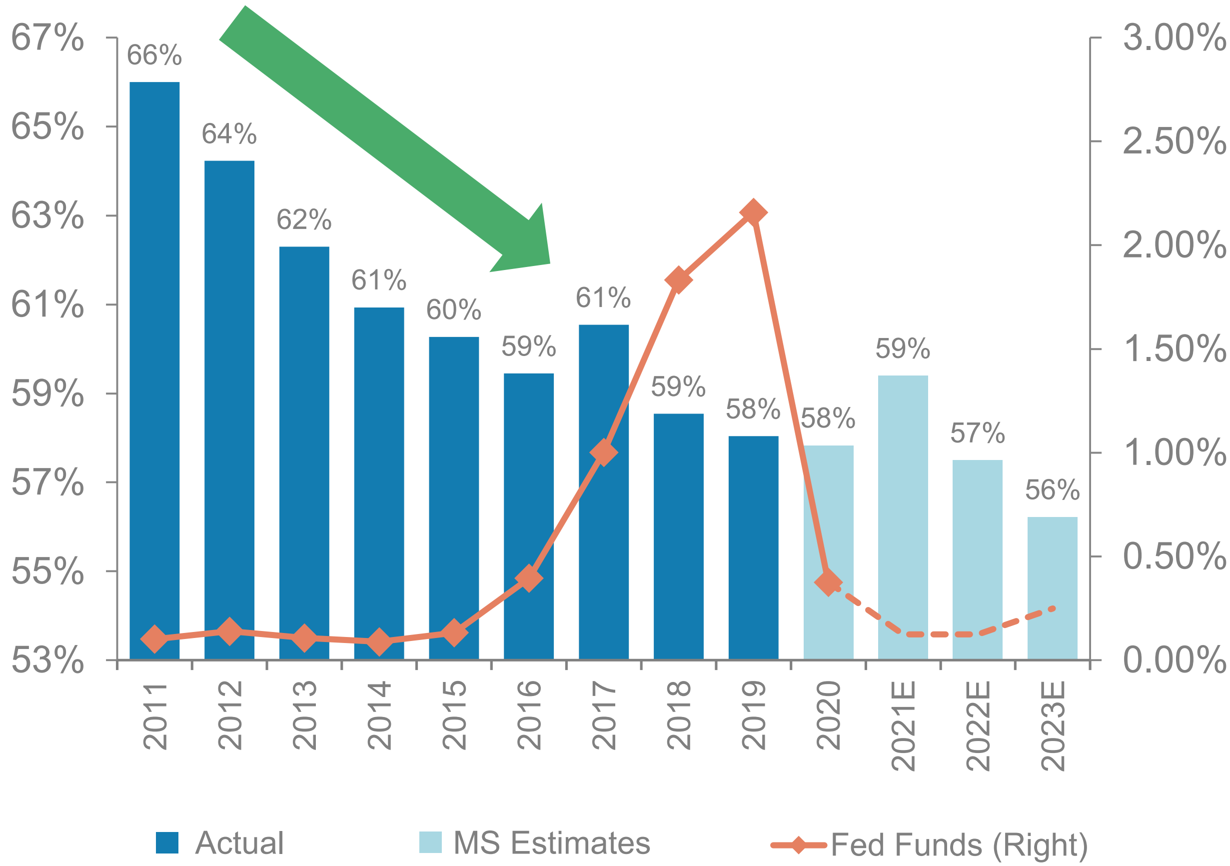


Source: Dealogic, Company Data, Morgan Stanley Research estimates

4 **Efficiency Improvement**

Large Cap Banks can get more efficient even in challenging interest rate environment

Large Cap Banks Median Expense Ratio



Source: Company Data, Morgan Stanley Research estimates

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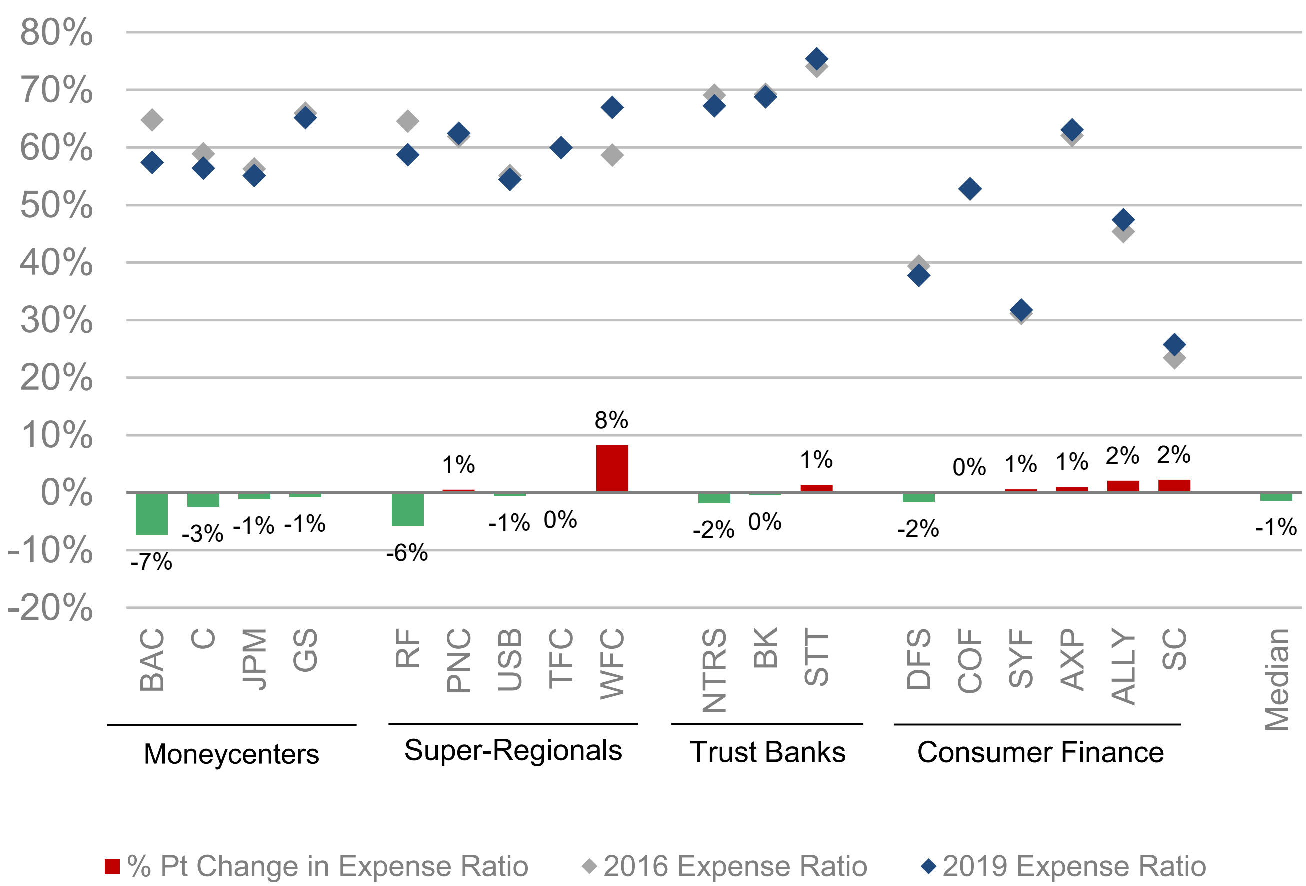
4 Efficiency Improvement

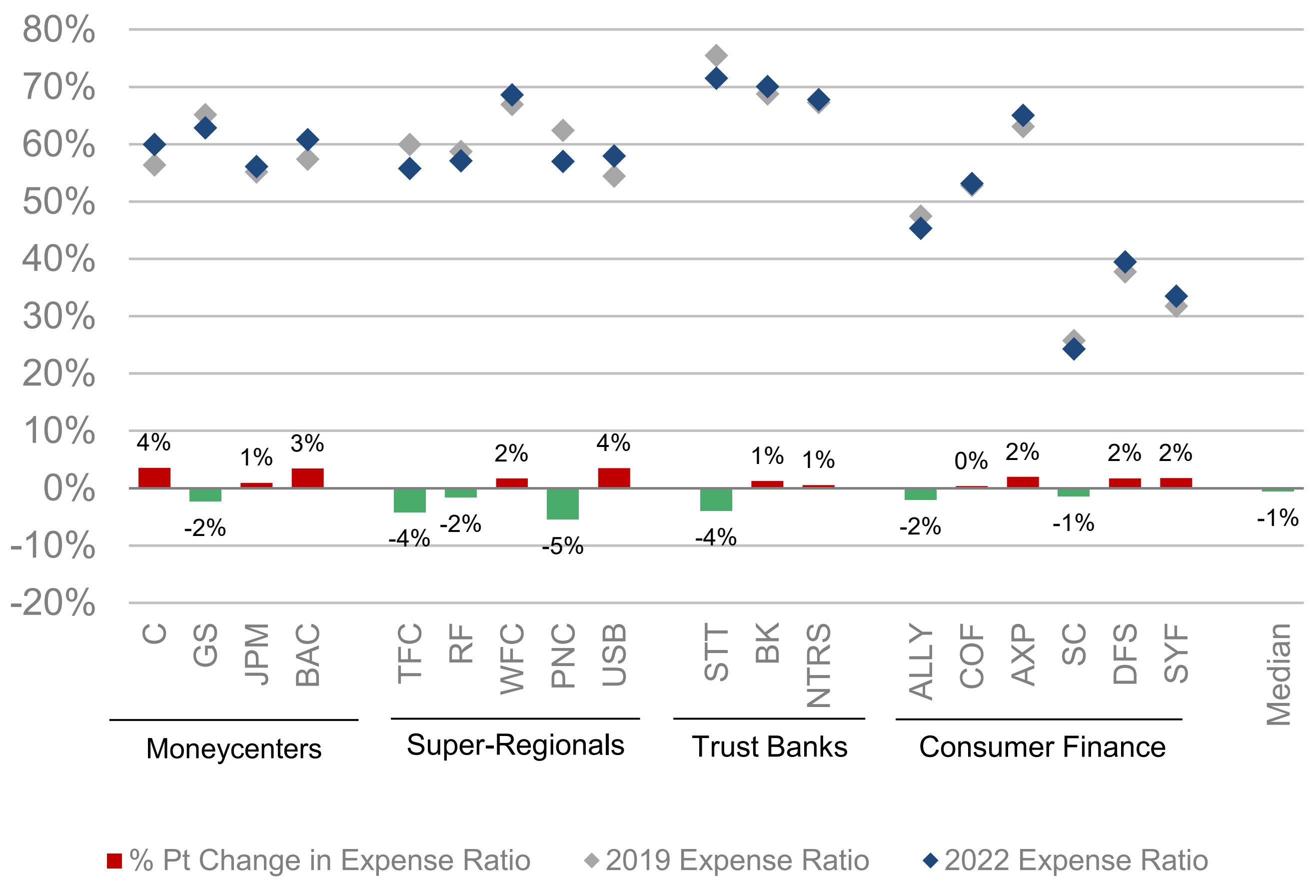
Pre-Covid: Median expense ratio improved 1% point



Source: Company Data, Morgan Stanley Research estimates

4 **Efficiency Improvement**

Post-Covid: Expect additional 1% point improvement



Source: Company Data, Morgan Stanley Research estimates

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4 **Efficiency Improvement**

Digitization the key lever to further efficiency

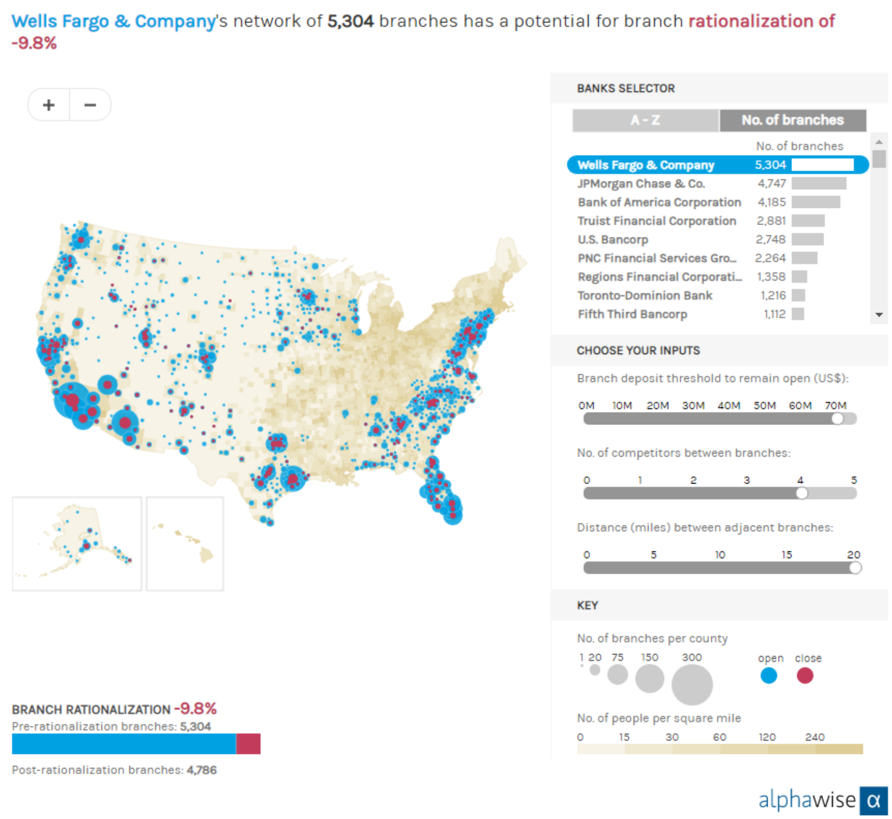
Shift to Mobile Banking

- Branch rationalization
- Headcount optimization
- Lower processing costs

Automation

- Use of more AI and robotic to improve:
  - Back office efficiency
  - Risk management
  - Reporting
  - Marketing
  - Customer service

We worked with *AlphaWise* to build an interactive tool for investors to measure branch rationalization potential across US banks.
More in our *Branch Rationalization Tool 3.0* note.



Source: SNL Financial, FDIC, AlphaWise, Morgan Stanley Research

4 Efficiency Improvement

Digitization the key lever to further efficiency

WFC tops our rankings of overall Consumer Banking app quality based on ratings and number of features

More in our *Which Banks Have The Best Mobile Apps* note.

Bank	MS SCORE Overall App Quality	Apple Rating	# of Apple Ratings	Google Play Rating	# of Google Play Ratings	50% of MS SCORE WAVG Rating	50% of MS SCORE # of Features	View Activity & Balances in App	Quick Balance (Without Log In)	Pay Bills	Mobile Check Deposit	Transfers	Custom Alerts	Zelle	Manage Rewards	Activate or Replace Cards	View Credit Score	Manage Travel Notices or Auto Detection	Apple Watch Support	Budgeting	Card-Free ATM Access	Wire Transfer	AI Digital Assist.
WFC	4.9	4.84	4,771,741	4.71	637,746	4.82		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	◐
COF	4.8	4.84	1,994,003	4.65	1,022,921	4.78		●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●
JPM	4.7	4.82	2,852,533	4.41	1,628,299	4.67		●	●	●	●	●	●	●	●	●	●	●	○	●	●	●	●
TFC (BBT app)	4.7	4.83	356,585	4.77	58,833	4.82		●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	○
DFS	4.7	4.84	2,804,561	4.51	168,134	4.82		●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	○
C	4.6	4.86	1,998,079	4.63	543,645	4.81		●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	○
BAC	4.5	4.81	2,406,437	4.69	756,302	4.78		●	○	●	●	●	●	●	●	●	●	○	●	●	●	○	●
USB	4.5	4.77	966,596	4.66	222,899	4.75		●	●	●	●	●	●	●	●	●	●	●	○	●	○	○	●
HBAN	4.3	4.85	153,762	3.87	28,849	4.70		●	●	●	●	●	●	●	●	●	●	○	○	●	○	○	●
*Chime	4.3	4.78	172,456	4.60	157,168	4.69		●	●	●	●	●	●	○	●	●	○	●	●	●	○	○	●
PNC	4.2	4.83	726,177	4.63	127,021	4.80		●	○	●	●	●	●	●	●	●	●	●	○	○	●	○	○
TFC (STI app)	4.0	4.11	12,726	4.16	63,783	4.15		●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○
KEY	4.0	4.43	21,442	3.85	23,334	4.13		●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○
CBSH	3.9	4.70	79,797	4.61	7,402	4.69		●	●	●	●	●	●	○	●	●	○	●	●	○	○	○	○
AXP	3.9	4.87	1,593,773	4.31	31,481	4.86		●	○	●	○	○	●	○	●	●	●	●	○	●	○	○	●
BOKF	3.8	4.87	16,549	3.89	1,487	4.79		●	○	●	●	●	●	○	○	●	○	●	○	○	●	●	○
VLY	3.8	4.77	6,093	4.51	1,912	4.71		●	●	●	●	●	●	○	○	●	○	●	●	○	○	○	○
*MoneyLion	3.8	4.65	59,998	3.80	34,179	4.34		●	○	●	●	●	●	○	●	●	●	○	○	●	○	○	●
FITB	3.8	4.26	18,159	4.34	40,483	4.32		●	●	●	●	●	●	●	○	●	○	○	○	○	●	○	●
PB	3.7	4.62	28,803	4.10	2,132	4.58		●	○	●	●	●	●	○	○	●	○	●	○	●	○	●	○
EWBC	3.7	4.68	2,269	4.31	1,016	4.57		●	●	●	●	●	●	○	○	●	○	○	○	○	○	●	●
*N26	3.7	4.60	4,839	4.55	75,472	4.55		●	○	○	○	●	●	○	●	●	○	●	●	●	○	○	●
FRC	3.7	4.84	31,409	3.96	738	4.82		●	○	●	●	●	●	●	○	●	○	●	○	○	○	○	○
SNV	3.6	4.75	6,013	4.62	2,447	4.71		●	●	●	●	●	●	○	○	○	○	○	●	●	○	○	○
RF	3.6	4.65	46,135	3.86	32,484	4.32		●	○	●	●	●	●	●	●	●	○	●	○	○	○	○	○

● Has feature
◐ Initial rollout of feature
○ Does not have feature

Note: Updated as of September 10, 2020. Apple app ratings reflect current version. Although BBT and STI merged into Truist Financial in Dec 2019 – they are reported separately above as both apps are still operational. Large Cap banks covered by Betsy Graseck. Midcap banks covered by Ken Zerbe.
Source: Company data, Apple Store, Google Play, App Annie, Morgan Stanley Research estimates

4 **Efficiency Improvement**

Digitization the key lever to further efficiency

WFC tops our rankings of overall Consumer Banking app quality based on ratings and number of features

More in our *Which Banks Have The Best Mobile Apps* note.

Bank	MS SCORE: Overall App Quality	Apple Rating	# of Apple Ratings	Google Play Rating	# of Google Play Ratings	50% of MS SCORE: WAVG Rating	50% of MS SCORE: # of Features	View Activity & Balances in App	Quick Balance (Without Log In)	Pay Bills	Mobile Check Deposit	Transfers	Custom Alerts	Zelle	Manage Rewards	Activate or Replace Cards	View Credit Score	Manage Travel Notices or Auto Detection	Apple Watch Support	Budgeting	Card-Free ATM Access	Wire Transfer	AI Digital Assist.
TCF	3.6	4.71	39,571	4.25	18,117	4.57		●	●	●	●	●	●	○	○	○	○	○	●	●	○	○	○
FHN	3.6	2.46	790	4.26	3,222	3.91		●	●	●	●	●	●	●	●	○	○	○	●	●	○	○	○
ALLY	3.5	4.75	26,058	3.98	15,869	4.46		●	○	●	●	●	●	●	○	○	○	○	○	●	○	○	●
CIT	3.5	4.63	5,280	3.72	1,383	4.44		●	○	●	●	●	●	●	○	○	○	●	○	○	○	●	○
PBCT	3.5	4.77	85,721	4.35	9,007	4.73		●	○	●	●	●	●	○	○	○	○	○	●	●	○	○	○
*Current	3.5	4.70	37,594	4.64	23,374	4.68		●	○	○	●	●	●	○	●	●	○	○	○	●	○	○	○
*Varo	3.5	4.76	50,104	4.52	26,710	4.68		●	○	●	●	●	●	○	○	●	○	○	○	●	○	○	○
MTB	3.4	3.07	1,455	4.14	9,281	3.99		●	○	●	●	●	●	●	●	●	○	○	○	●	○	○	○
*GoBank	3.4	4.24	4,428	4.25	13,825	4.25		●	○	●	●	●	●	○	○	●	○	○	●	●	○	○	○
WBS	3.4	4.56	10,888	4.29	1,274	4.53		●	○	●	●	●	●	○	○	○	○	●	○	○	○	●	○
*Dave	3.3	4.79	366,011	4.63	299,585	4.72		●	○	●	○	●	●	○	○	●	○	○	○	●	○	○	○
*Simple	3.3	4.54	9,911	4.18	10,755	4.35		●	○	●	●	●	●	○	○	●	○	○	○	●	○	○	○
BKU	3.3	4.73	1,028	4.37	508	4.61		●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
*Venmo	3.2	4.88	9,582,342	4.44	376,772	4.86		●	○	○	○	●	●	○	●	●	○	○	○	○	○	○	○
CFR	3.2	3.55	332	4.26	2,789	4.18		●	○	●	●	●	○	●	○	○	○	●	●	○	○	○	○
SIVB	3.2	4.87	252	4.56	48	4.82		●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
*SQ Cash	3.2	4.52	390,043	4.18	230,028	4.39		●	○	●	○	●	●	○	○	●	○	○	●	○	○	○	○
NYCB	3.1	4.13	557	3.37	628	3.73		●	●	●	●	●	●	●	○	○	○	○	○	●	○	○	○
*Qapital	3.1	4.81	70,734	4.11	18,920	4.66		●	○	●	○	●	●	○	○	○	○	○	○	●	○	○	○
SYF	3.1	4.29	146	3.76	215	3.97		●	●	●	●	●	●	○	●	○	○	○	○	○	○	○	○
OZK	3.1	4.59	3,917	3.14	3,324	3.92		●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○
CMA	3.1	2.63	388	4.07	2,510	3.88		●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○
CFG	2.5	2.44	5,291	2.79	29,664	2.74		●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○
CADE	2.5	2.44	52	3.48	281	3.32		●	○	●	●	●	○	○	○	○	○	○	○	●	○	○	○
ZION	2.4	4.01	1,442	2.75	2,400	3.22		●	○	●	●	●	○	●	○	○	○	○	○	○	○	○	○
SBNY	2.0	2.29	17	3.29	17	2.79		●	○	●	●	●	○	○	○	○	○	○	○	○	○	○	○

*FinTech

● Has feature
◑ Initial rollout of feature
○ Does not have feature

Note: Updated as of September 10, 2020. Apple app ratings reflect current version. Although BBT and STI merged into Truist Financial in Dec 2019 – they are reported separately above as both apps are still operational. Large Cap banks covered by Betsy Graseck. Midcap banks covered by Ken Zerbe.
Source: Company data, Apple Store, Google Play, App Annie, Morgan Stanley Research estimates

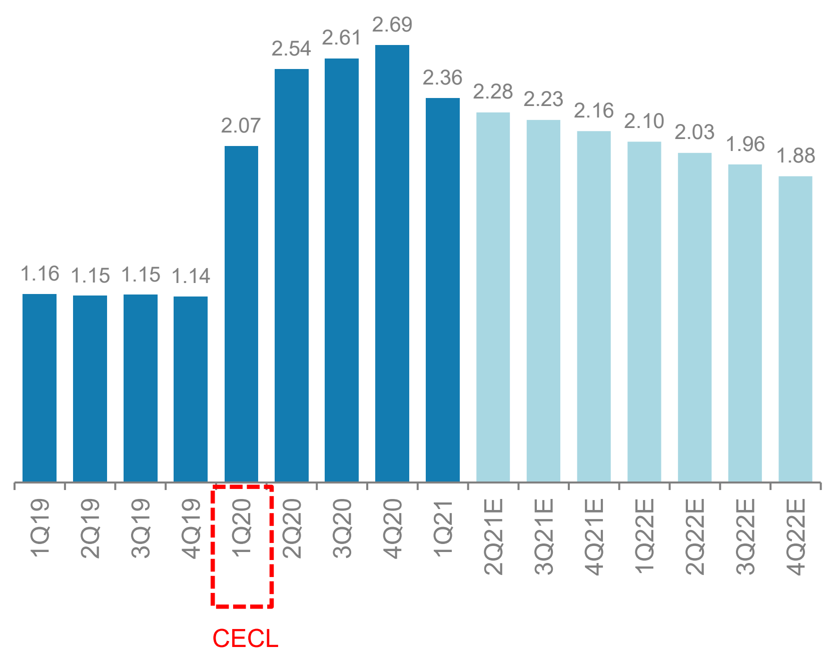
5 **Loan Losses Moderating**

We expect loan losses to peak in 1Q22

We expect NCOs to peak in 2Q21…	…and reserve ratio to decline through 2022

Large Cap Banks Median NCO Ratio (%)

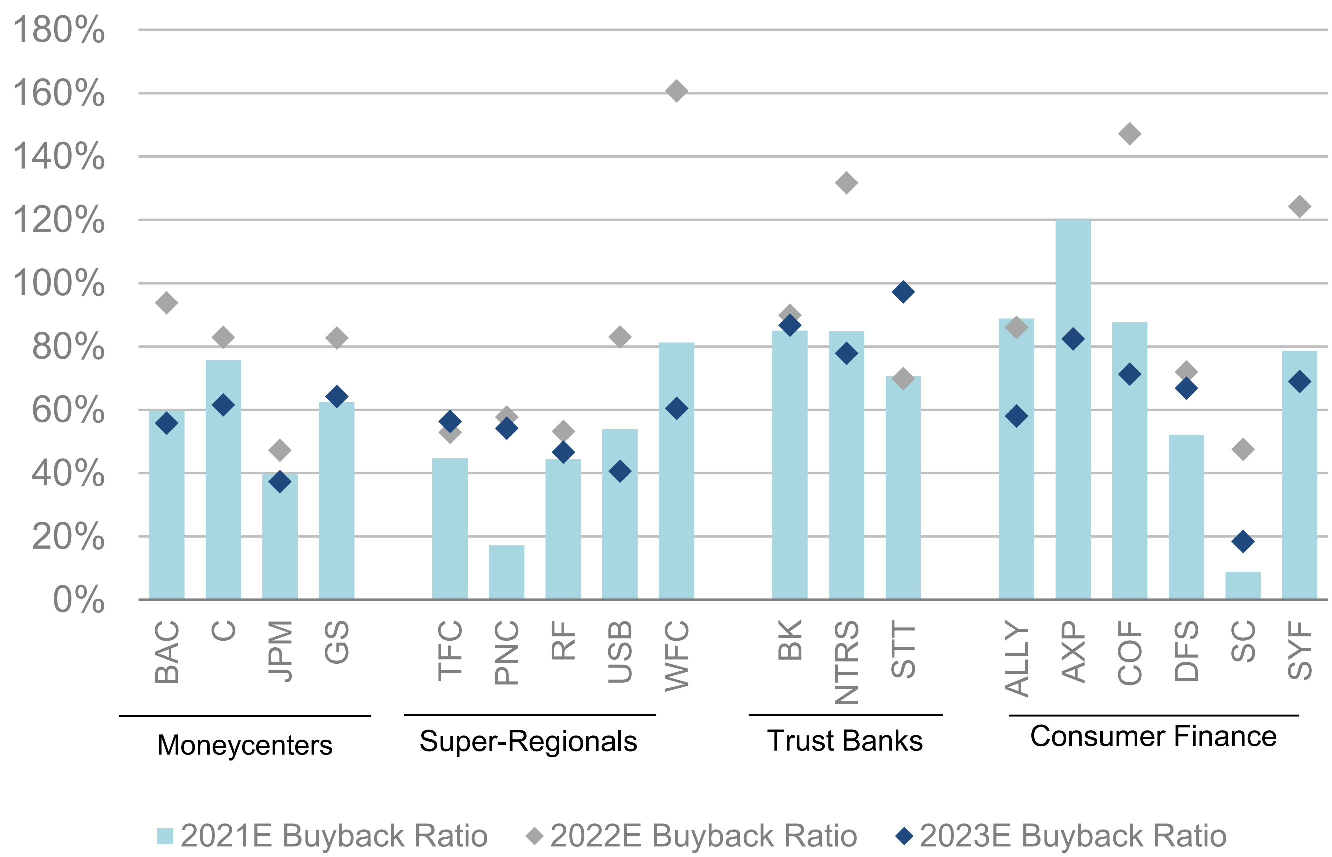
Large Cap Banks Median Reserve Ratio (%)



Note: 2020 reserve ratio increases due to CECL Accounting Standard.
Source: Company data, Morgan Stanley Research estimates

6 Buybacks Accelerate

We model buybacks accelerate into 2H21, with a median 83% buyback ratio in 2022



Source: Company data, Morgan Stanley Research estimates

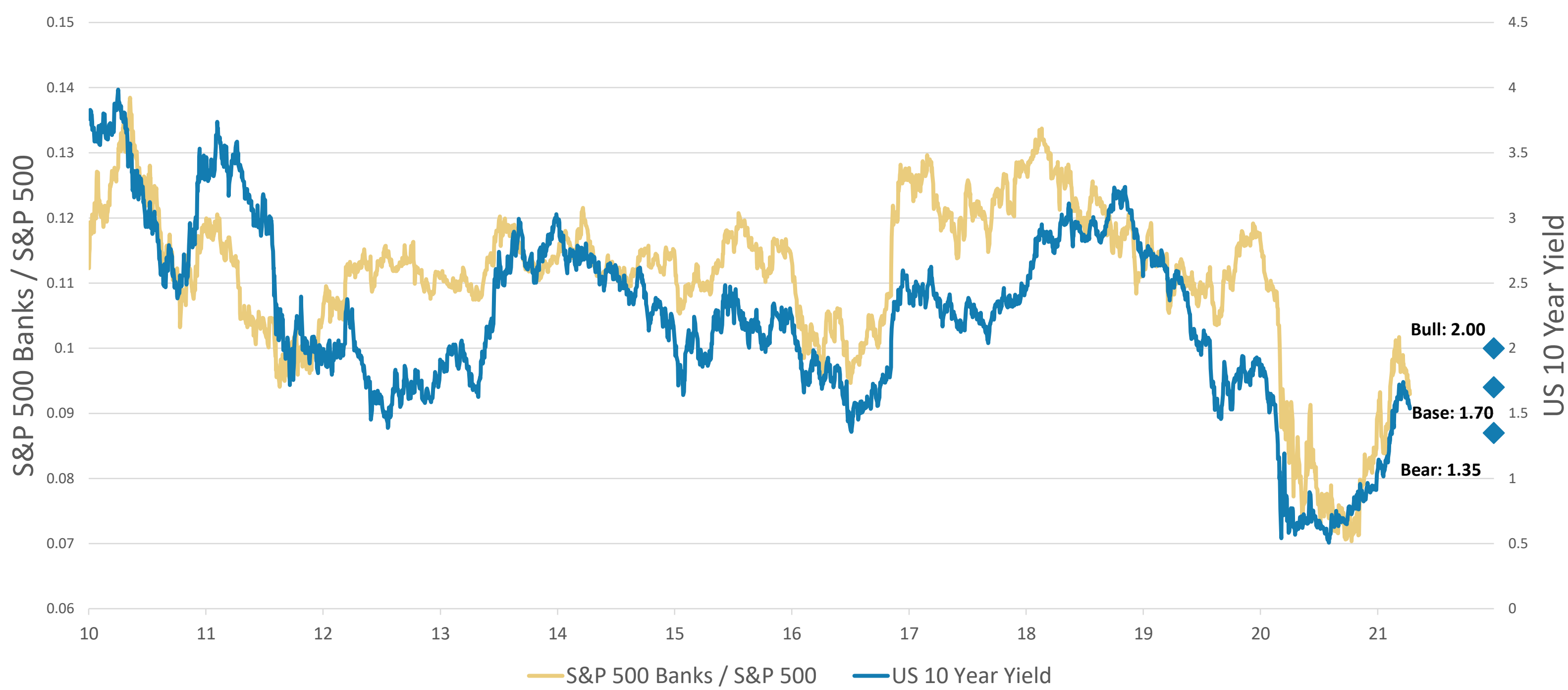
Key Debates

Key Debate – What's Left for the Banks?

1	**Higher Yields Drive Bank Outperformance**
2	**Attractive Relative Valuation**
3	**Bank Earnings to Increase**
4	**Positive Positioning and Momentum**

Investor Debate #1: Higher Yields to Drive Bank Outperformance

Bank stocks outperform when the 10 year yield is rising



Note: 10 Year Yield Bull/Base/Bear Case are as per MS Interest Rate Strategist for Year End 2021. Bank team 10yr bull case is our interest rate strategist's bear case; bank team bear case is interest rate strategist's bull case.
Source: Bloomberg, Morgan Stanley Research estimates.

Investor Debate #2: Attractive Relative Valuation

Banks trading at a significant discount to the market

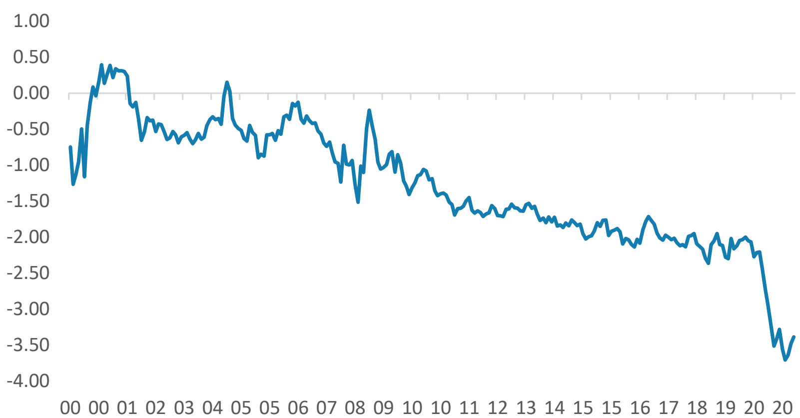
	Price / Fwd Earnings		Price / Tangible Book	
	Current	20yr p-tile	Current	20yr p-tile
Market	**22.9x**	**0.93**	**5.2x**	**0.99**
Communication Services	24.8x	0.75	7.8x	0.93
Consumer Discretionary	35.8x	0.97	10.9x	0.98
Consumer Staples	21.0x	0.98	9.0x	0.94
Energy	21.3x	0.85	2.0x	0.18
Financials	15.0x	0.94	1.8x	0.54
Health Care	18.2x	0.66	11.1x	0.73
Industrials	26.9x	1.00	9.3x	1.00
Information Technology	27.7x	0.86	19.0x	0.98
Materials	19.6x	0.90	6.2x	0.93
Real Estate	20.9x	1.00	3.1x	0.95
Utilities	18.0x	0.91	2.9x	0.97
Banking Coverage Universe	**13.5x**	**0.81**	**1.8x**	**0.50**
Consumer Finance	12.1x	0.44	2.1x	0.45
Large-Cap Banks	13.8x	0.90	1.8x	0.49
Mid-Cap Banks	14.6x	0.65	1.9x	0.53

Source: Bloomberg, ClariFi, Morgan Stanley Research

Valuation spreads vs. the market are very compressed on both a P/E and P/TBV basis

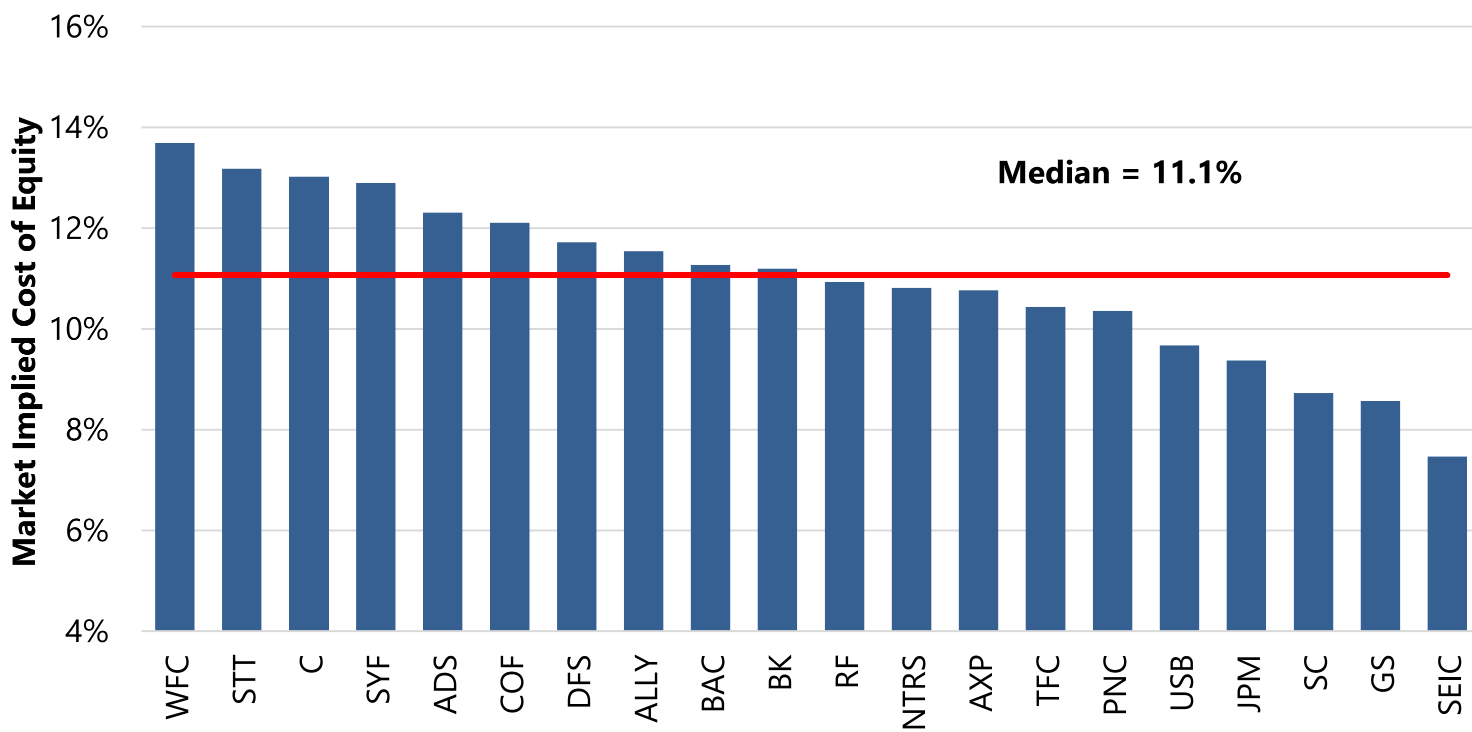
Fwd P/E Spread
Between the Banking Coverage Group and the Market

Price / Tangible Book Spread
Between the Banking Coverage Group and the Market



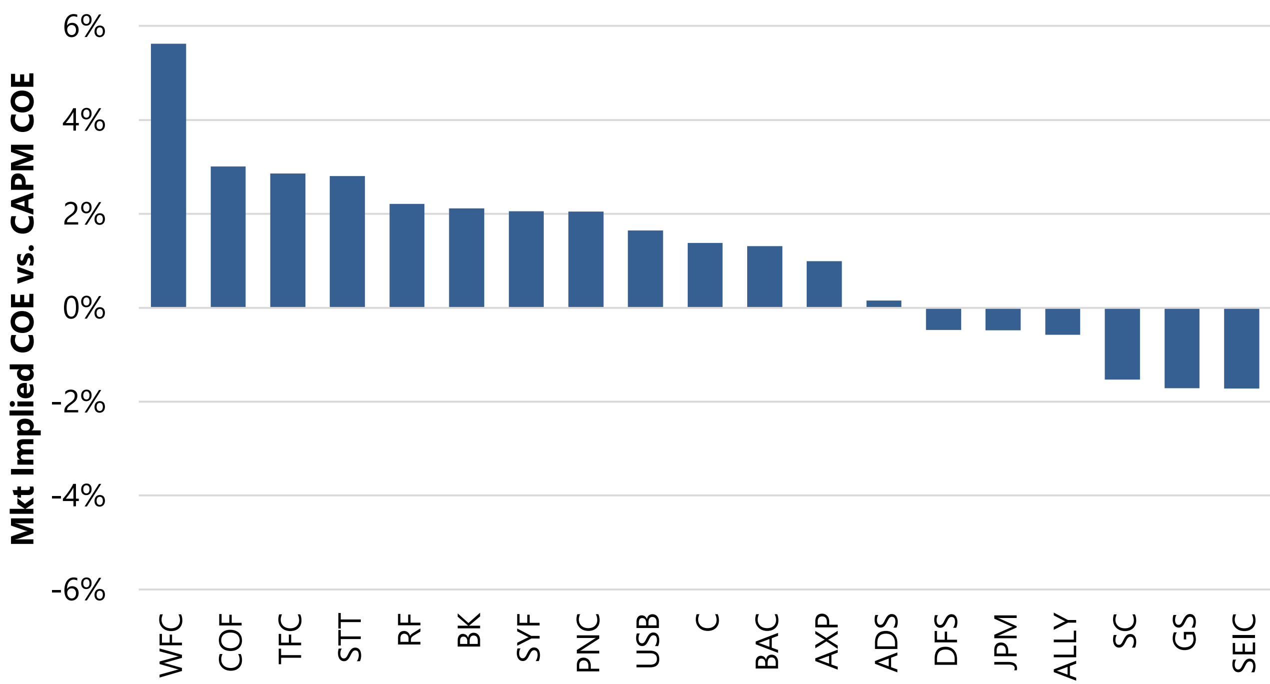
Source: Bloomberg, ClariFi, Morgan Stanley Research

LC Banks market implied Cost of Equity



Source: Company data, Thomson Reuters, Morgan Stanley Research estimates

Majority of our coverage is trading with a higher market implied COE vs. historical CAPM COE

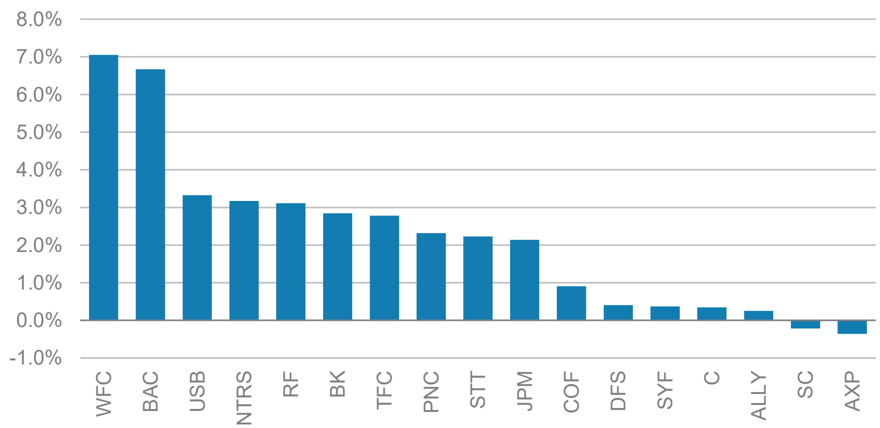


Note: CAPM based on max beta from Bloomberg
Source: Company data, Thomson Reuters, Bloomberg, Morgan Stanley Research estimates

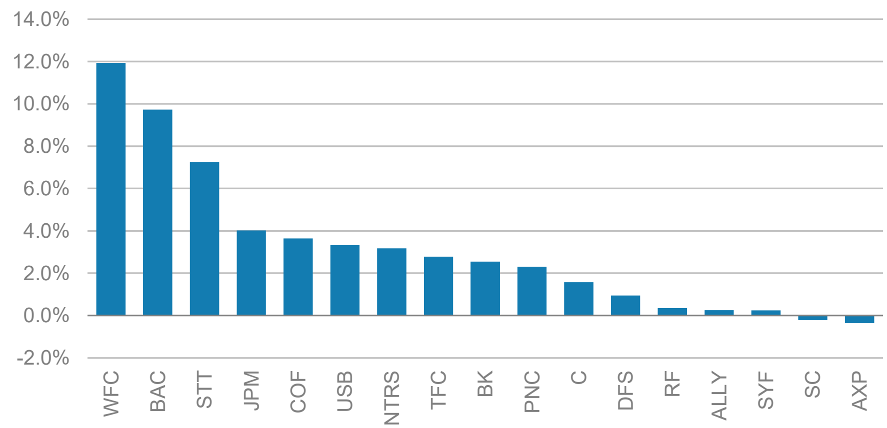
Investor Debate #3: Bank Earnings to Increase

We estimate WFC and BAC EPS benefit most to increases in both the long and short end of the curve

Impact to 2021 EPS if 10yr Trsy Yield Increases by 50bp
(All Impacts Drop to the Bottom Line)



Impact to 2021 EPS if Fed Funds Increases by 50bp
(All Impacts Drop to the Bottom Line)

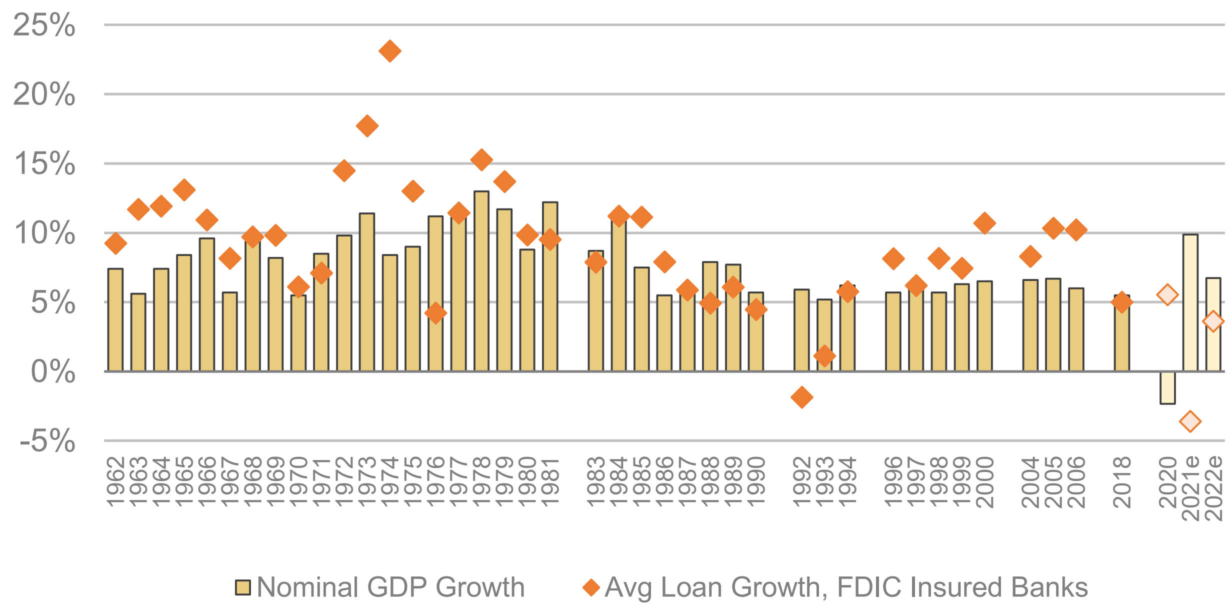


Note: 1) Our EPS impact from higher 10yr yield is based on 4Q20 company NII sensitivity disclosures. 2) We use disclosed instantaneous NII impacts for: BAC, C, JPM, WFC, USB, STT, AXP, COF, DFS, SYF, and SC. We use disclosed gradual NII impacts for: TFC, PNC, RF, BK, NTRS, and ALLY. 3) We estimate the NII impact from long end rates if not disclosed separately.

Source: Company data, Morgan Stanley Research estimates.

Higher GDP Suggests Upside to Loan Growth

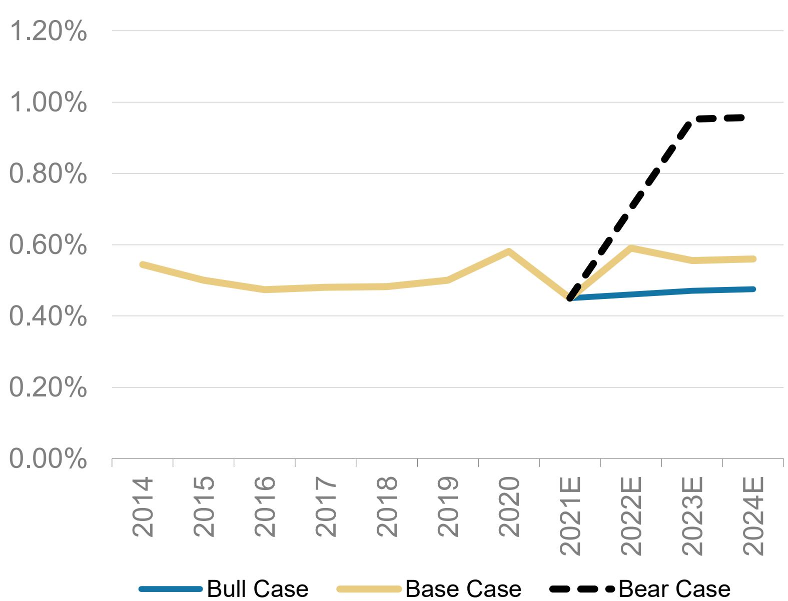
Years when nominal GDP growth was above 5%



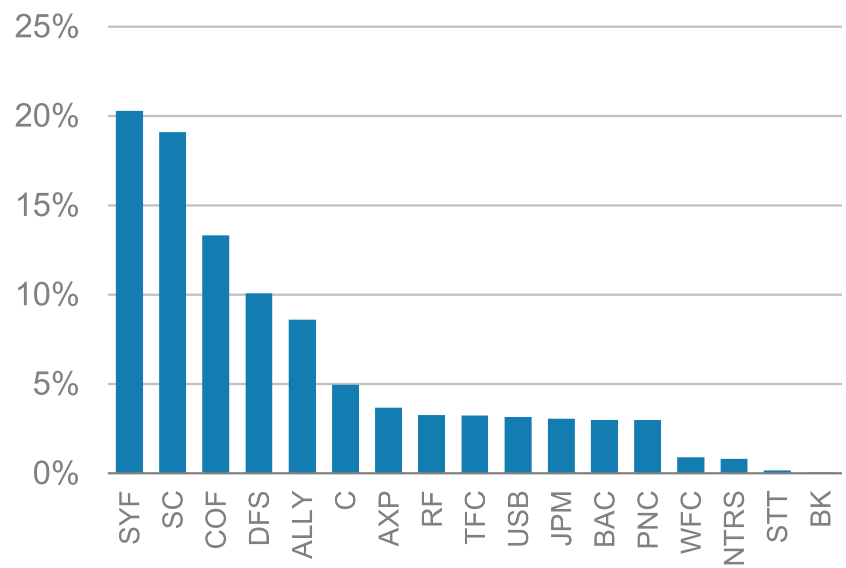
Notes: GDP growth shown as year over year. Morgan Stanley forecasts are from US Economist Ellen Zentner.
Source: FDIC, Bureau of Economic Analysis, Morgan Stanley Research estimates, Morgan Stanley Research estimates

Bull Case for Net Charge Offs result in median +3.2% to 2023 EPS

Net Charge Off Forecast (%)



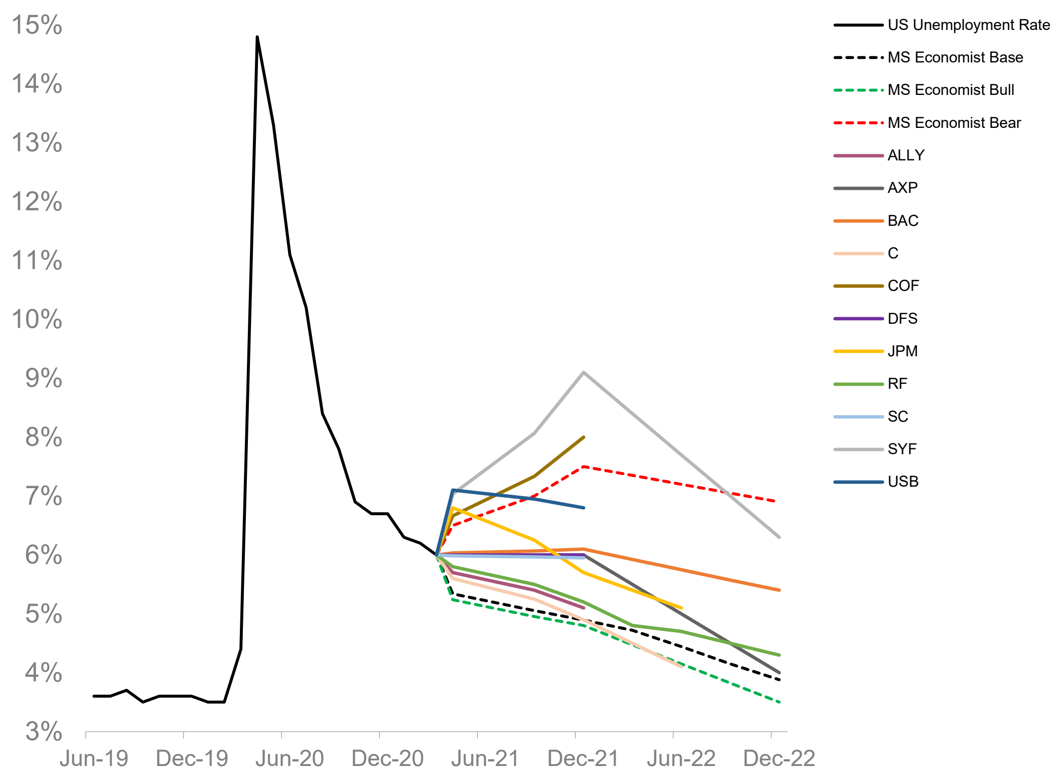
EPS Benefit from Bull Case NCOs (2023E)



Source: Company data, Morgan Stanley Research estimates

With more reserve bleed to come… as banks use higher UE rates in reserving methodology than our economist currently estimates for YE 2021 and 2022

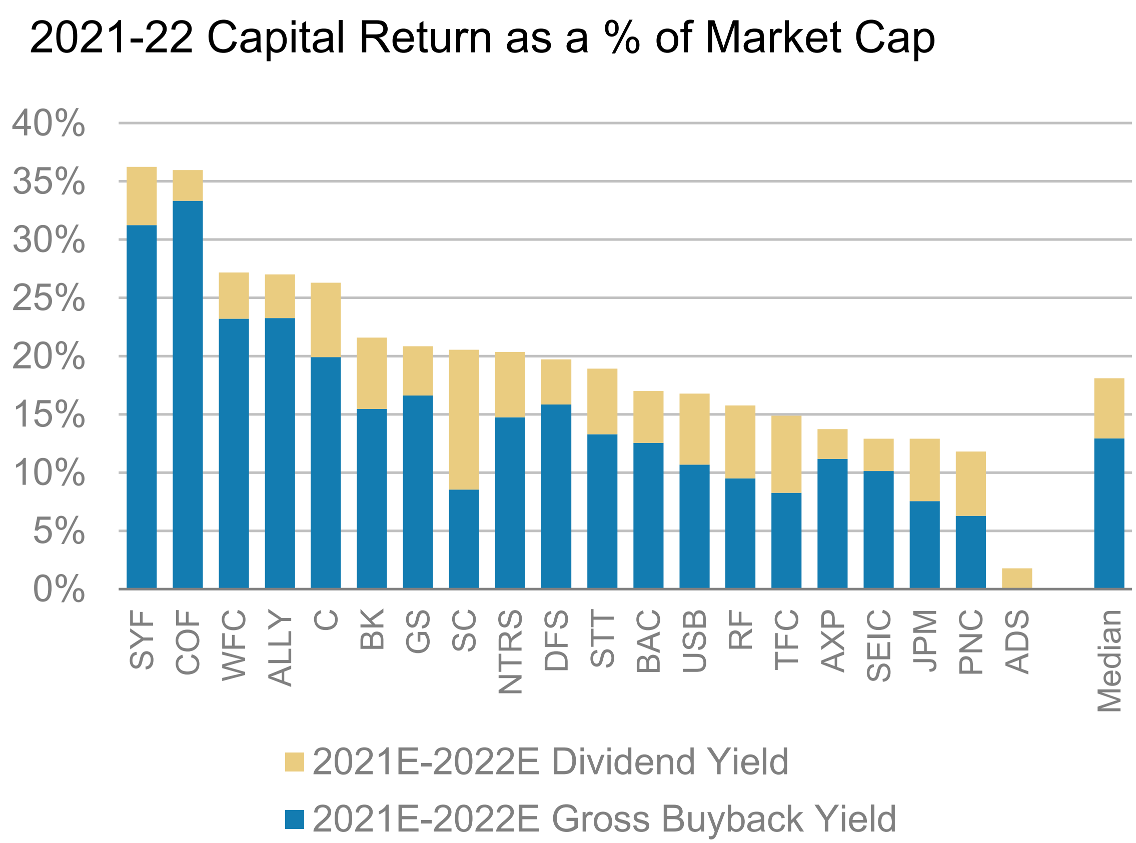
Unemployment rate: MS estimate vs. bank estimate used in reserve build



Note: Unemployment scenarios for ALLY, AXP, BAC, C, DFS, RF, SC as of 1Q21; for COF, JPM, USB as of 4Q20; SYF as of 3Q20.
Source: Company data, Morgan Stanley Research estimates

Buybacks to accelerate

We expect banks to return a median 18% of market cap over the next 2 years

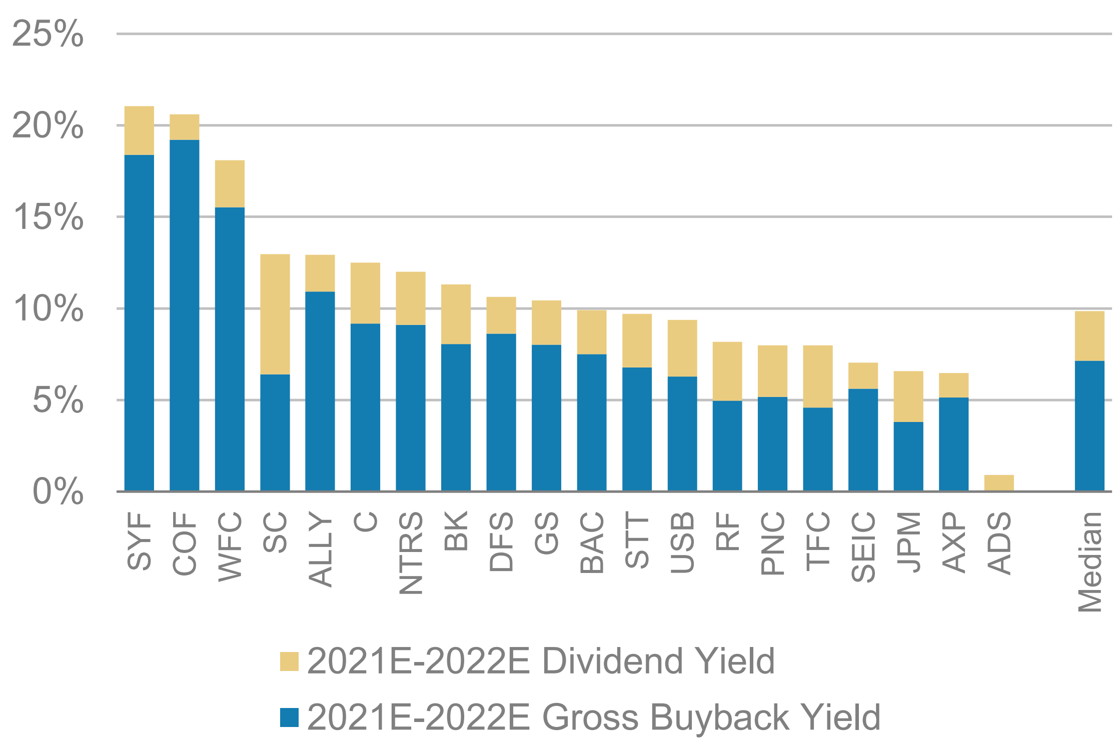


Notes: Market Cap as of 4/29/2021
Source: Thomson Reuters, Company data, Morgan Stanley Research estimates

Buybacks to accelerate

With a median 7% buyback yield and 3% dividend yield in 2022e

2022 Capital Return as a % of Market Cap



Notes: Market Cap as of 4/29/2021
Source: Thomson Reuters, Company data, Morgan Stanley Research estimates

Investor Debate #4: Positive Positioning and Momentum

Net exposure to financials within long-short community remains light

Sector Level Net Exposures & Percentile Rank Since Jan '10

Sector	Current Net Exp	%-tile Rank Since '10	12M %-tile Rank
Communication Services	16.7%	64%	49%
Consumer Discretionary	15.5%	73%	64%
Consumer Staples	-1.0%	4%	0%
Energy	1.5%	10%	100%
Financials	6.6%	2%	26%
Health Care	15.5%	66%	32%
Industrials	9.1%	82%	99%
Info Tech	32.2%	94%	39%
Materials	2.9%	17%	100%
Real Estate	0.6%	56%	25%
Utilities	0.4%	15%	8%

Financials should benefit from momentum shift underway

Net Sector Weight within Momentum Portfolios

	12m Mom	9m Mom	6m Mom
Communication Services	3%	3%	4%
Consumer Discretionary	29%	21%	24%
Consumer Staples	-23%	-15%	-20%
Energy	8%	1%	4%
Financials	11%	14%	12%
Health Care	-15%	-21%	-19%
Industrials	6%	15%	16%
Information Technology	6%	-2%	2%
Materials	7%	4%	3%
Real Estate	-10%	-7%	-7%
Utilities	-22%	-13%	-19%

Note: Data as of 3/31/2021. Exhibit 1 – HF Net Exposure to North America Sectors as % of Total North America net exposure
Source: Morgan Stanley Prime Brokerage, Bloomberg, ClariFi, Morgan Stanley Research

Valuation

May 2021

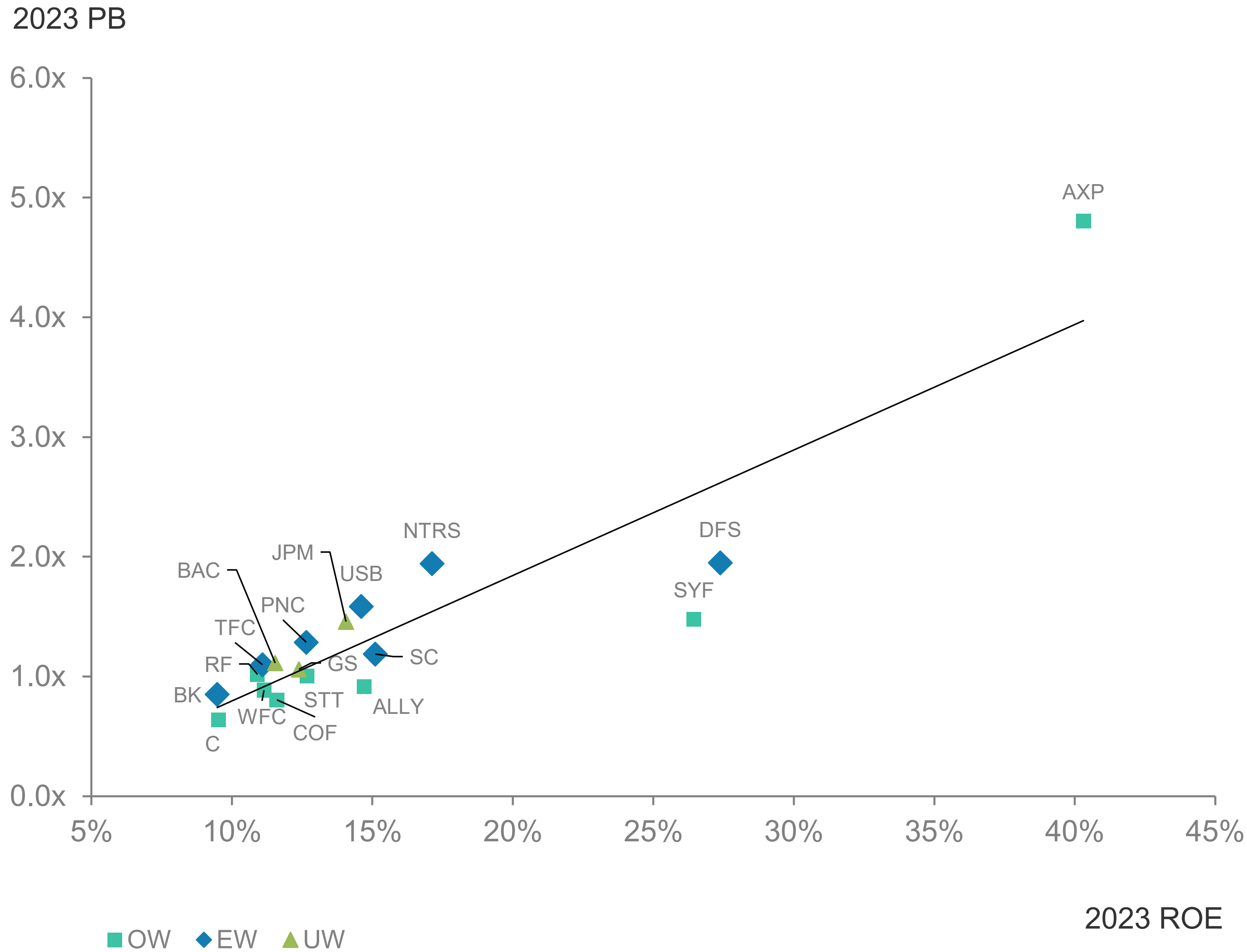
8 Ways to Value Bank Stocks

1. Forward P/E Multiple (Absolute & Relative)
2. P/E vs. EPS Growth
3. Forward P/B Multiple (Absolute & Relative)
4. P/B vs. ROE
5. Residual Income
6. Price / Total Assets Per Share
7. Price / PPNR (Pre-Provision Net Revenue)
8. Price / EPS Less Reserve Build (Bleed)

Deconstructed P/E Multiple

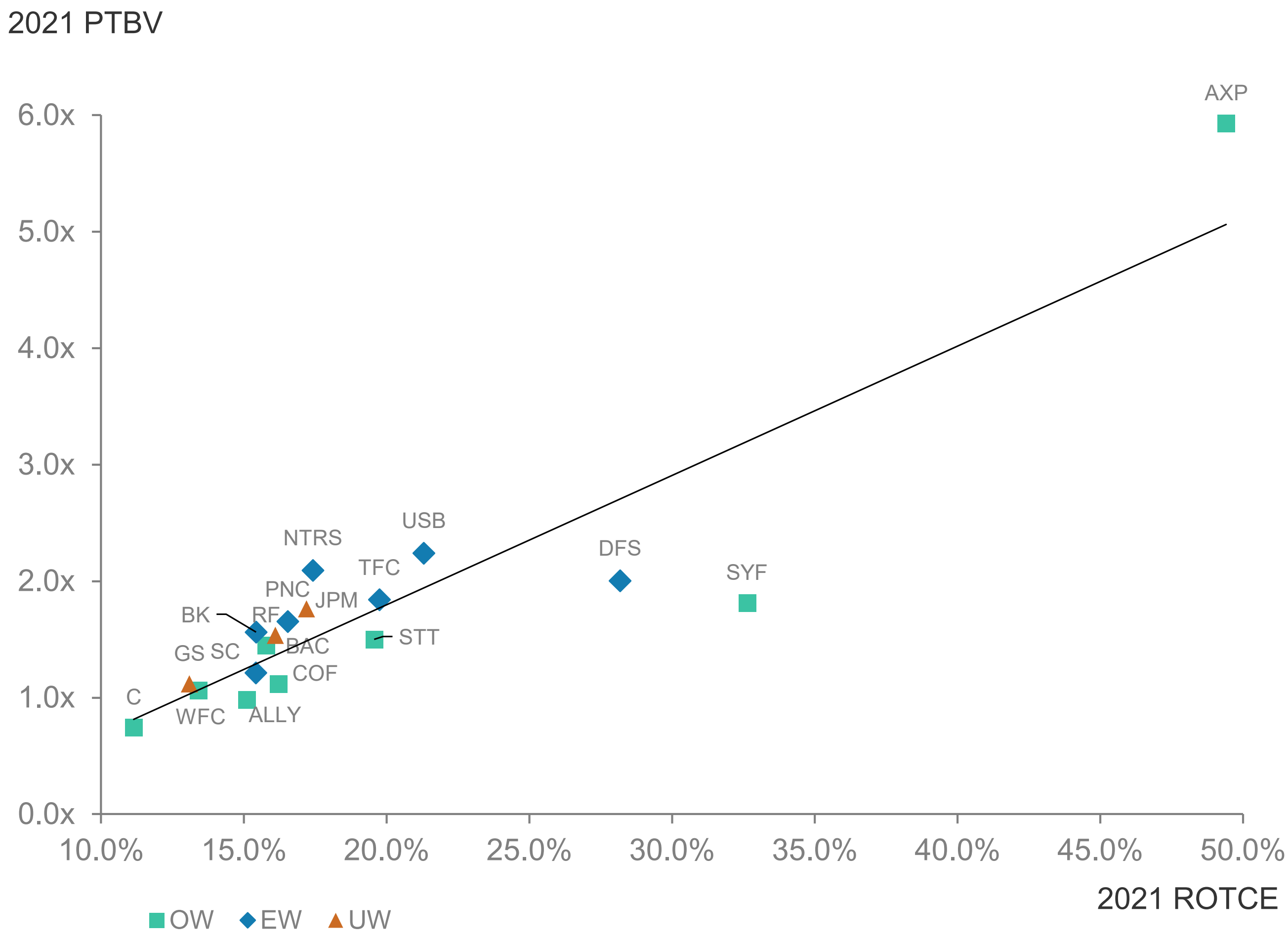
Source: Morgan Stanley Research

50% of Our OW Names Trading Below 2023 Book Value



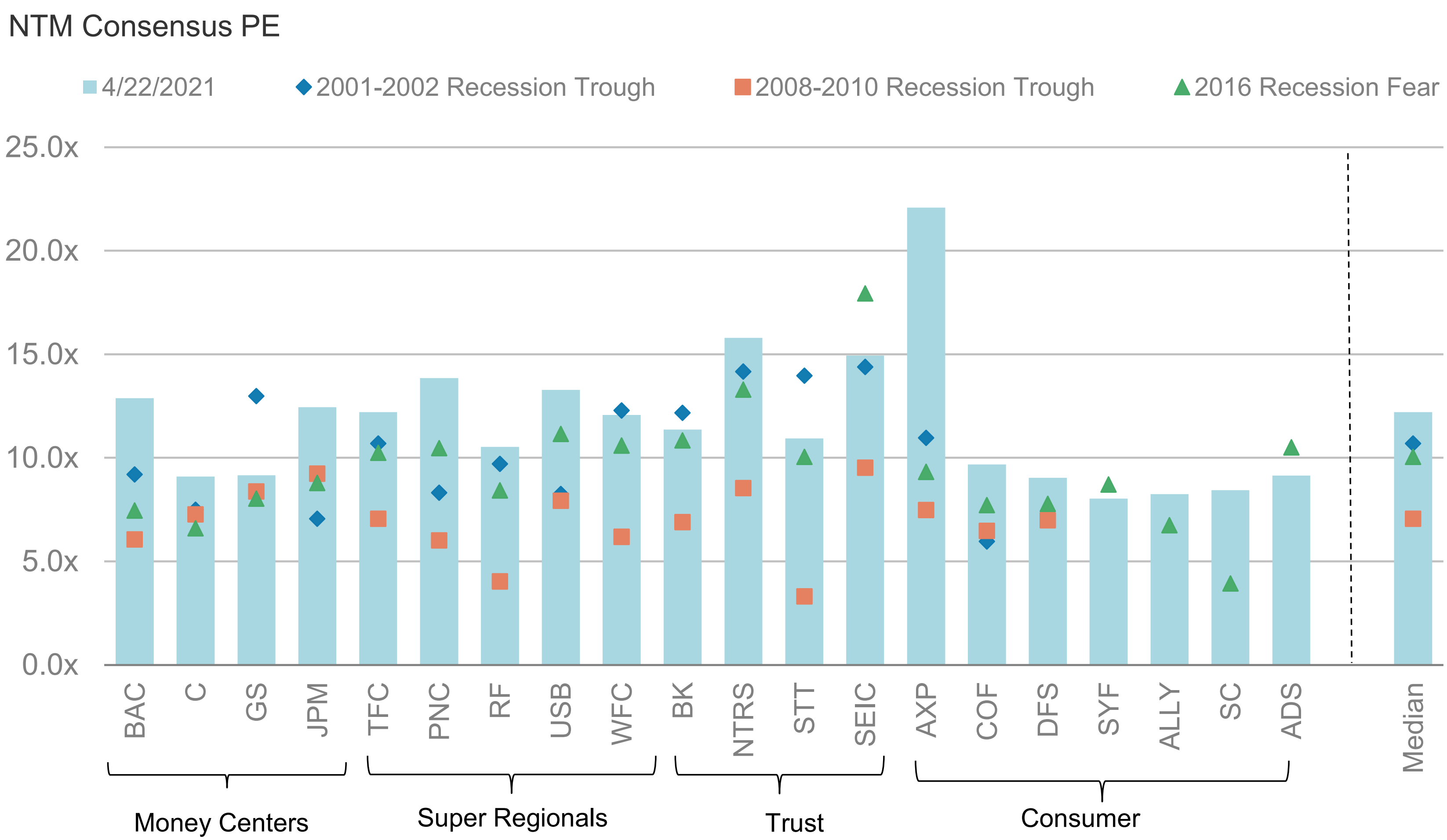
Source: Thomson Reuters, Company data, Morgan Stanley Research estimates

And 40% of Our OW Names Trading Below 2023 Tangible Book



Source: Thomson Reuters, Company data, Morgan Stanley Research estimates

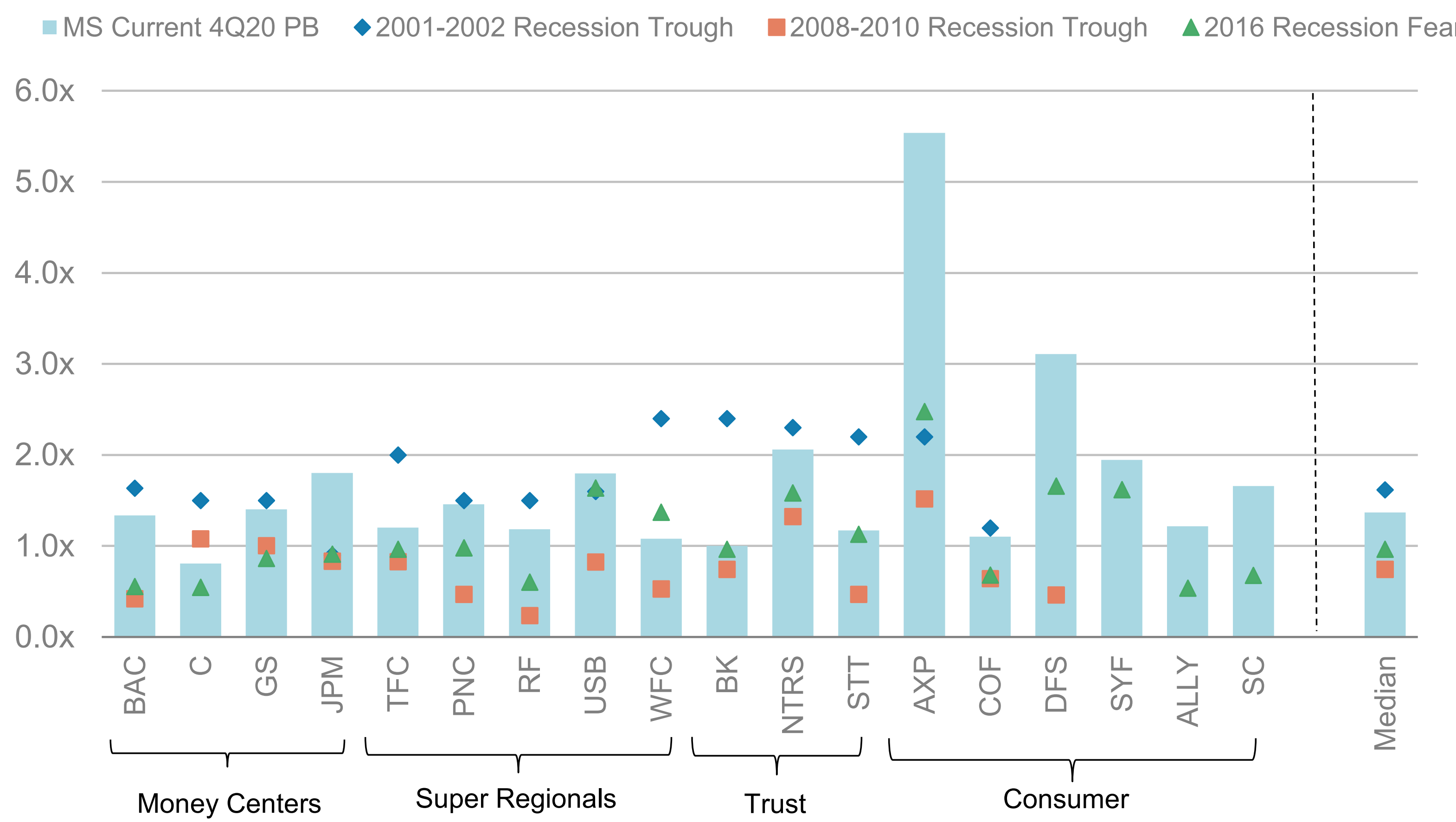
Majority of Large Cap Banks Trading Above 2001-02 Recession P/E Troughs…



Note: Historical data from prior recessions use NTM Consensus PE.
Source: Thomson Reuters, Company data, Morgan Stanley Research estimates

…But Below 2001-02 P/B Levels

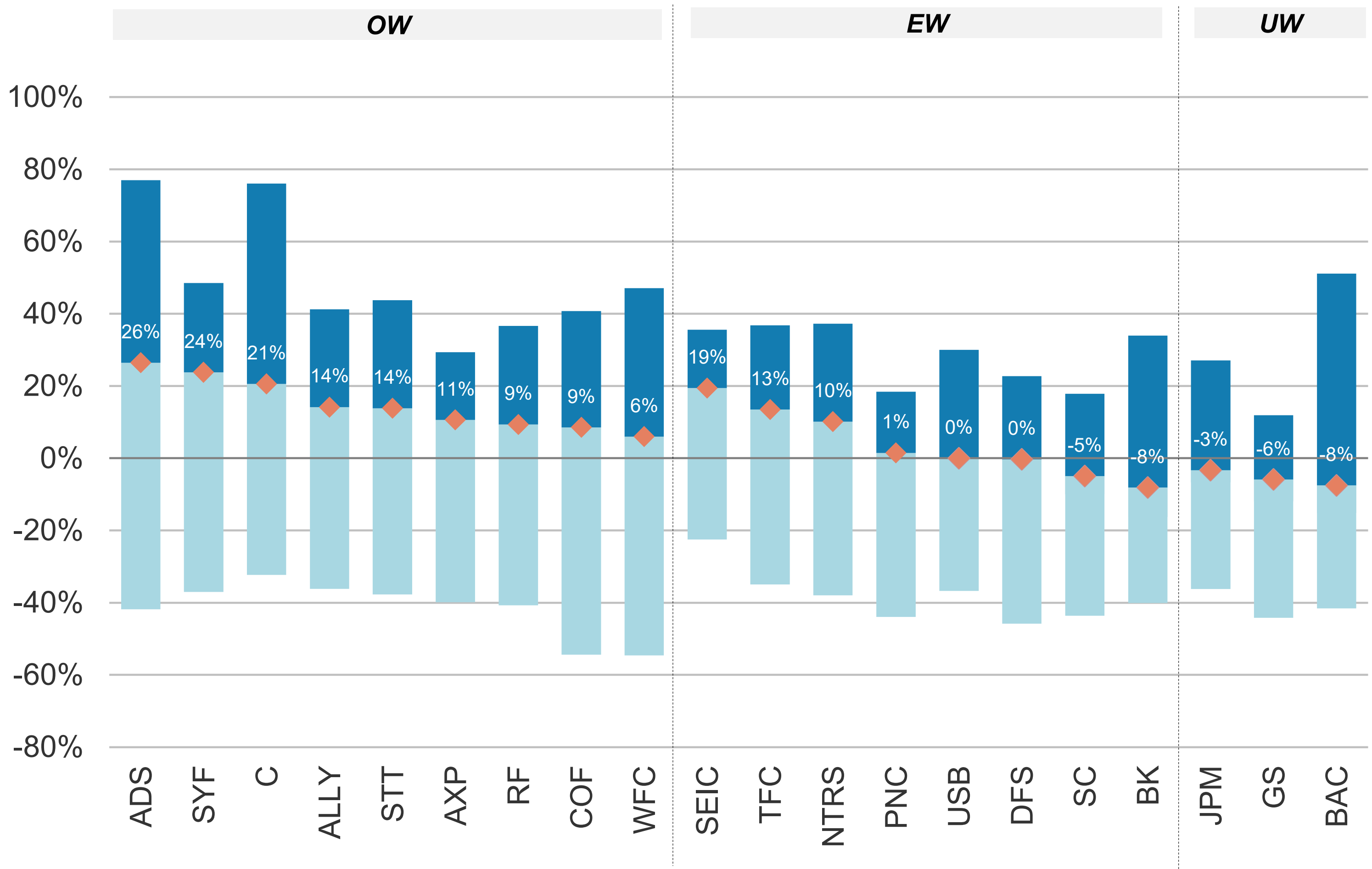
PB vs. Recession Troughs



Note: Historical data from 2008-10 and 2016 use NTM Consensus PB. We calculate 2001-02 recession data using reported FY1 BVPS consensus estimates are not available. Historical PB values use same date as PE trough in prior slide.
Source: Thomson Reuters, Company data, Morgan Stanley Research estimates

Median 14% upside across our Overweight names

Price Target Upside (%)

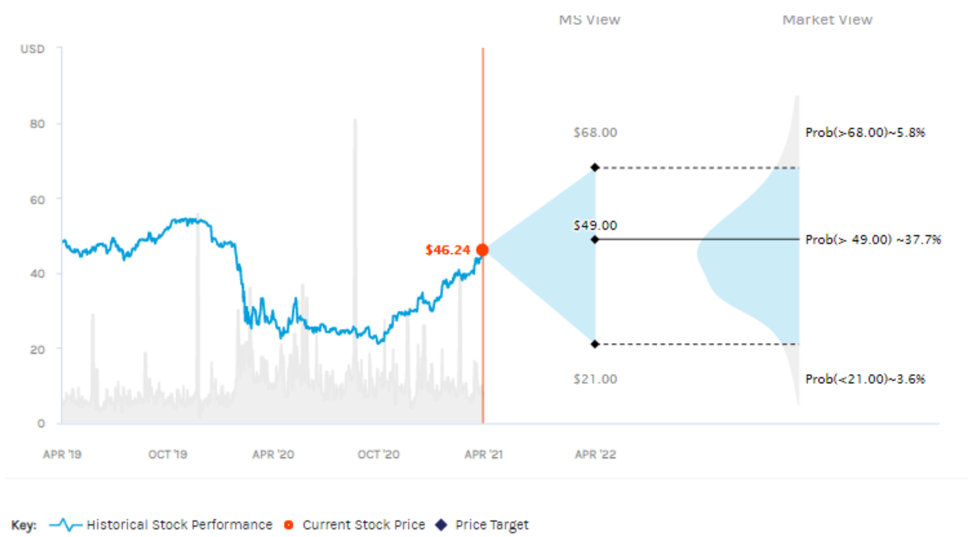


Note: Data as of April 29, 2021
Source: Thomson Reuters, Company data, Morgan Stanley Research estimates

Top Picks

Wells Fargo Risk Reward (WFC.N)

Restructuring in the Making



Source: Thomson Reuters, Morgan Stanley Research. Stock price as of April 29, 2021

Price Target 10.5x Base Case 2023e EPS of $5.14 discounted back 10%	**$49**
Bull 10.5x Bull Case 2023e EPS of $7.17 discounted back 10%	**$68**
Base 10.5x Base Case 2023e EPS of $5.14 discounted back 10%	**$49**
Bear 9x Bear Case 2023e EPS of $2.68 discounted back 10%	**$21**

Why Overweight

- WFC appears to be beginning to take action to restructure its business mix as it works to exit the Fed consent order / asset cap and reduce its expense base. While uncertainty remains around impact of business exits and timing of consent order / asset cap exit, we believe risk more than accounted for in the stock at 9x our 2022e EPS.
- WFC benefit to EPS from rising long end rates is the highest in the group, with each ~50bps increase in the 10yr driving ~4% to NII and as much as ~8% to EPS
- We model WFC driving their expense ratio down to 64% by 2023 on reduced risk and compliance spend, operational efficiencies, and branch optimization. Lower expense ratio possible.

Investment Drivers

- Details on new CEO's strategic priorities and financial targets
- Exiting Fed consent order, lifting of asset cap
- Managing expenses while making necessary investments in compliance
- NII outlook as long end rates increase

Risks to Achieving Price Target

- Fed does not lift asset cap until well into 2022+
- Lower than expected operating leverage
- 10 year yield below expectations
- Macro environment remains challenging through 2021

Citigroup Risk Reward (C.N)

Deep Value in an Improving Economy

Source: Thomson Reuters, Morgan Stanley Research. Stock price as of April 29, 2021

Price Target
10.5x our Base Case 2023 EPS of $9.60 discounted back 10% — **$89**

Bull
10.5x our Bull Case 2023 EPS of $13.61 discounted back 10% — **$130**

Base
10.5x our Base Case 2023 EPS of $9.60 discounted back 10% — **$89**

Bear
10x our Bear Case 2023 EPS of $5.57 discounted back 10% — **$50**

Why Overweight

- Citi is trading at just 0.8x NTM BVPS implying through the cycle ROE of just 8%, well below our 9.5% estimate for 2023.
- We believe the stock is cheap even if expenses related to the Fed/OCC consent order remain elevated. We have modeled in expenses rising to $45B / $44B for 2021 / 2022 well above $42B in 2019.
- Citi also has #1 share in Transaction Banking, a business we estimate delivers a ~35% ROTCE for Citi. We believe Citi can add $17 a share in value by disclosing full quarterly details on this business. We bake half in $8, as Citi discloses half of what we would like to see
- Citi should get more credit for its global diversification and it's more resilient wholesale business.

Investment Drivers

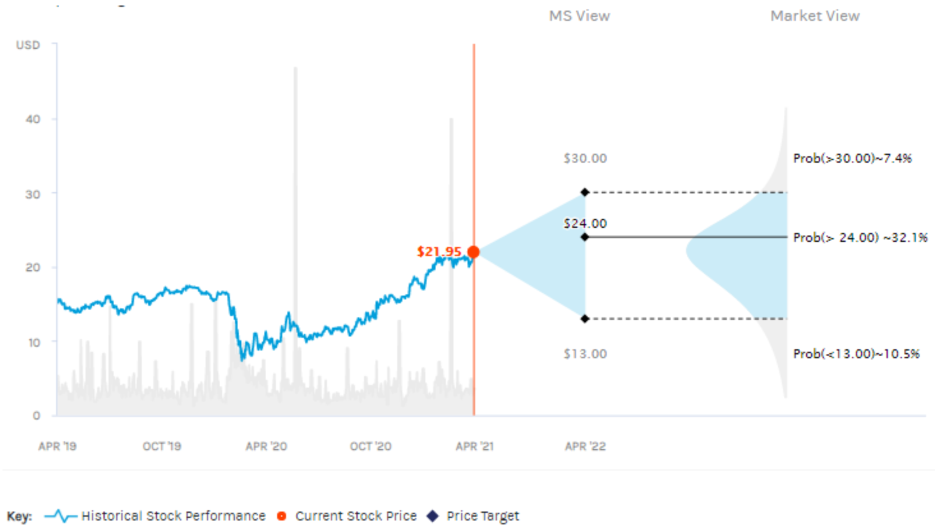
- New CEO strategy
- Expense Management
- Share repurchases
- Macro / rates
- Emerging Market recovery

Risks to Achieving Price Target

- Investment spend needed for consent order up another $1B annually
- Virus resurgence weakens global growth
- Stock market correction
- Slower loan growth
- Inability to optimize capital

Regions Financial Risk Reward (RF.N)

Winning the Battle Against the Curve



Source: Thomson Reuters, Morgan Stanley Research. Stock price as of April 29, 2021

Price Target
12.5x Base Case 2023e EPS of $2.10 discounted back 10% — **$24**

Bull
12.5x Bull Case 2023e EPS of $2.64 discounted back 10% — **$30**

Base
12.5x Base Case 2023e EPS of $2.10 discounted back 10% — **$24**

Bear
10x Bear Case 2023e EPS of $1.49 discounted back 10% — **$13**

Why Overweight

- Win win for RF no matter the rate environment, as hedges add ~30bps to NIM and ~2% pts to ROE. Hedges more valuable if rates decrease further, if long end steepens RF still benefits as fixed rate loans and securities reprice
- This stability is inherent in RF's business model over the next ~4 years, lowering RF's COE and driving PE multiple expansion back to their 2017-19 avg
- Management targeting increased efficiency through the Simplify & Grow program driving positive operating leverage in 2022-23 and RF's expense ratio to ~55% by 2023
- Multiple expansion, positive operating leverage, and lower credit costs as Covid-19 vaccine is distributed through 2021 drive our Overweight rating

Investment Drivers

- Multiple expansion on earnings stability
- Efficiency improvements from Simplify & Grow program
- Accelerating loan growth
- Accretive M&A in fee businesses

Risks to Achieving Price Target

- Significantly higher loan losses
- Slower pace of operating leverage
- Rising competition compresses C&I spreads
- Loan growth decelerates
- 10 year yield below expectations

Morgan Stanley

May 2021

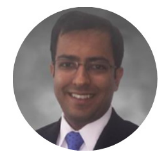
FOUNDATION

Financials Spring Training Teach-In

Midcap Advisors

MORGAN STANLEY RESEARCH
North America

Morgan Stanley & Co. LLC



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Overview of Midcap Advisors

1 Overview of Midcap Advisors

There Are Several Different Types of Advisors

US Bulge Bracket

Goldman Sachs

J.P.Morgan

Morgan Stanley

Bank of America

citi

Boutiques

EVERCORE

LAZARD

MOELIS & COMPANY

HOULIHAN LOKEY

RAYMOND JAMES®

Jefferies

PJT

P / W / P PERELLA WEINBERG PARTNERS

Greenhill

CENTERVIEW PARTNERS

European Bulge Bracket

BARCLAYS

CREDIT SUISSE

Deutsche Bank

UBS

Local Players

BNP PARIBAS

BMO BMO Financial Group

HSBC

MACQUARIE

WELLS FARGO

RBC

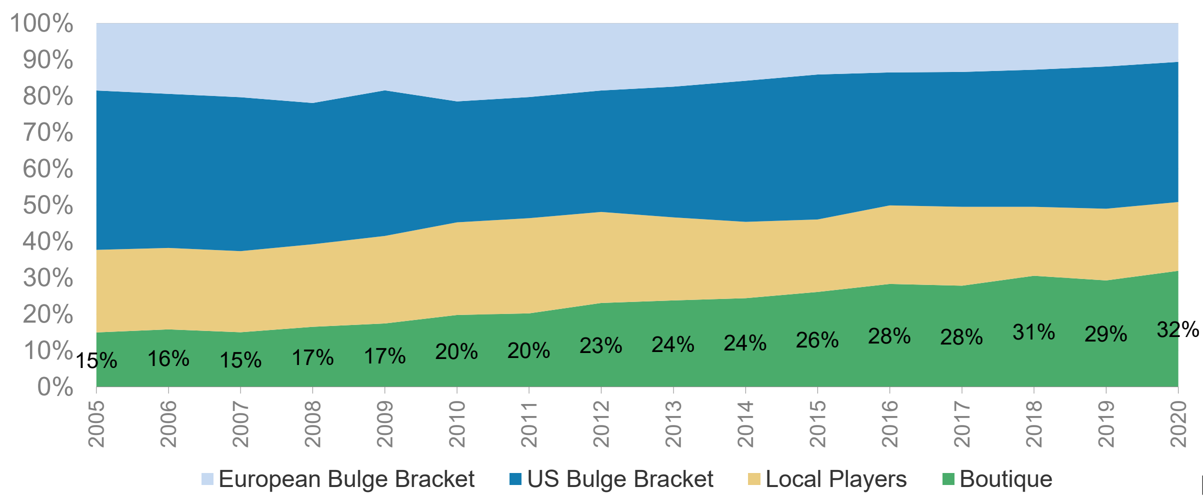
NOMURA

Source: Morgan Stanley Research

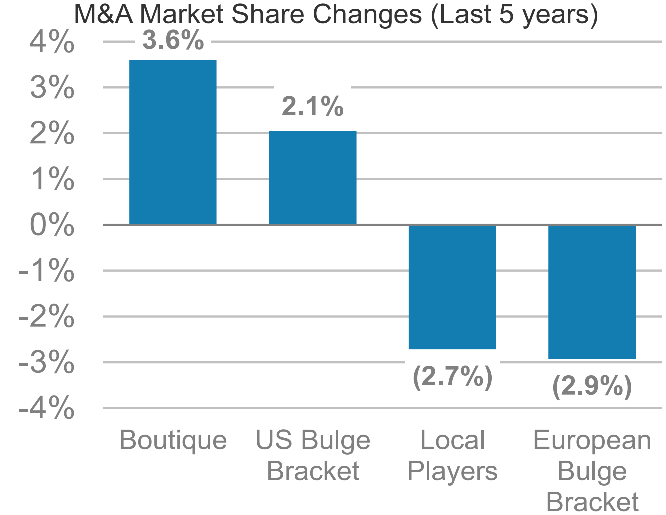
1 Overview of Midcap Advisors

Boutiques Have Gained Share from Bulge Bracket European Banks

Share of Total Global M&A Revenues



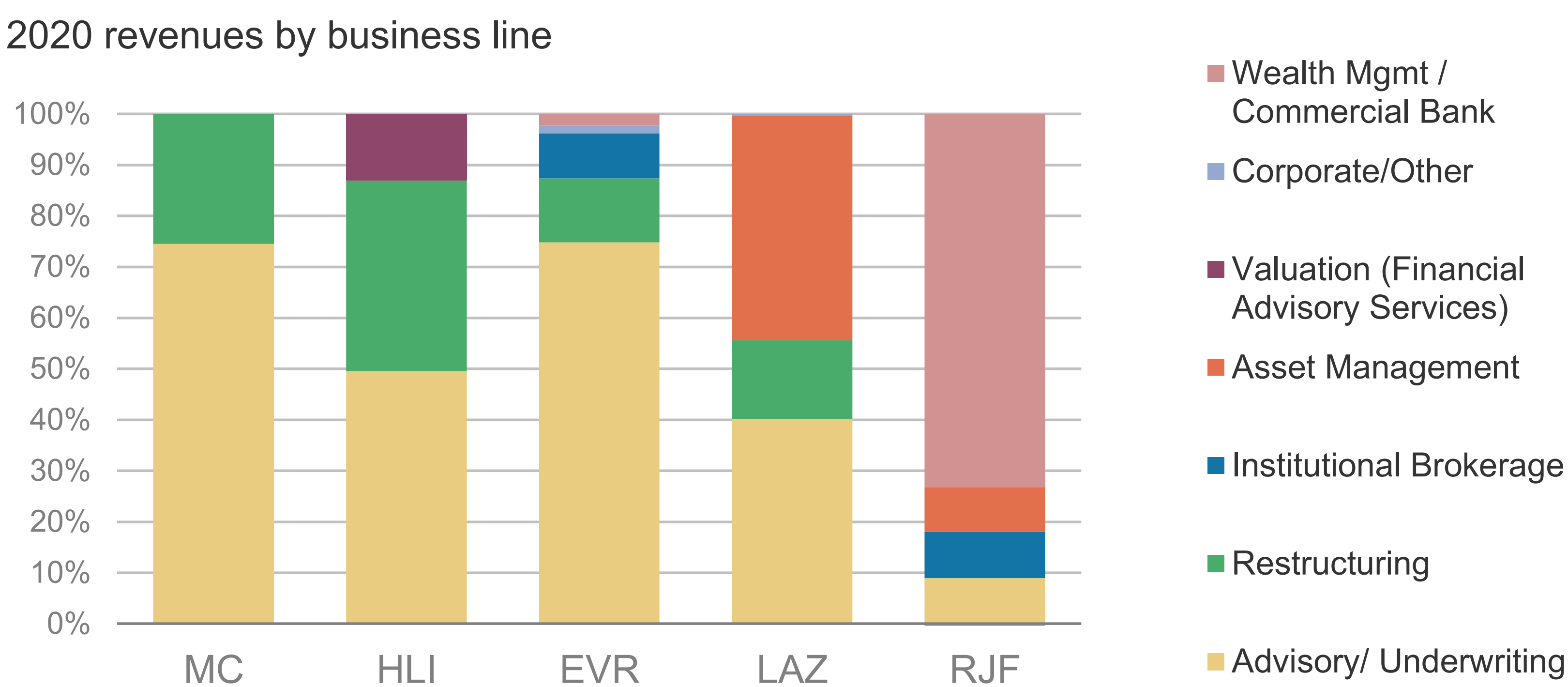
M&A Market Share Changes (Last 5 years)



Note: Top Tier include BAC, C, JPM, GS, MS, BARC, CS, DB, UBS. Boutiques include firms with independent advisory activities, ranked in the top 50 in the 2020 M&A league tables Source: Dealogic, Morgan Stanley Research

1 Overview of Midcap Advisors

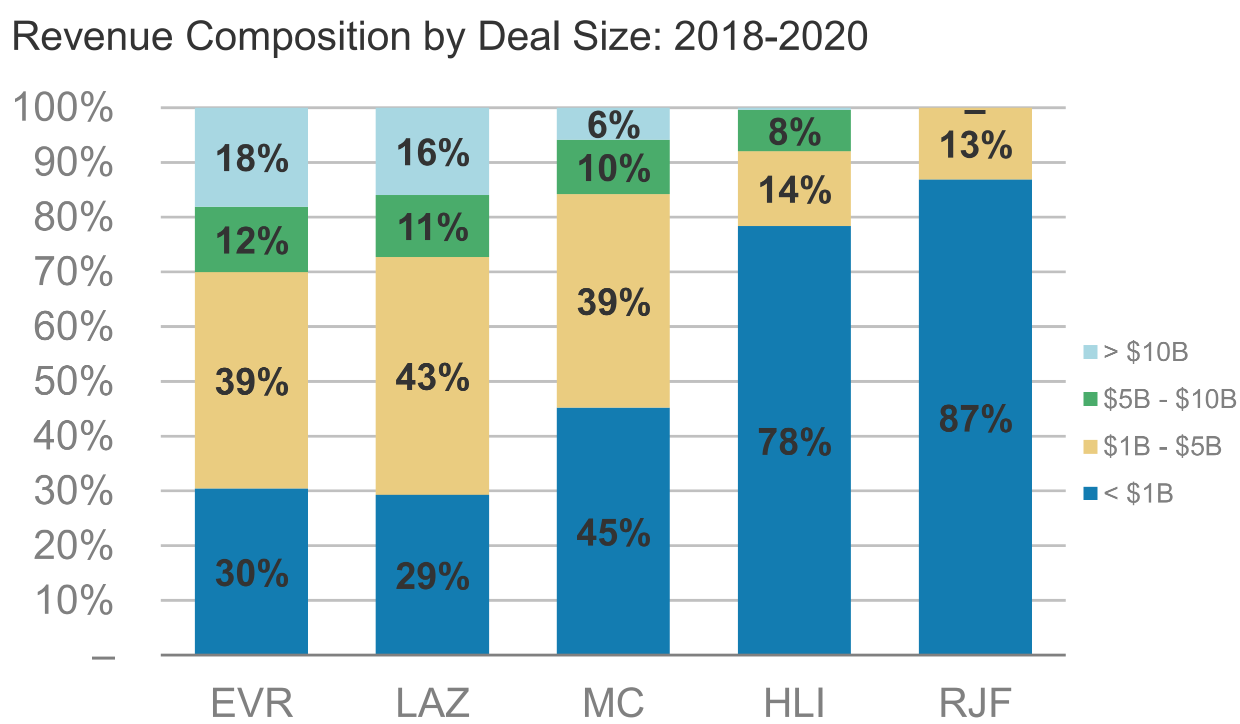
Advisory & Restructuring Are the Main Revenue Drivers for Most Advisors



Note: Only HLI discloses restructuring revenues separately. We estimate revenues for LAZ, MC based on prior disclosure and management comments. For EVR, we assume restructuring revenues are 10-15% of total advisory revenues, below 25% at MC.

Source: Company Data, Morgan Stanley Research

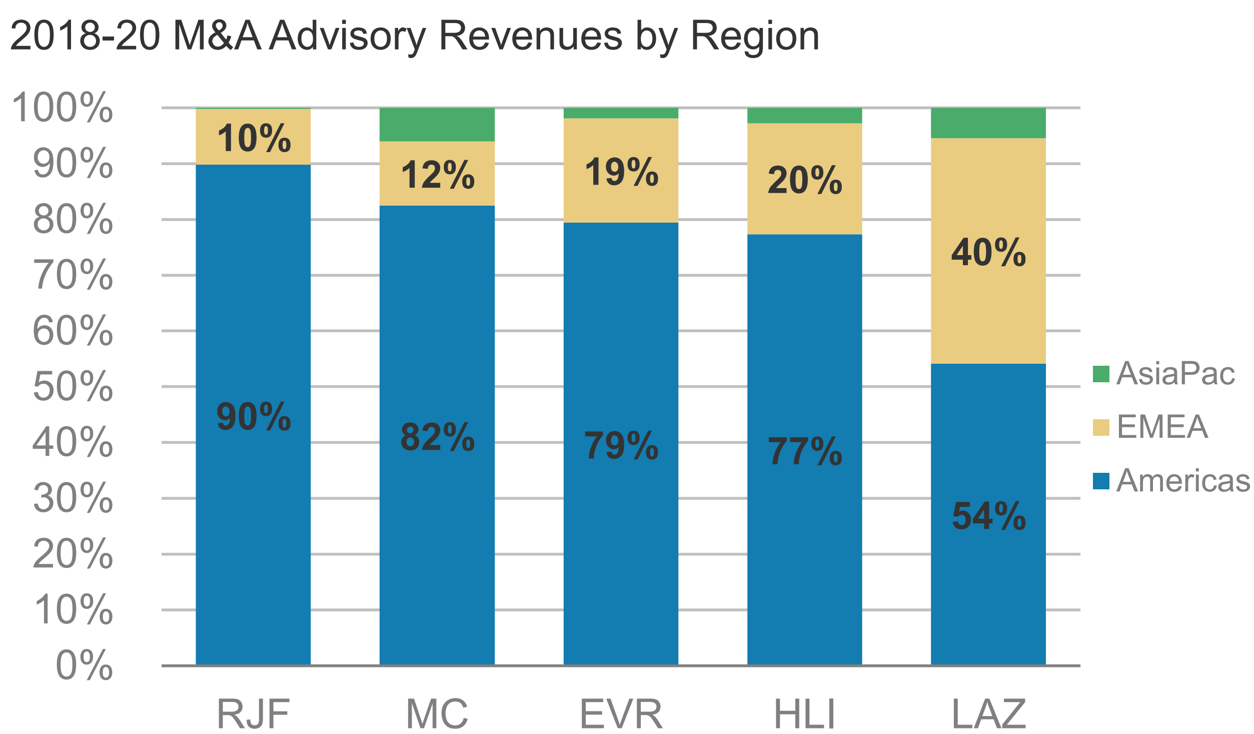
Boutiques Typically Focus on Small and Mid-sized Deals…



Source: Dealogic, Morgan Stanley Research

1 Overview of Midcap Advisors

… With a Skew to the US



Source: Dealogic, Morgan Stanley Research

We Have an Attractive View on the Group

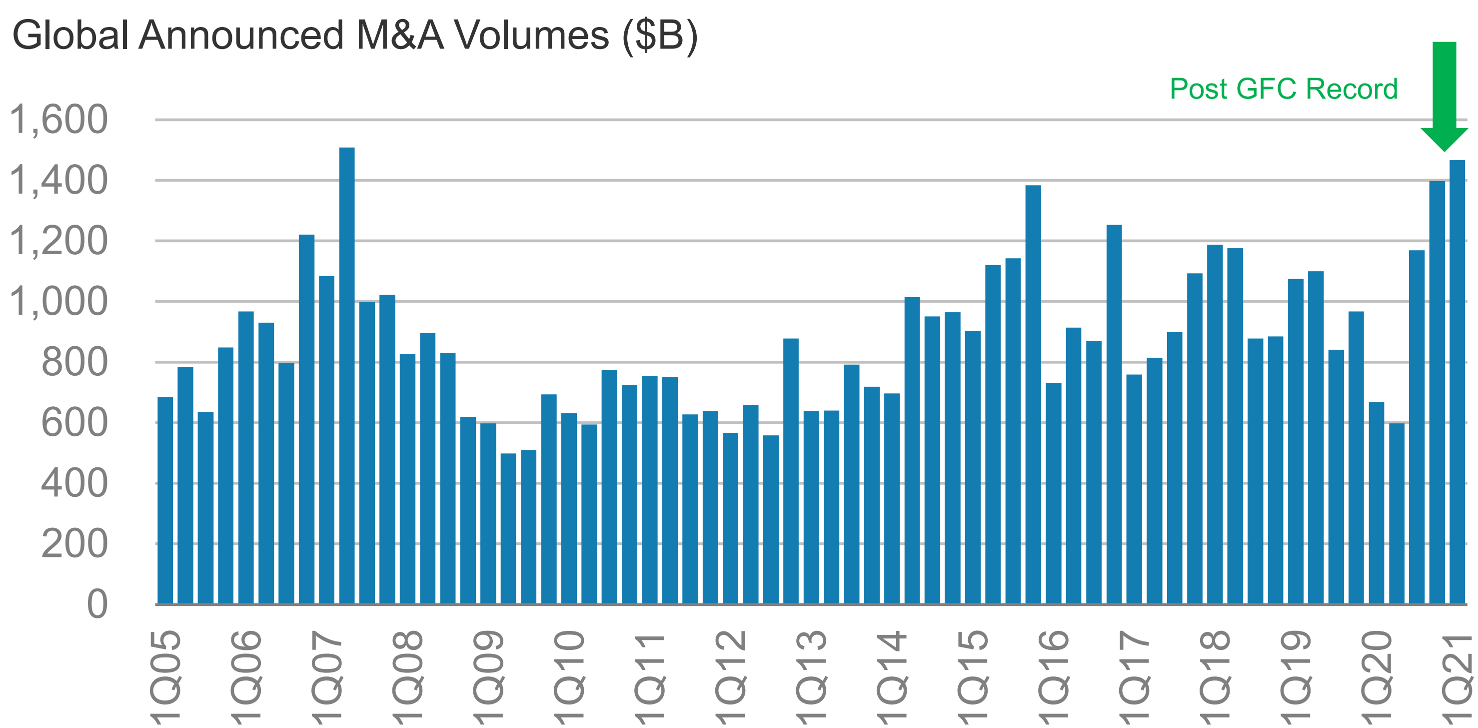
- M&A Activity Is Booming
- Forward Indicators Positive
- Elevated Pretax Margins
- Increasing Capital Return
- Attractive Valuation

Source: Morgan Stanley Research

M&A Outlook

2 M&A Outlook

The M&A Environment Is Booming

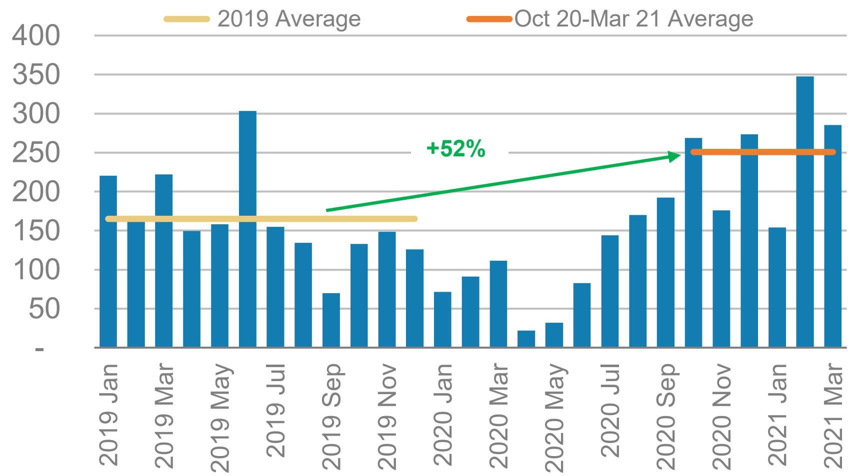


Source: Dealogic

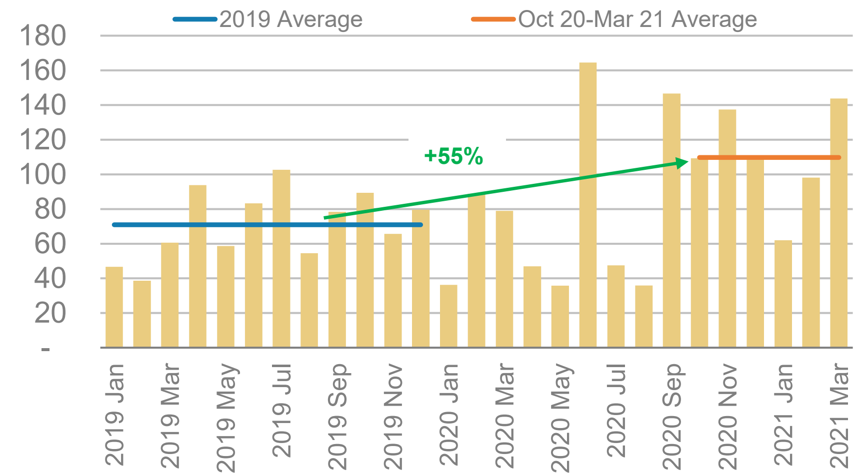
2 M&A Outlook

Across Both North America and Europe

North America Monthly Announced M&A Volume ($B)



Europe Monthly Announced M&A Volume ($B)



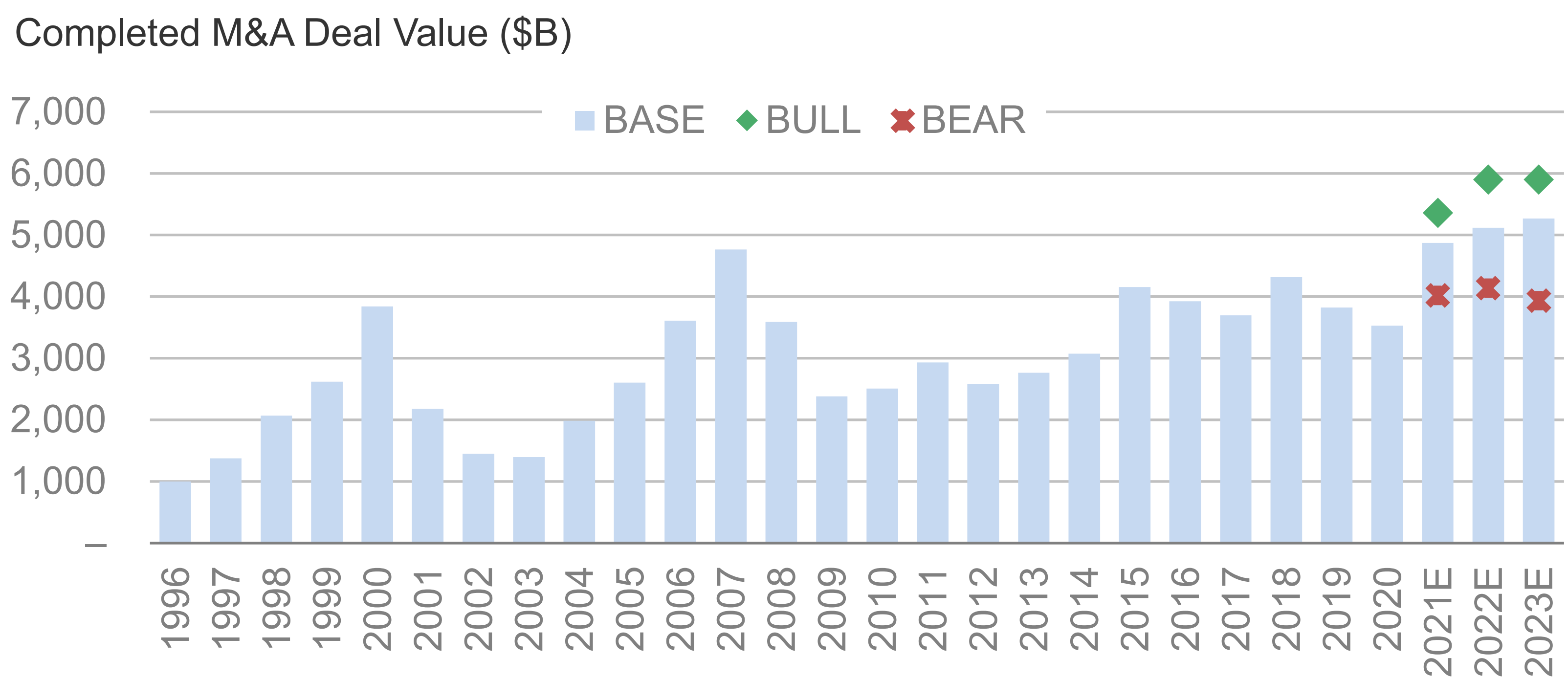
Source: Dealogic

Forward M&A Indicators Suggest Activity Should Remain Elevated

Drivers
Business Conditions
Vistage CEO Confidence Index
NFIB: Small Business Optimism Index
MS Business Conditions Index
Equity Markets
MSCI World
S&P 500
FTSE
Fixed Income Markets
IG Issuance Volumes
HY Issuance Volumes
Rates
Effective Fed Funds
US 10 Yr Treasury
Spreads
IG Spread
HY Spread

Source: Vistage, NFIB, Thomson Reuters, Yield Book, Dealogic, Morgan Stanley Research

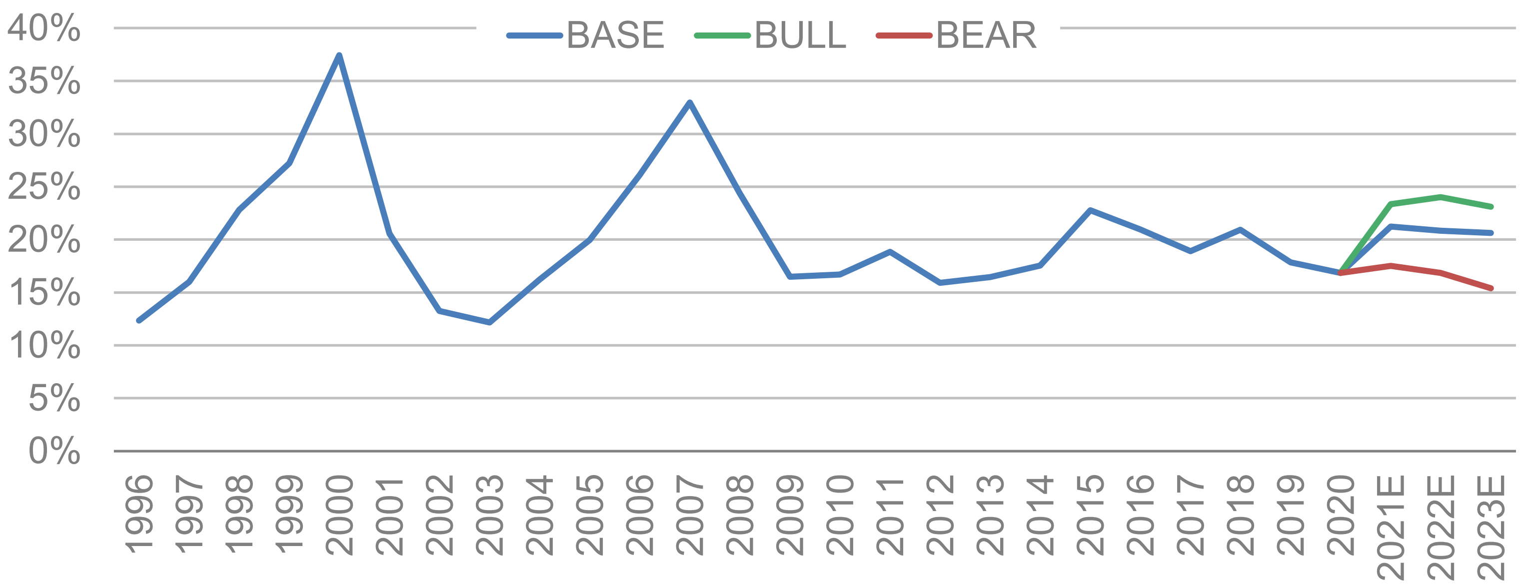
We Expect Completed Deal Volumes Rise 38% y/y in 2021 with Further Upside in 2022



Source: Dealogic, Morgan Stanley Research estimates

These Estimates Are Still Conservative as a % of GDP

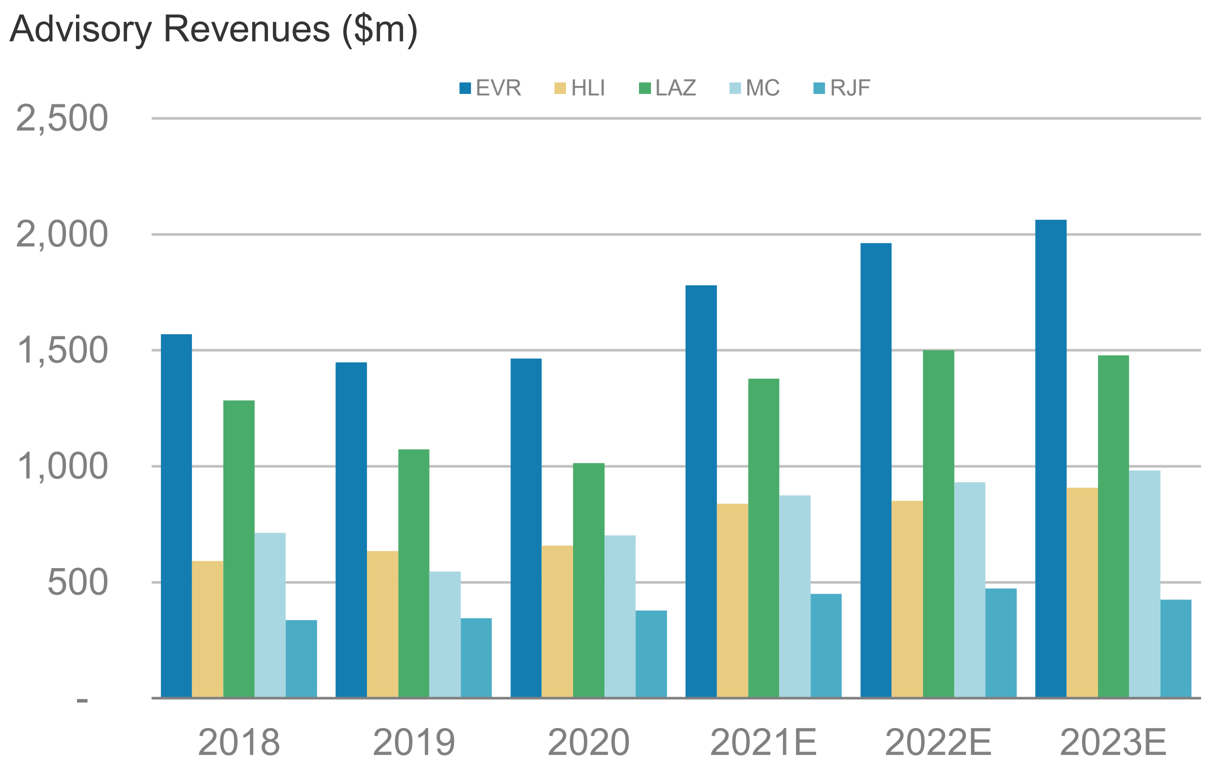
Completed M&A Deal Value as a % of Base Case Nominal US GDP



Note: Chart shows our Bull/Base/Bear estimates for Completed Global M&A Deal volumes as a % of Nominal US GDP. 2021-2022e nominal GDP estimates are MS Research US Economics team Base Case estimates. For 2023e, we assume a nominal GDP growth rate of 4%
Source: Dealogic, BEA, Morgan Stanley Research estimates

2 M&A Outlook

For the Boutiques, M&A Advisory Revenues Should Reach New Highs in 2021



Source: Company Data, Morgan Stanley Research estimates

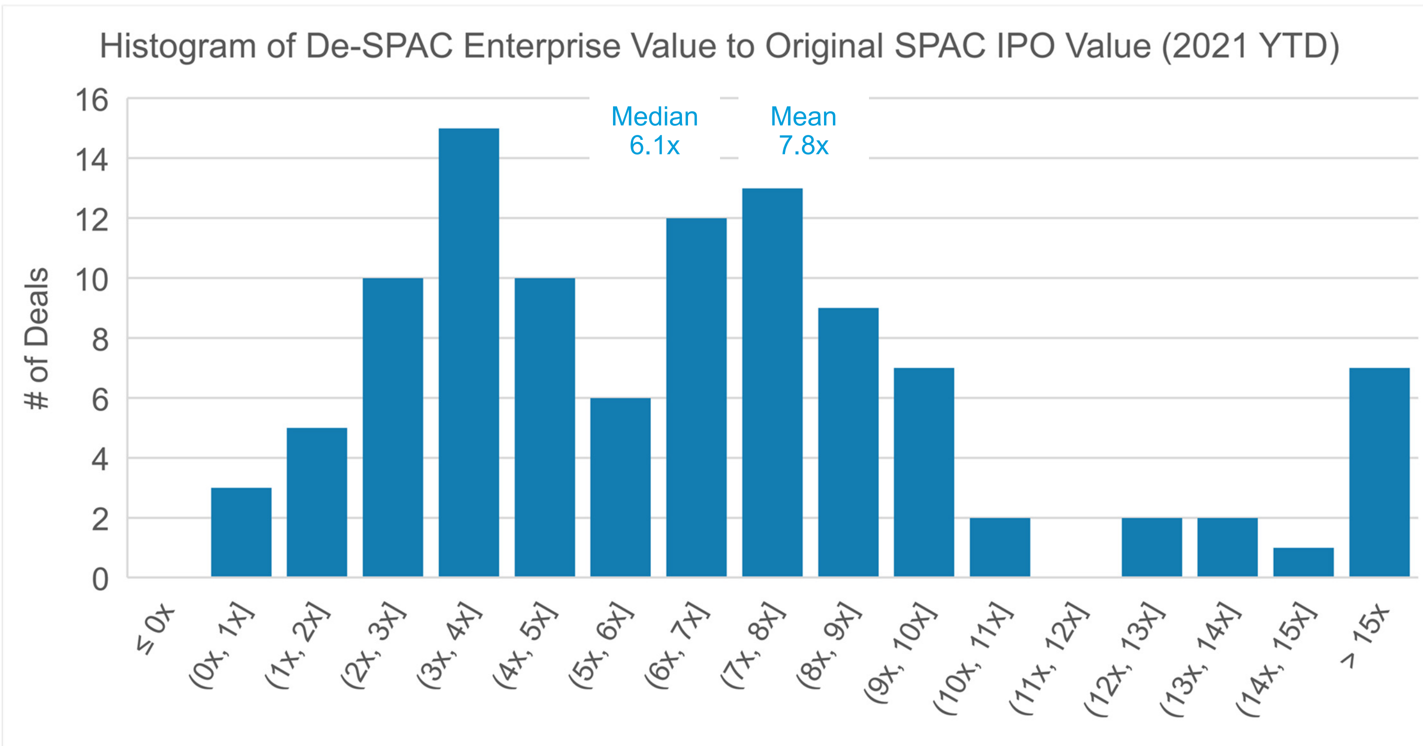
SPAC Activity

There Are Still 436 SPACs with $140B in Trust Cash Looking for a Deal

2020-2021 YTD SPAC Activity	
# of SPAC IPOs 2020-2021YTD	566
Amount Raised (i.e. Trust Cash, $B)	183.2
# of 2020-21 SPACs that have announced De-SPAC Deals	130
Total De-SPAC Enterprise Value ($B)	331.5
# of SPACs still looking for a deal	**436**
Amount that these SPACs have raised (i.e. Trust Cash, $B)	**139.4**

Source: Dealogic, Morgan Stanley Research

For Those That Have Found a Deal, Average Enterprise Value to Trust Cash Has Been 6-8x



Source: Dealogic, Morgan Stanley Research

That Can Add Up to ~$1T or 10-20% in M&A Deal Value If All Remaining SPACs Complete an Acquisition

Potential Addition to Deal Volume from De-SPAC Activity ($B)

% of SPACs that Succeed in Finding a Deal	20%	40%	60%	80%	100%
De-SPAC Value to Original SPAC IPO					
2.0x	55.7	111.5	167.2	223.0	278.7
4.0x	111.5	223.0	334.5	446.0	557.5
6.0x	167.2	334.5	501.7	669.0	836.2
8.0x	223.0	446.0	669.0	892.0	1,115.0
10.0x	278.7	557.5	836.2	1,115.0	1,393.7

Potential Addition to 2021 Completed M&A Volumes from De-SPAC Activity (%)

% of SPACs that Succeed in Finding a Deal	20%	40%	60%	80%	100%
De-SPAC Value to Original SPAC IPO					
2.0x	1%	2%	3%	5%	6%
4.0x	2%	5%	7%	9%	11%
6.0x	3%	7%	10%	14%	17%
8.0x	5%	9%	14%	18%	23%
10.0x	6%	11%	17%	23%	29%

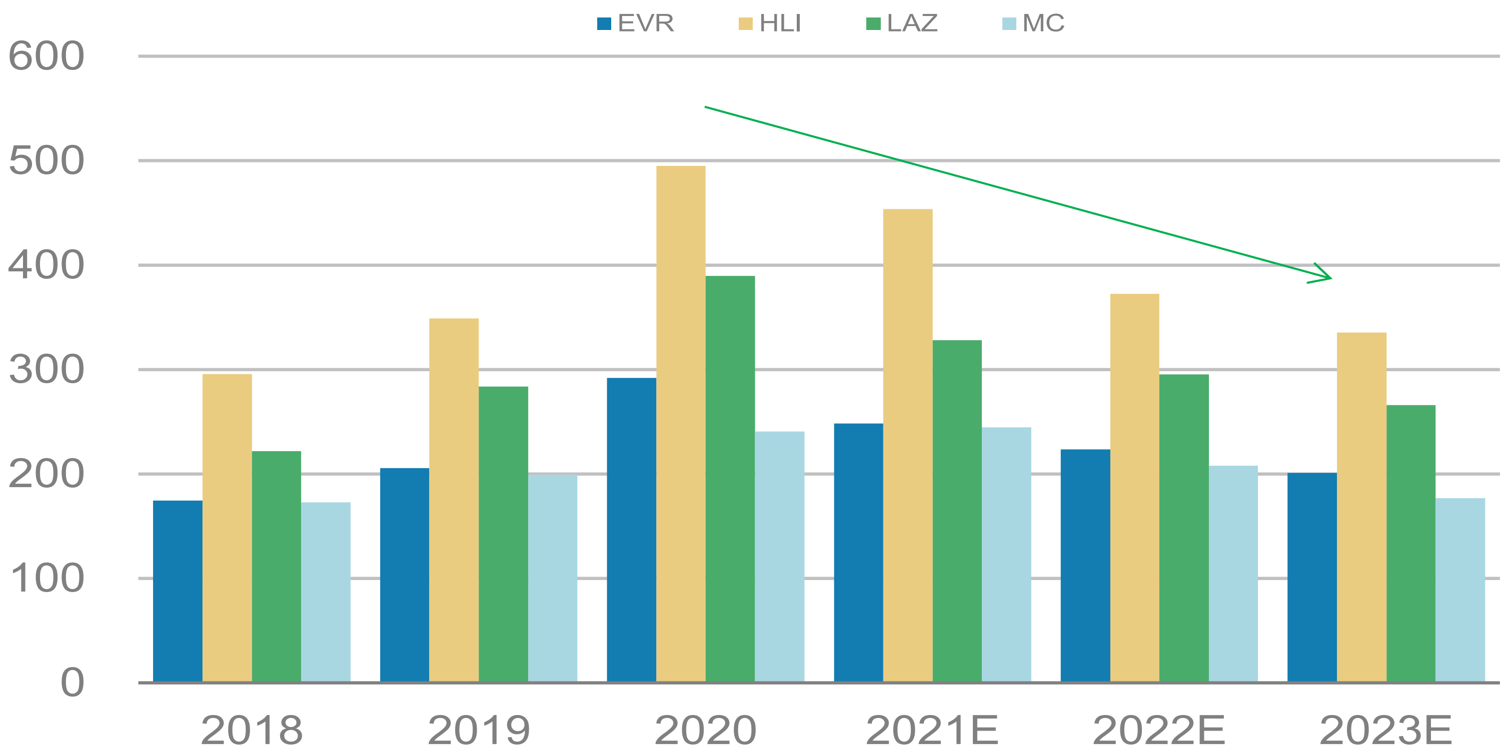
Source: Dealogic, Morgan Stanley Research

Restructuring Outlook

4 Restructuring Outlook

V-Shaped Economic Recovery Means Restructuring Revenues Decline from Here, a Partial Offset to Rising M&A Revenues

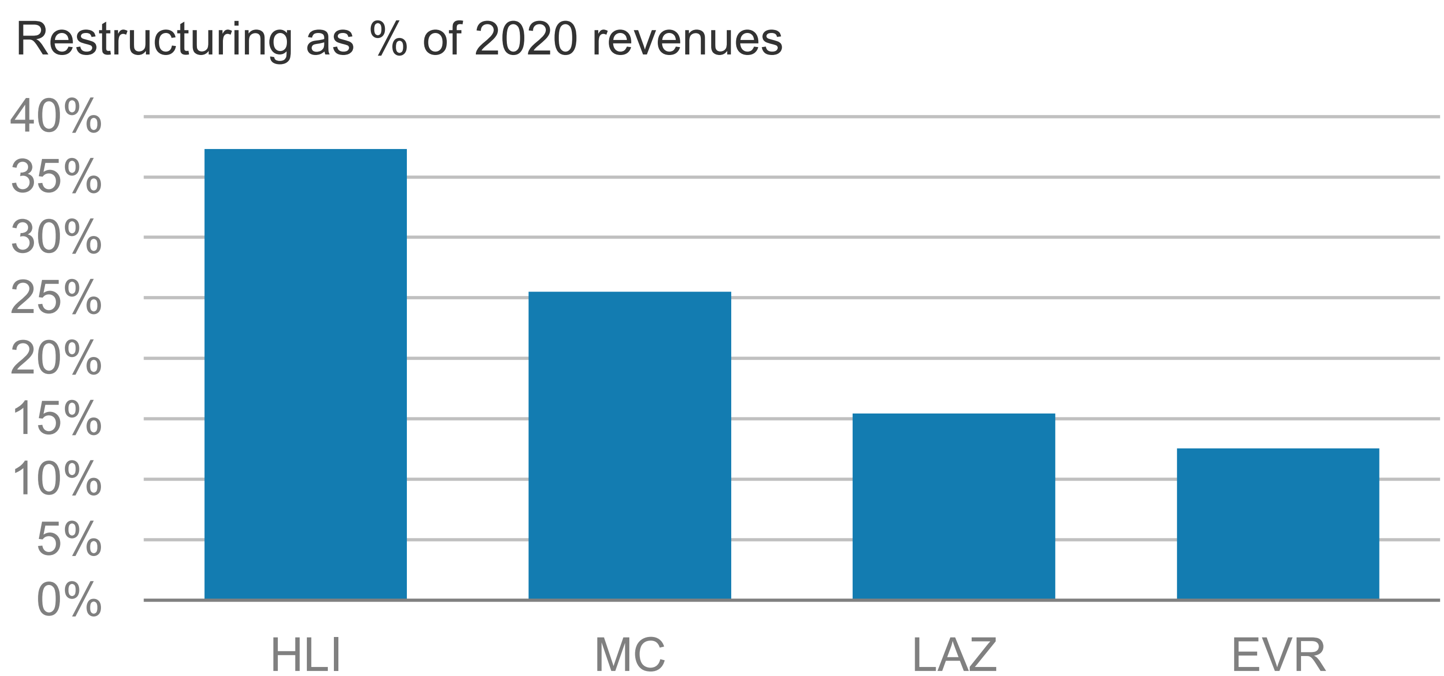
Restructuring Revenues ($m)



Note: Only HLI discloses restructuring revenues separately. We estimate revenues for LAZ, MC based on prior disclosure and management comments. For EVR, we assume restructuring revenues are 10-15% of total advisory revenues, below 25% at MC.

Source: Company Data, Morgan Stanley Research estimates

We Estimate Restructuring Revenues Are Currently Between 13-37% of Total Revenues



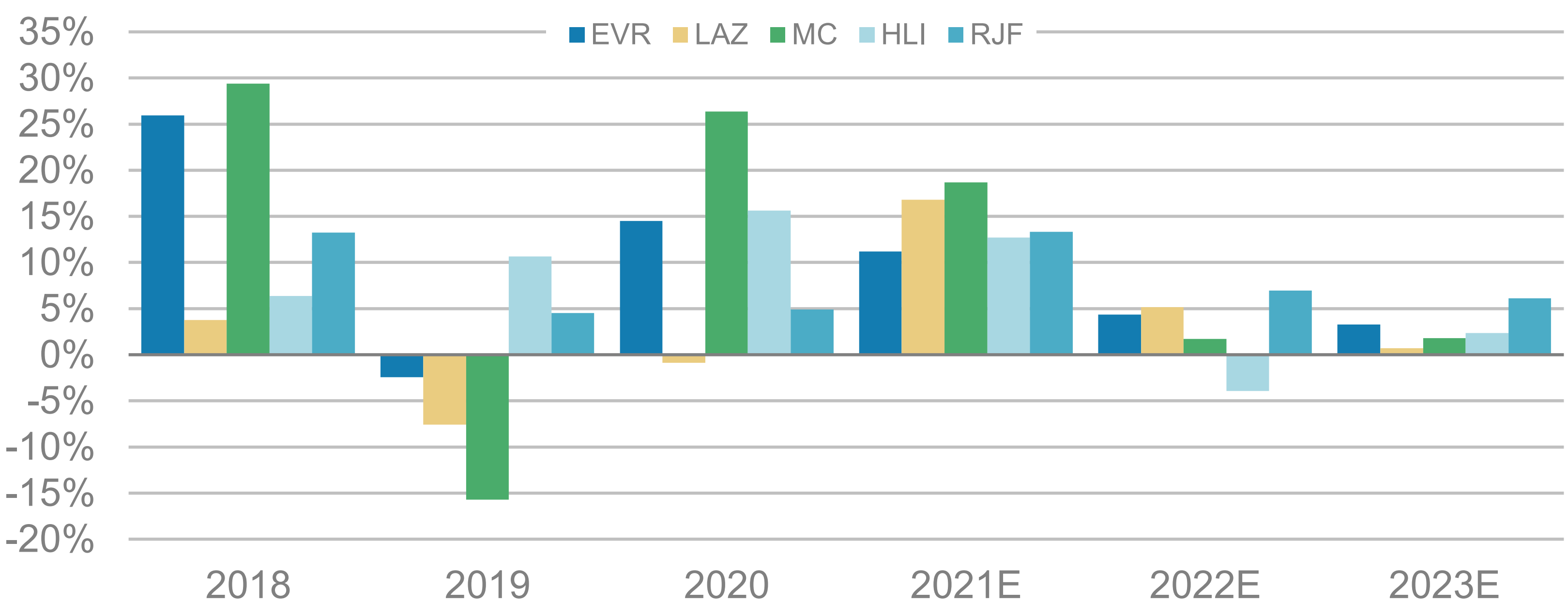
Note: Only HLI discloses restructuring revenues separately. We estimate revenues for LAZ, MC based on prior disclosure and management comments. For EVR, we assume restructuring revenues are 10-15% of total advisory revenues, below 25% at MC.

Source: Company Data, Morgan Stanley Research

Operating Leverage

All In, We Expect Total Revenues Rise a Median 13% / 4% in 2021 / 22

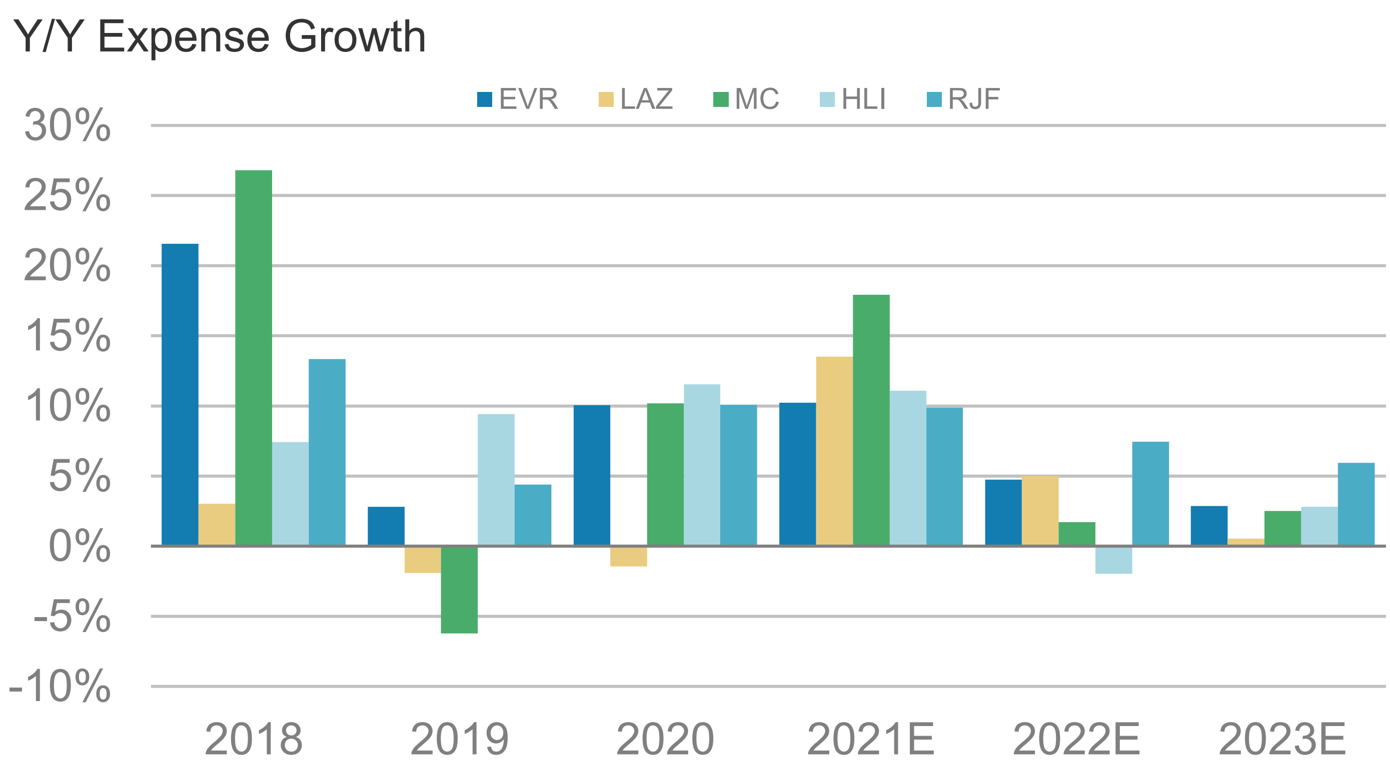
Y/Y Revenue Growth



Source: Company Data, Morgan Stanley Research estimates

5 Operating Leverage

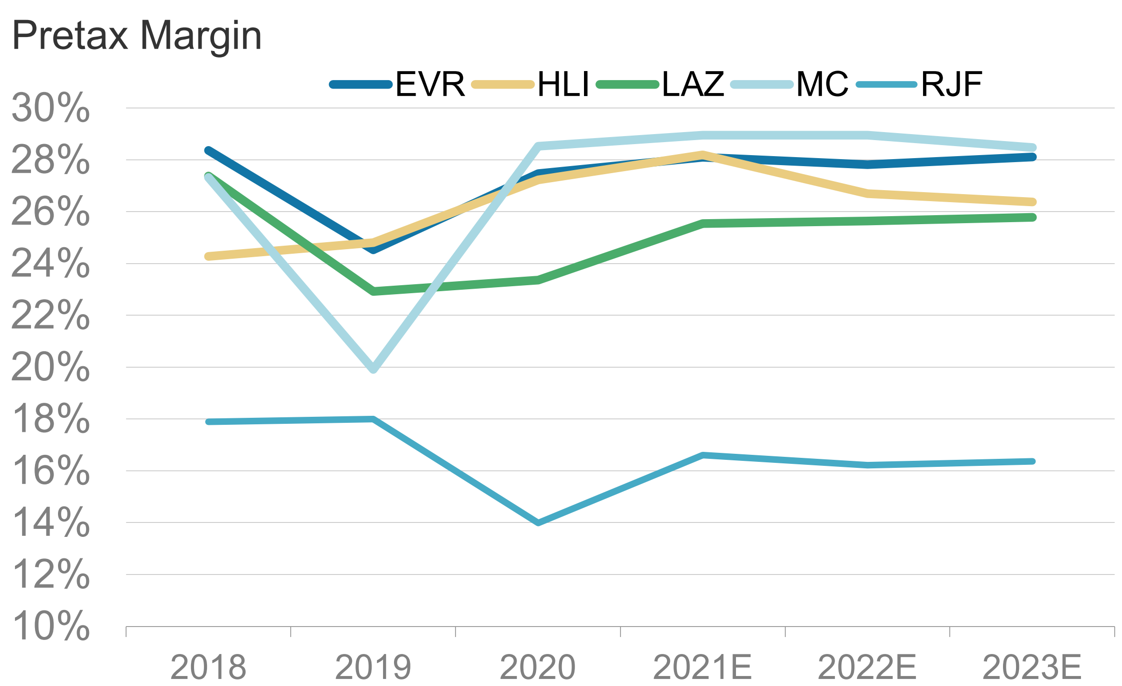
While Expenses Rise Slower at 11% / 5% in 2021 / 22



Source: Company Data, Morgan Stanley Research estimates

5 Operating Leverage

Boutique Model Has Higher Operating Leverage, Expect Elevated Pretax Margins in a High Revenue Environment



Source: Company Data, Morgan Stanley Research estimates

Valuation

Stocks Have Performed Well with the V-Shaped Macro Recovery

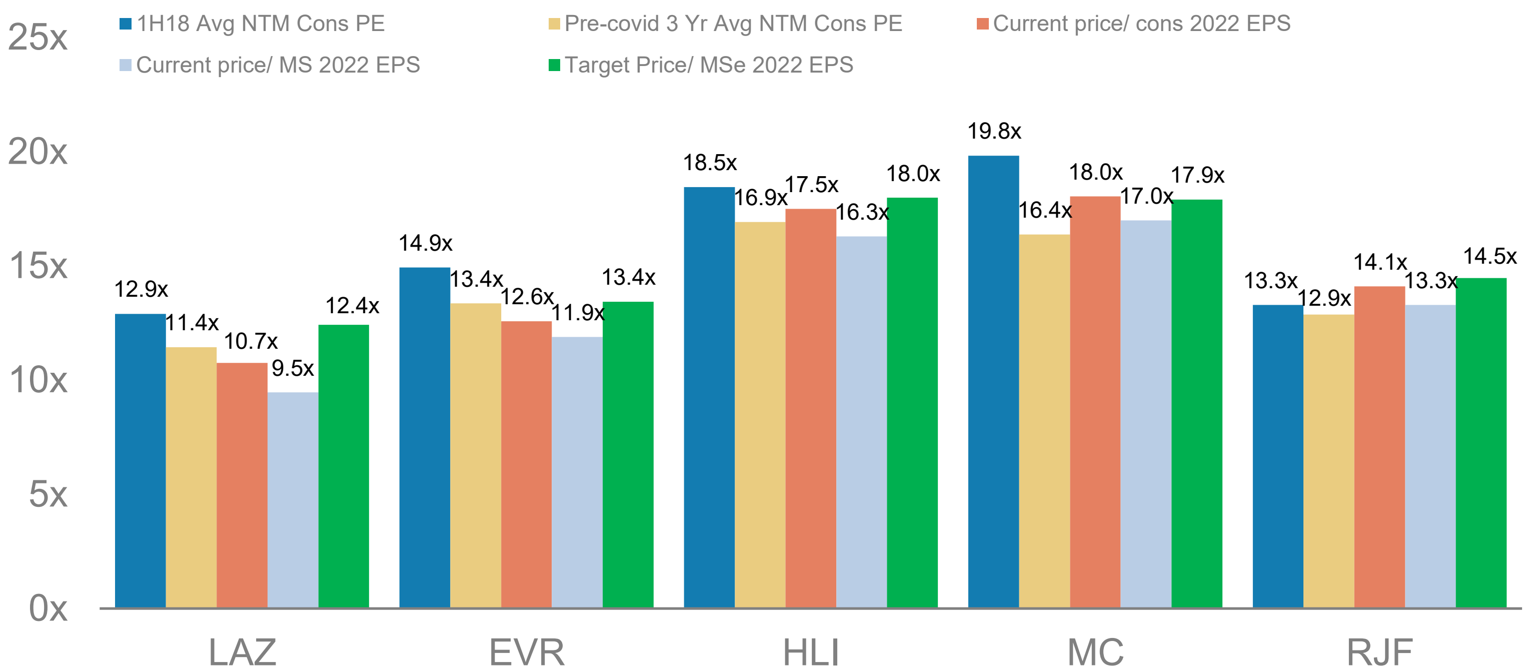
Stock Performance

	2021 YTD	4Q20	2020	Past26-Weeks	Past 52-Weeks
RJF	35%	31%	7%	62%	110%
EVR	29%	67%	47%	72%	197%
MC	22%	39%	49%	56%	125%
LAZ	10%	28%	6%	34%	93%
HLI	4%	14%	38%	11%	27%
S&P500	11%	12%	16%	23%	47%
S&P 500 Fin.(Sector)	20%	23%	-4%	43%	63%

Source: Thomson Reuters
Note: Priced as of 04/23/2021

Still More Room to Go… LAZ and EVR Are Trading at the Highest Discount to Peers and Historical Levels

2022e Forward P/E

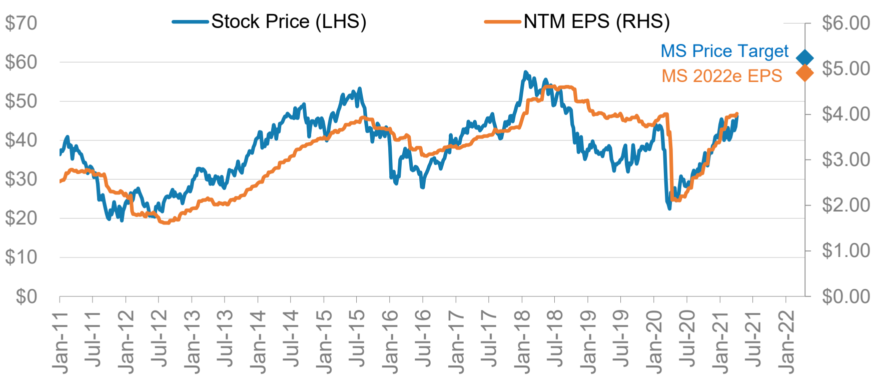


Source: Thomson Reuters, Morgan Stanley Research
Note: Priced as of 04/23/2021

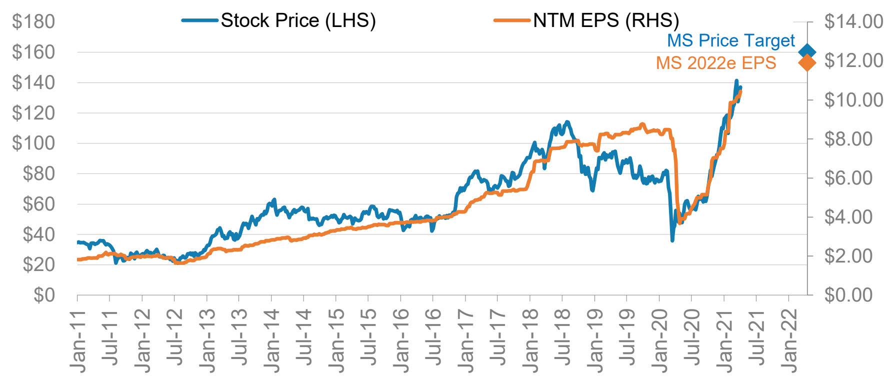
6 Valuation

Historically, EPS Growth Has Been the Major Driver for the Group

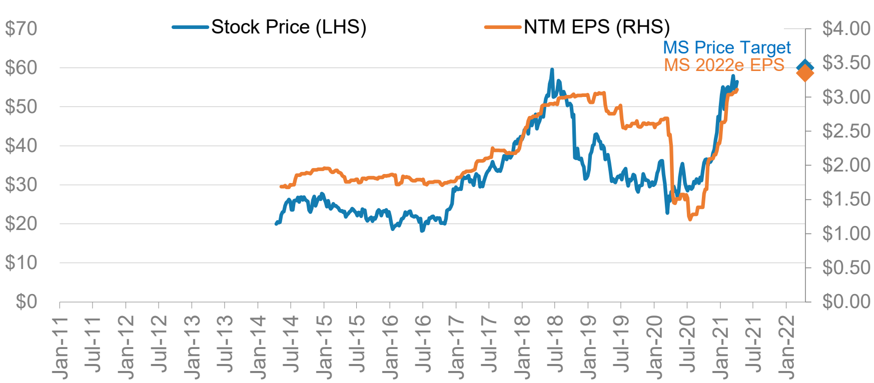
LAZ Stock Price vs. NTM EPS



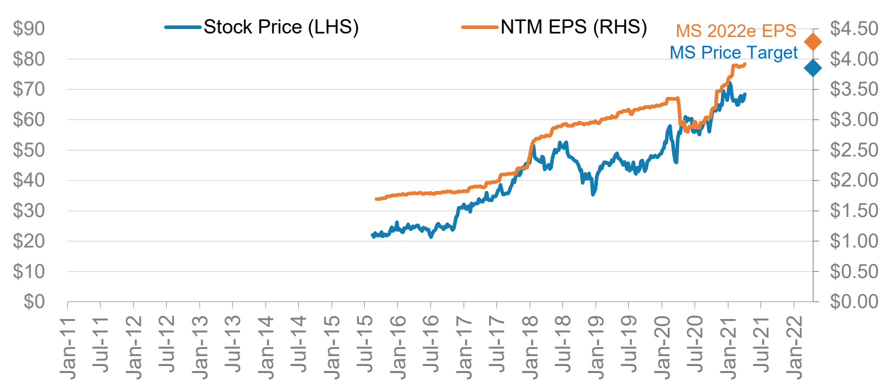
EVR Stock Price vs. NTM EPS



MC Stock Price vs. NTM EPS



HLI Stock Price vs. NTM EPS



Note: Reflects quarter end stock price and NTM consensus EPS
Source: Thomson Reuters, Morgan Stanley Research

Stock Calls

Lazard Ltd (LAZ.N) - Overweight

RISK REWARD CHART

Source: Thomson Reuters, Morgan Stanley Research

Price Target Our price target is based on P/E.	**$61**
Bull 13x 2022e Bull Case EPS	**$75**
Base 12.5x 2022e Base Case EPS	**$61**
Bear 10x 2022e Bear Case EPS	**$31**

Why Overweight

- Lazard is an independent M&A advisor / Asset manager with a 55% / 45% revenue split between the two businesses.
- Stock has lagged, despite tailwinds across M&A and Asset Management, and likely accelerating capital return.
- With M&A activity accelerating across US and Europe, we expect advisory revenues rise +22% / +5% y/y in 2021/22, 13% / 19% higher than the prior 2018 record.
- In Asset Management, rising markets are positive for AUM growth and we expect net flows to inflect positive in 2H21, given LAZ's ongoing investments in ESG, quant and alternatives. Expect 8% CAGR in AM revenues over the next 2 years.
- Priced at just 9.5x our 2022 EPS, LAZ is our top value pick in the group.

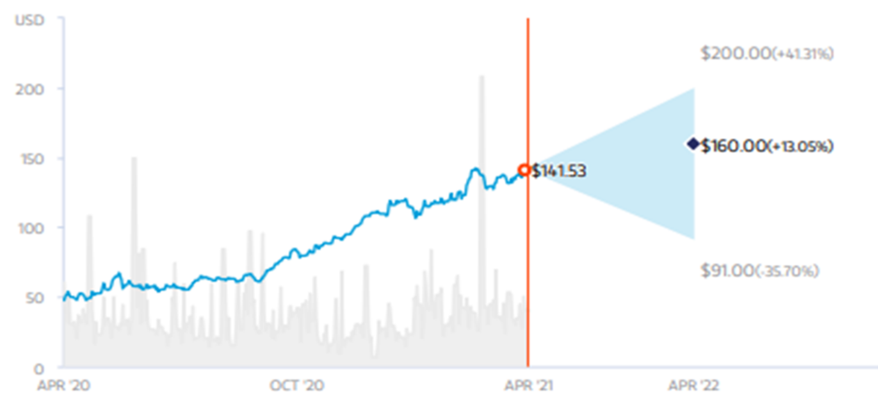
Risks to Achieving Price Target

- Higher market volatility drives weaker M&A activity
- Sharp decline in equity markets and/or large outflows driving lower AUM
- Stronger USD
- Key talent exits

Note: Priced as of 04/23/2021
Source: Thomson Reuters, Morgan Stanley Research

Evercore Inc (EVR.N) - Overweight

RISK REWARD CHART



Source: Thomson Reuters, Morgan Stanley Research

Price Target Our price target is based on P/E.	**$160**
Bull 15x 2022e Bull Case EPS	**$200**
Base 13x 2022e Base Case EPS	**$160**
Bear 12x 2022e Bear Case EPS	**$91**

Why Overweight

- Evercore is an independent advisor with 80% of total revenues coming from M&A Advisory fees.
- EVR trades at 12x our 2022 EPS below its historical average of 13.4x and well below the 1H18 average of 15x when M&A activity was last near today's levels.
- We believe the stock is well positioned to rise further as a V-shaped economic recovery drives strong M&A activity in 2021, coupled with elevated underwriting revenues.
- We see Evercore's recent investment spend as laying the groundwork to reaccelerate its share gain in the longer run.

Risks to Achieving Price Target

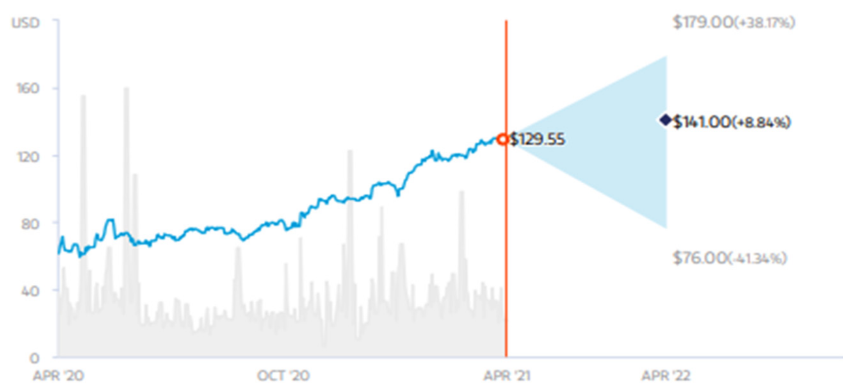
- Higher market volatility drives weaker M&A activity
- No market share gains, minimal MD productivity ramp
- Underwriting activity declines meaningfully
- Key talent exits
- Persistently elevated comp ratio

Note: Priced as of 04/23/2021

Source: Thomson Reuters, Morgan Stanley Research

Raymond James Financial (RJF.N) - Overweight

RISK REWARD CHART



Source: Thomson Reuters, Morgan Stanley Research

Price Target Our price target is based on P/E.	**$141**
Bull 15.5x C2022e Bull Case EPS	**$179**
Base 14.5x C2022e Base Case EPS	**$141**
Bear 14x C2022e Bear Case EPS	**$76**

Why Overweight

- At 13x our C2022 EPS, we believe the stock does not reflect the positive growth dynamic playing out. As markets remain resilient, strong recruiting drives net new money growth, higher margin Investment Banking revenues remain elevated and Net Interest Income grows, we expect the stock will rise towards our 14.5x target.
- In an increasingly competitive environment, we expect RJF's scale, technology platform, and advisor-first business model will continue to drive strong recruiting activity across all advisor channels, bringing in more client assets, and potentially allowing RJF to benefit from increased consolidation in the Wealth Management industry.

Risks to Achieving Price Target

- Prolonged virus related disruption and weak markets
- Absence of M&A opportunities and inability to do buybacks
- Weak advisor recruitment
- Inability to drive expenses down
- Credit costs rise

Note: Priced as of 04/23/2021
Source: Thomson Reuters, Morgan Stanley Research

Comp Sheet

			Scenario Value						Pricing						Earnings & Revenue Growth									Key Ratios			Valuation			
		Price	Scenario Value			Chg to PT (%)			Comm.	Market	Dividend		% Price Chg.		EPS			EPS Y/Y			Revenues Y/Y			Comp Ratio	Expense Ratio	Pre-tax Margin	2021e P/E		2022e P/E	
Ticker	Rating	4/23/21	Base	Bull	Bear	Base	Bull	Bear	Shares	Cap ($B)	2021e	Yield	YTD	LTM	2020	2021e	2022e	2020	2021e	2022e	2020e	2021e	2022e	2021e	2021e	2021e	Curr.	Target	Curr.	Target
Midcap Advisors																														
EVR	OW	141.53	160	200	91	**13%**	41%	-36%	41	6.8	2.65	1.9%	29%	185%	9.62	11.32	11.91	25%	18%	5%	14%	11%	4%	59%	72%	28%	12.5x	14.1x	11.9x	13.4x
HLI	UW	69.76	77	89	56	**10%**	28%	-20%	62	4.8	1.41	2.0%	4%	25%	4.07	4.58	4.28	31%	12%	-6%	16%	13%	-4%	62%	72%	28%	15.2x	16.8x	16.3x	18.0x
LAZ	OW	46.45	61	75	31	**31%**	61%	-33%	105	5.2	1.97	4.2%	10%	76%	3.60	4.52	4.91	9%	25%	9%	-1%	17%	5%	59%	74%	26%	10.3x	13.5x	9.5x	12.4x
MC	EW	56.94	60	81	33	**5%**	42%	-42%	65	3.8	2.14	3.8%	22%	105%	2.95	3.45	3.35	50%	17%	-3%	26%	19%	2%	60%	71%	29%	16.5x	17.4x	17.0x	17.9x
RJF	OW	129.55	141	179	76	**9%**	38%	-41%	137	17.8	1.60	1.2%	35%	111%	6.46	8.56	9.74	-14%	33%	14%	5%	13%	7%	70%	83%	17%	15.1x	16.5x	13.3x	14.5x
Median (Mkt Cap = Total)						**10%**	**41%**	**-36%**		**38.5**		**2.0%**	**22%**	**105%**				**25%**	**18%**	**5%**	**14%**	**13%**	**4%**	**60%**	**72%**	**28%**	**15.1x**	**16.5x**	**13.3x**	**14.5x**

e = Estimated.

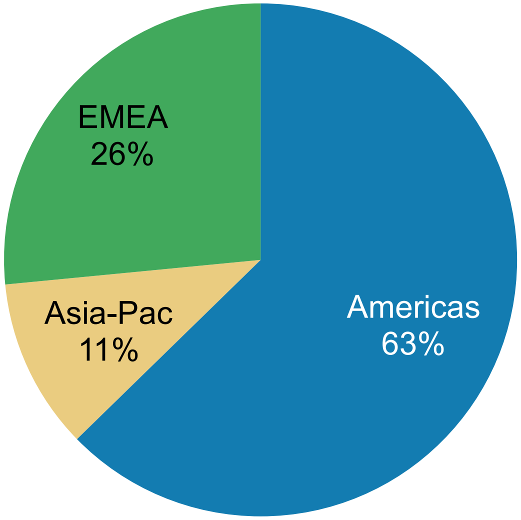
Sources: (1) Morgan Stanley Research. (2) Thomson Reuters. (3) Company Data

Note: Priced as of 04/23/2021
Source: Thomson Reuters, Company Data, Morgan Stanley Research estimates

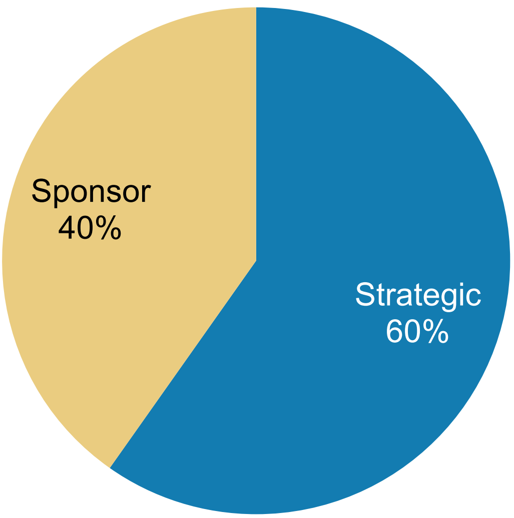
Industry Stats and Multiples

Industry M&A Revenue Breakdown

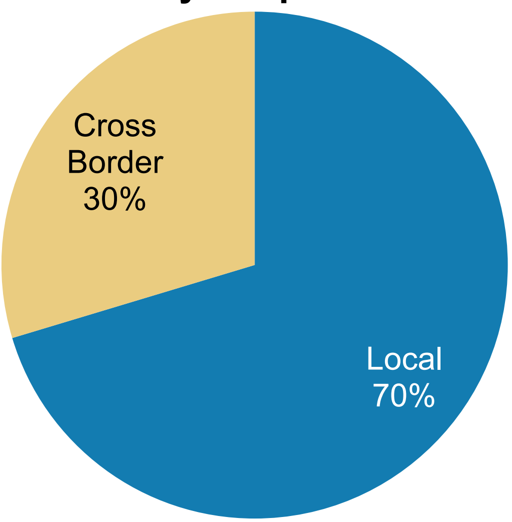
By Region



By Deal Type



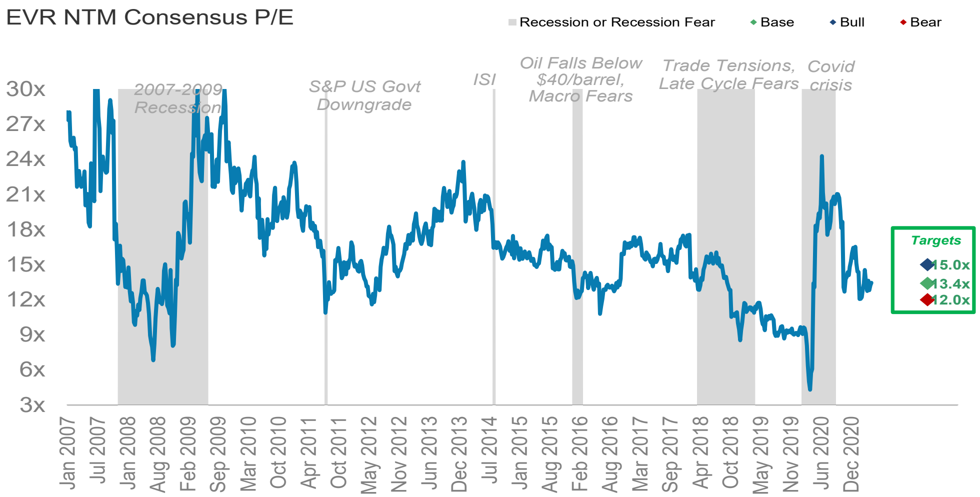
By Scope

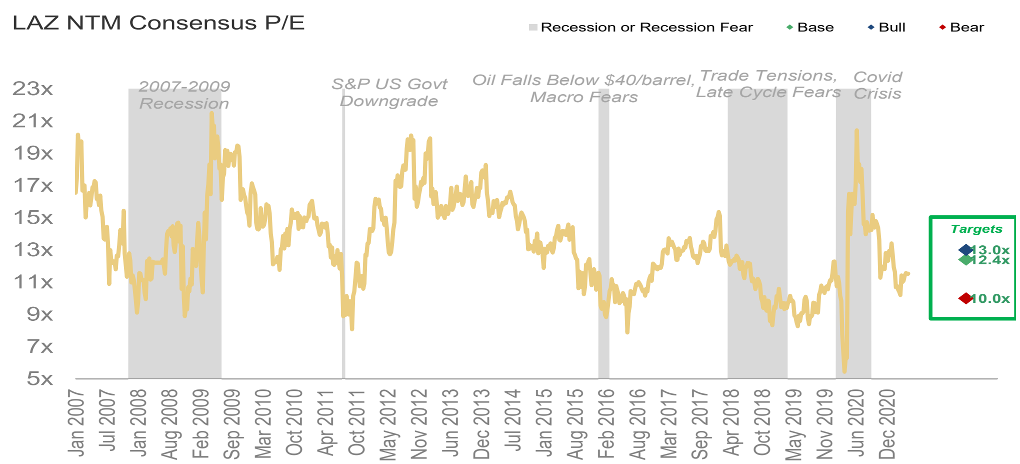


Source: Dealogic
Note : Data for Full Year 2020

8 Industry Stats and Stock Multiples

EVR and LAZ NTM Consensus P/E

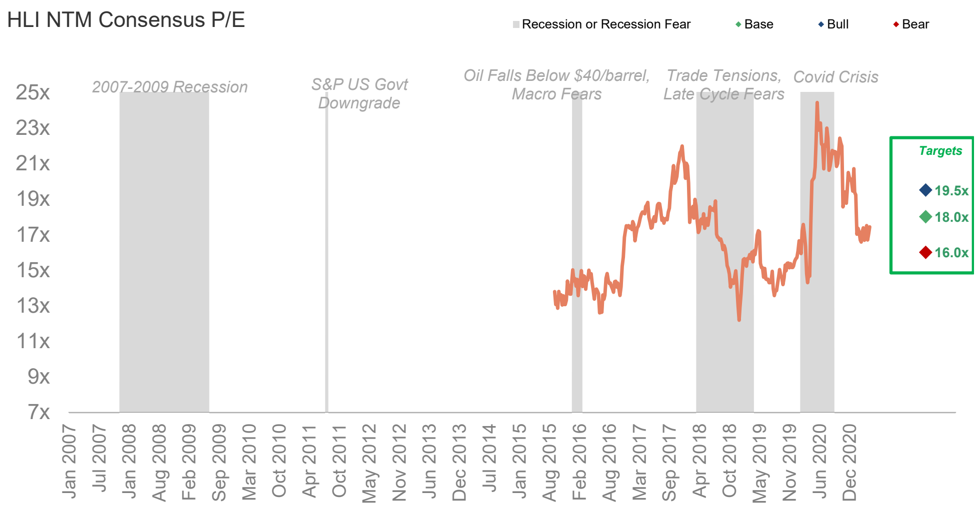


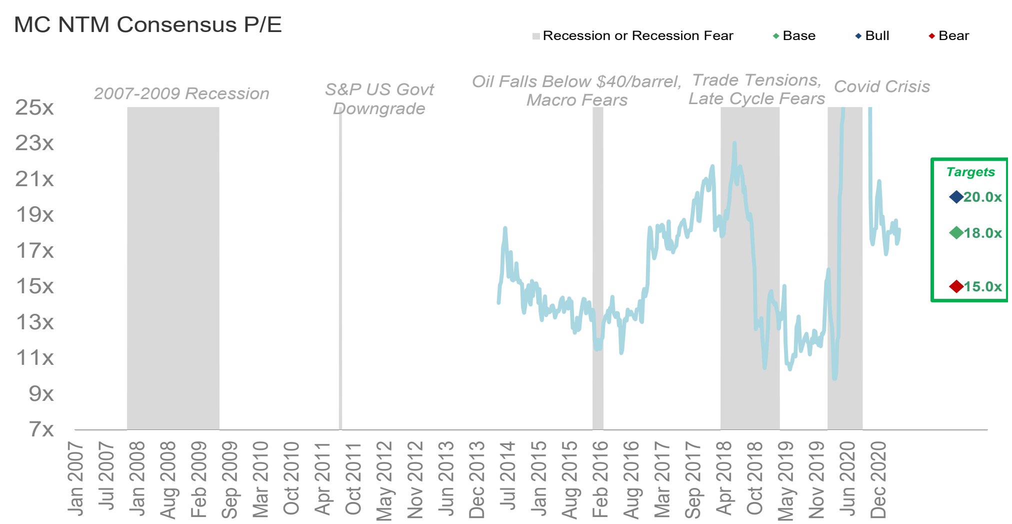


Source: Thomson Reuters, Morgan Stanley Research
Note: Targets indicate Morgan Stanley Research Price Target / MS 2022 EPS estimates

8 Industry Stats and Stock Multiples

HLI and MC NTM Consensus P/E

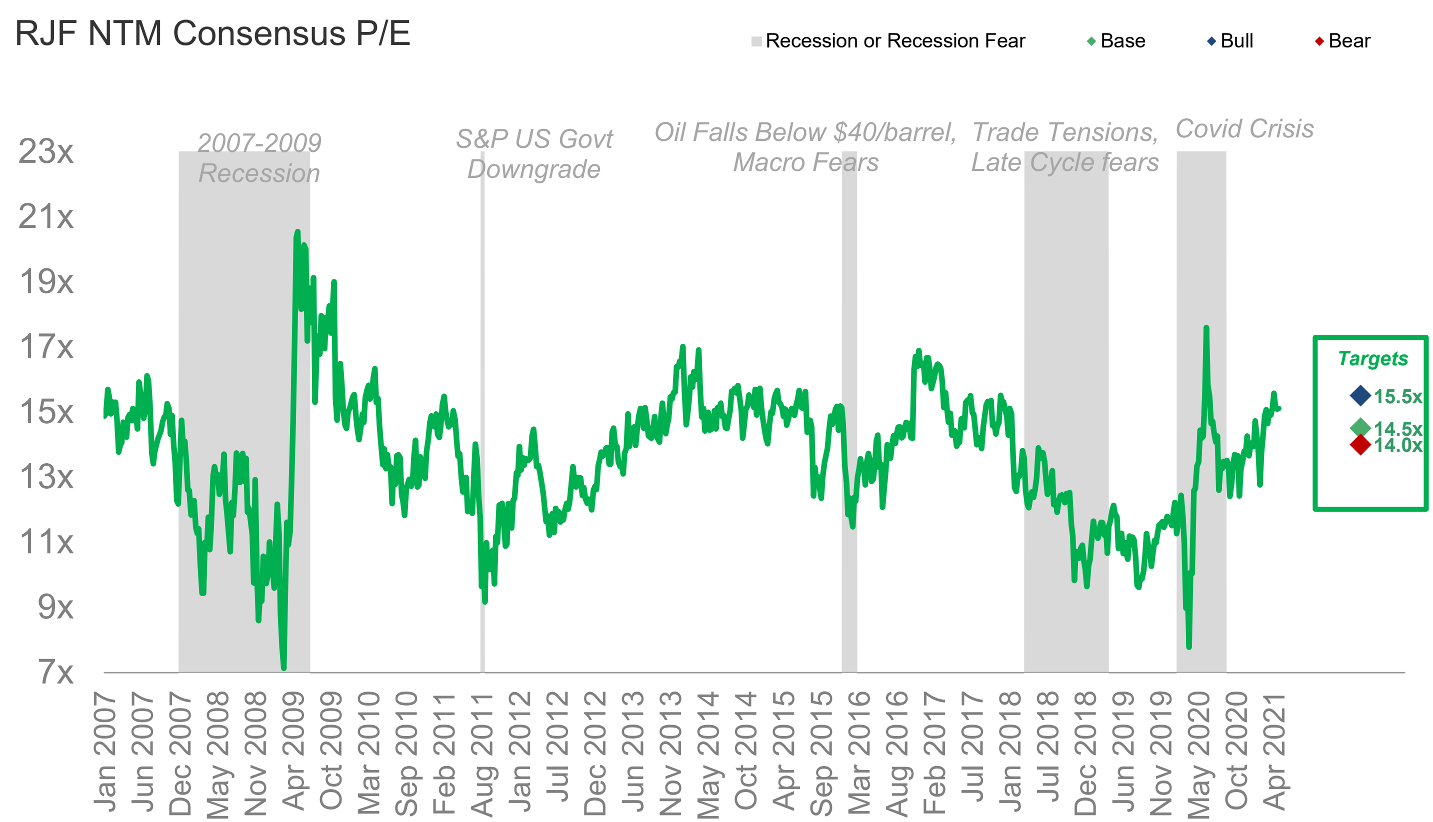




Source: Thomson Reuters, Morgan Stanley Research
Note: Targets indicate Morgan Stanley Research Price Target / MS 2022 EPS estimates

8 Industry Stats and Stock Multiples

RJF NTM Consensus P/E



Source: Thomson Reuters, Morgan Stanley Research
Note: Targets indicate Morgan Stanley Research Price Target / MS 2022 EPS estimates

Morgan Stanley

FOUNDATION

May 2021

Financials Spring Training Teach-In

Consumer Finance

MORGAN STANLEY RESEARCH
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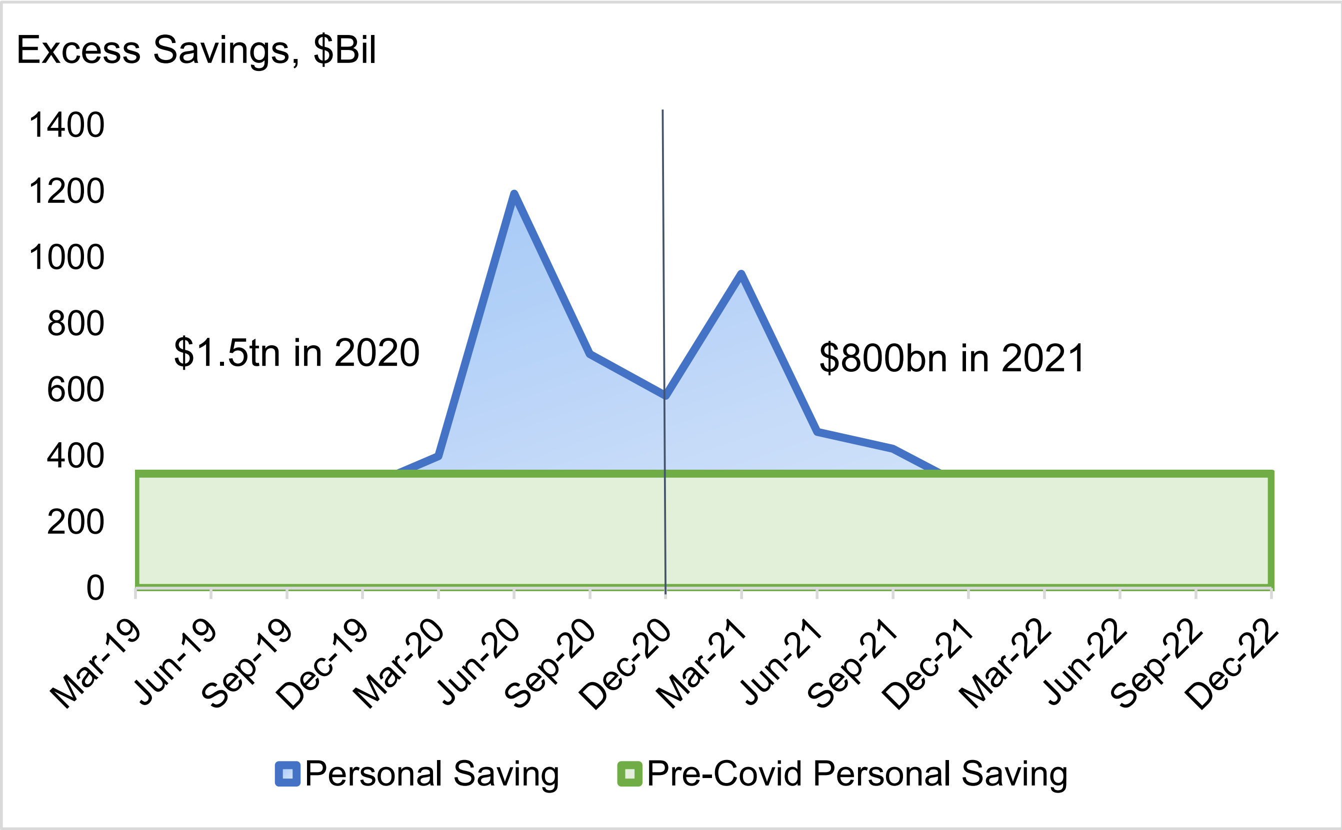
Key Debates

Key Debates

1	Consumer Loan Losses: Lower for Longer
2	Auto Loan Growth: Higher for Longer
3	Deposit Costs: Lower for Longer
4	Will BNPL Excise Card Lending?
5	Valuation: Is Re-Rating Possible?

Investor Debate #1: Consumer Losses: Lower for Longer?

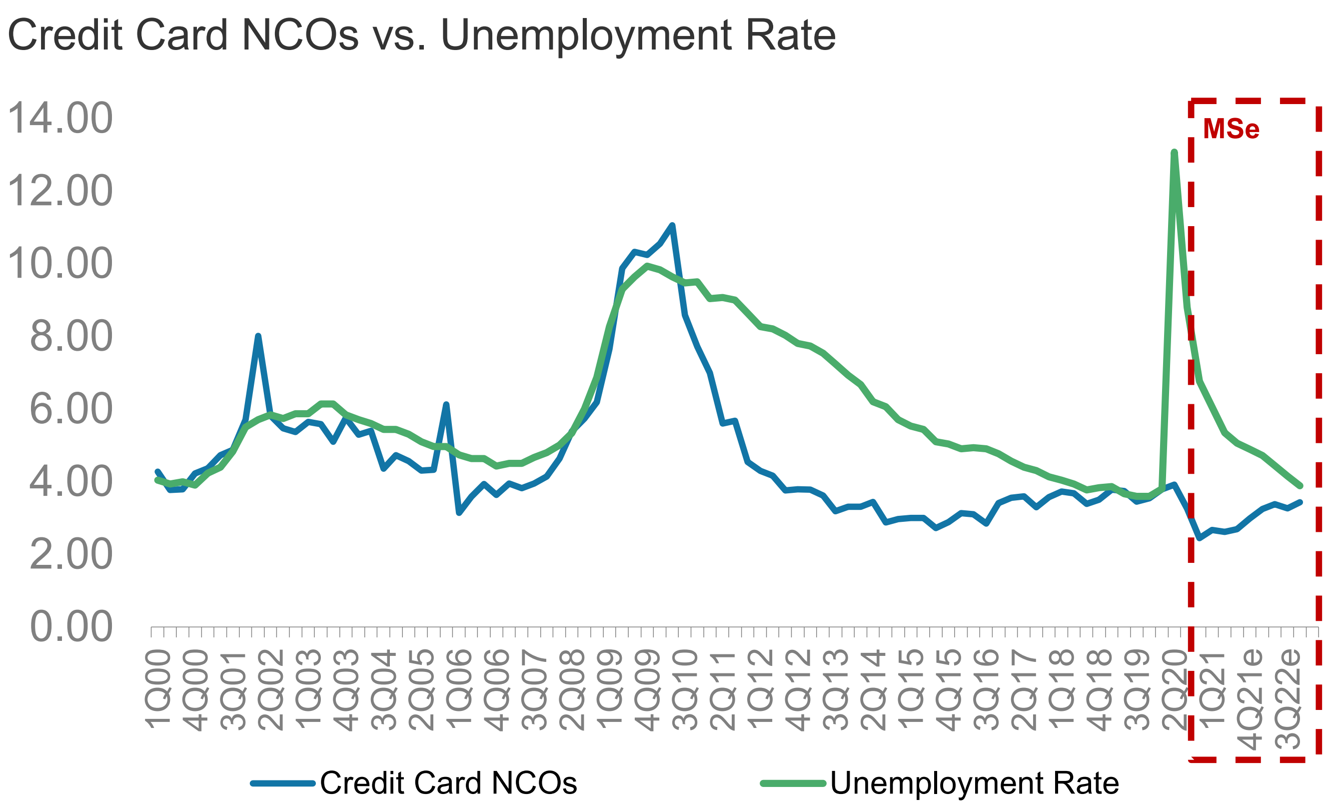
Record Levels of Government Stimulus Driving $2.3 Trillion of Excess Savings for Consumers



Source: Bureau of Economic Analysis, Morgan Stanley Research

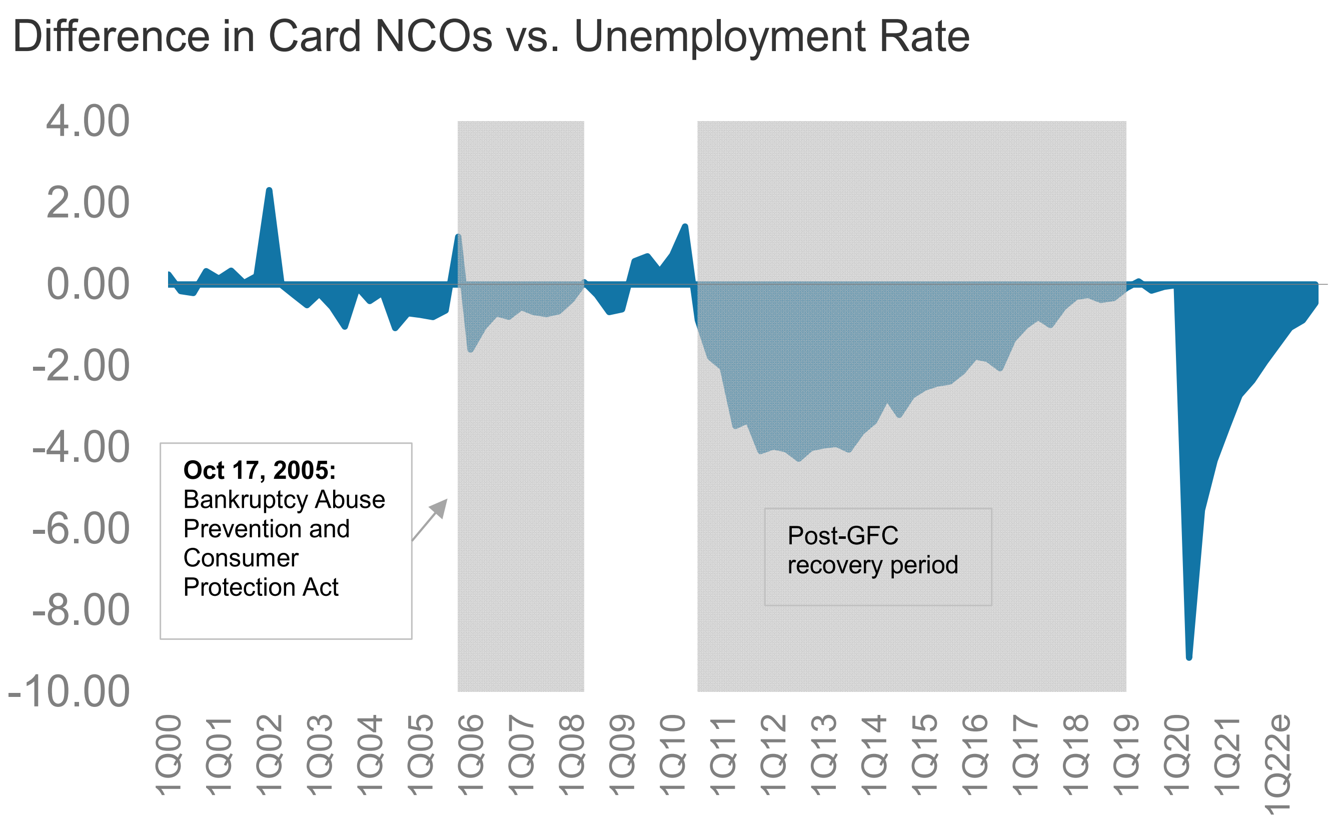
Credit Card Loss Rates vs. Unemployment Rate

Credit Card Loss Rates Historically Have Tracked Unemployment… But Not This Time…



Source: Federal Reserve, Bureau of Economic Analysis Company data, Morgan Stanley Research

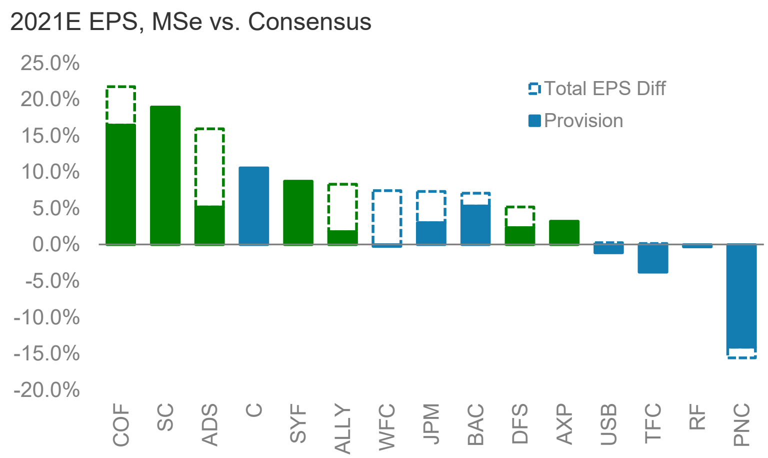
Expect Card NCOs to Run Below Unemployment for Next Several Years

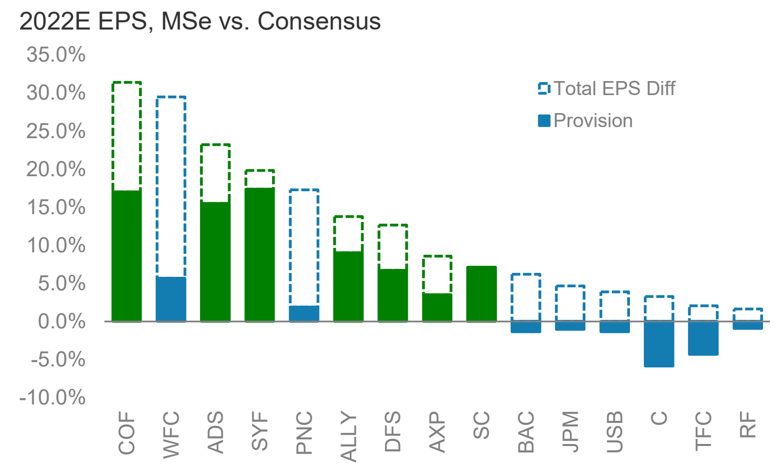


Source: Federal Reserve, Bureau of Economic Analysis Company data, Morgan Stanley Research

MSe EPS vs. Consensus

We are well above consensus EPS expectations in 2022e… driven primarily by lower credit provisions

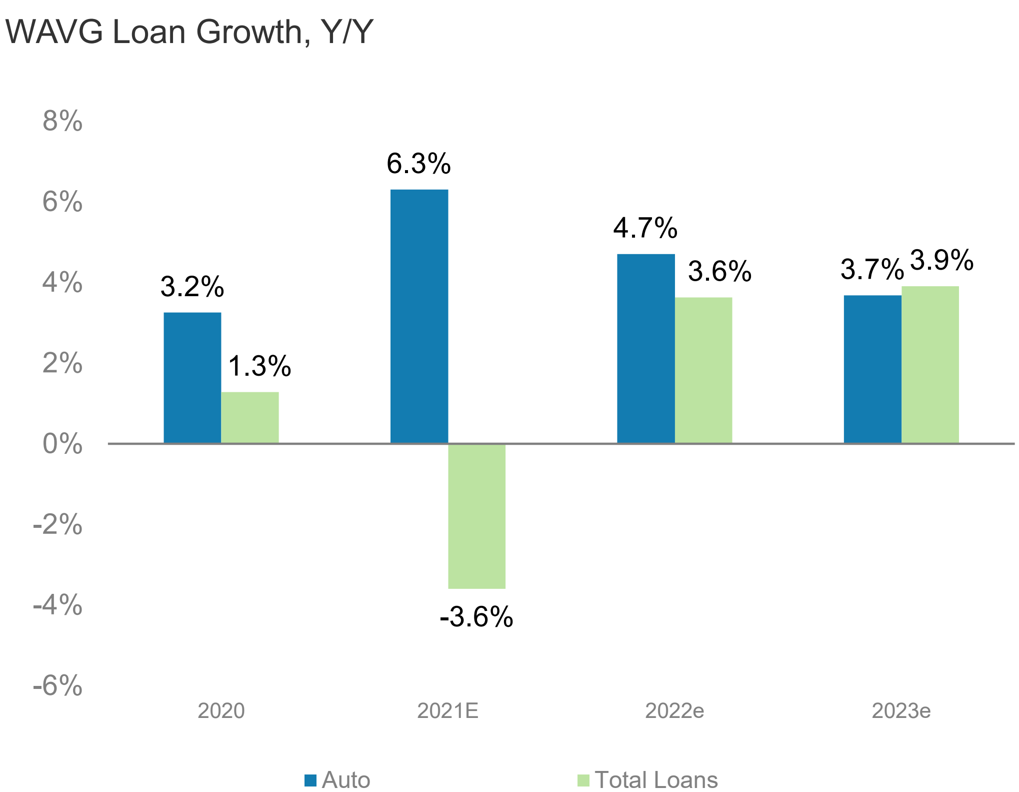




Note: Consumer Finance names shaded in green. Data as of 4/26/2020.
Source: Thomson Reuters, Company data, Morgan Stanley Research

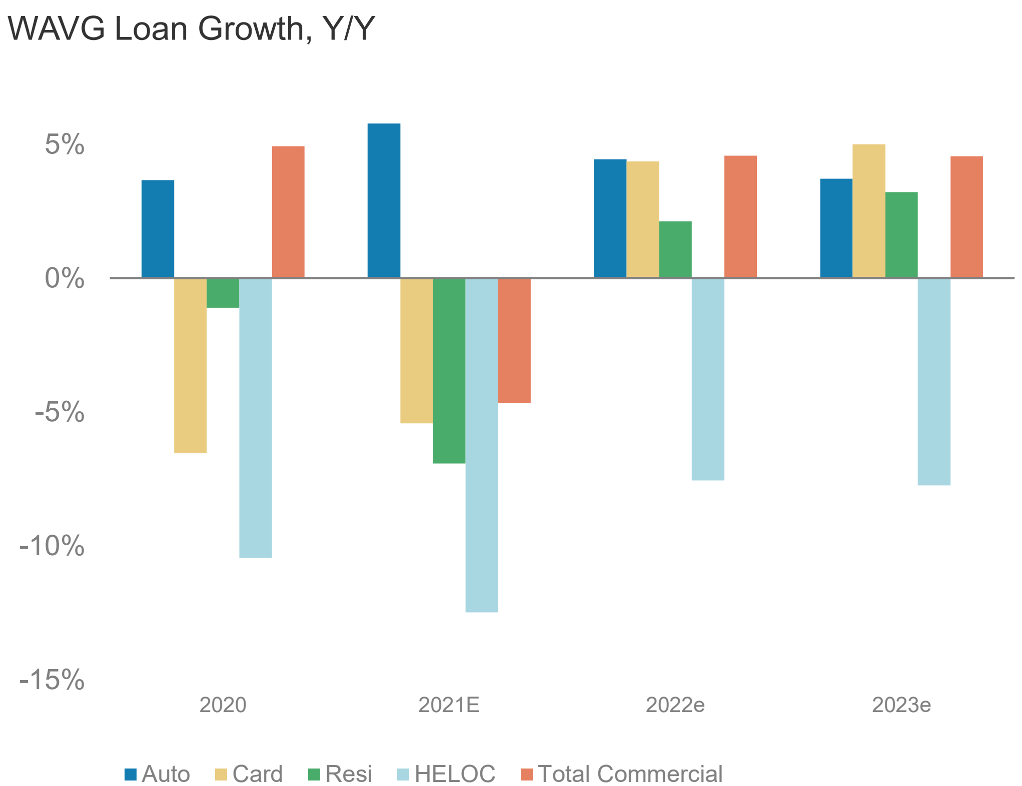
Investor Debate #2: Auto Loan Growth: Higher for Longer

Auto loan growth outpacing total loan growth at banks



Source: Company data, Morgan Stanley Research Estimates

Auto loans expected to be fastest grower over 3 years



Source: Company data, Morgan Stanley Research Estimates

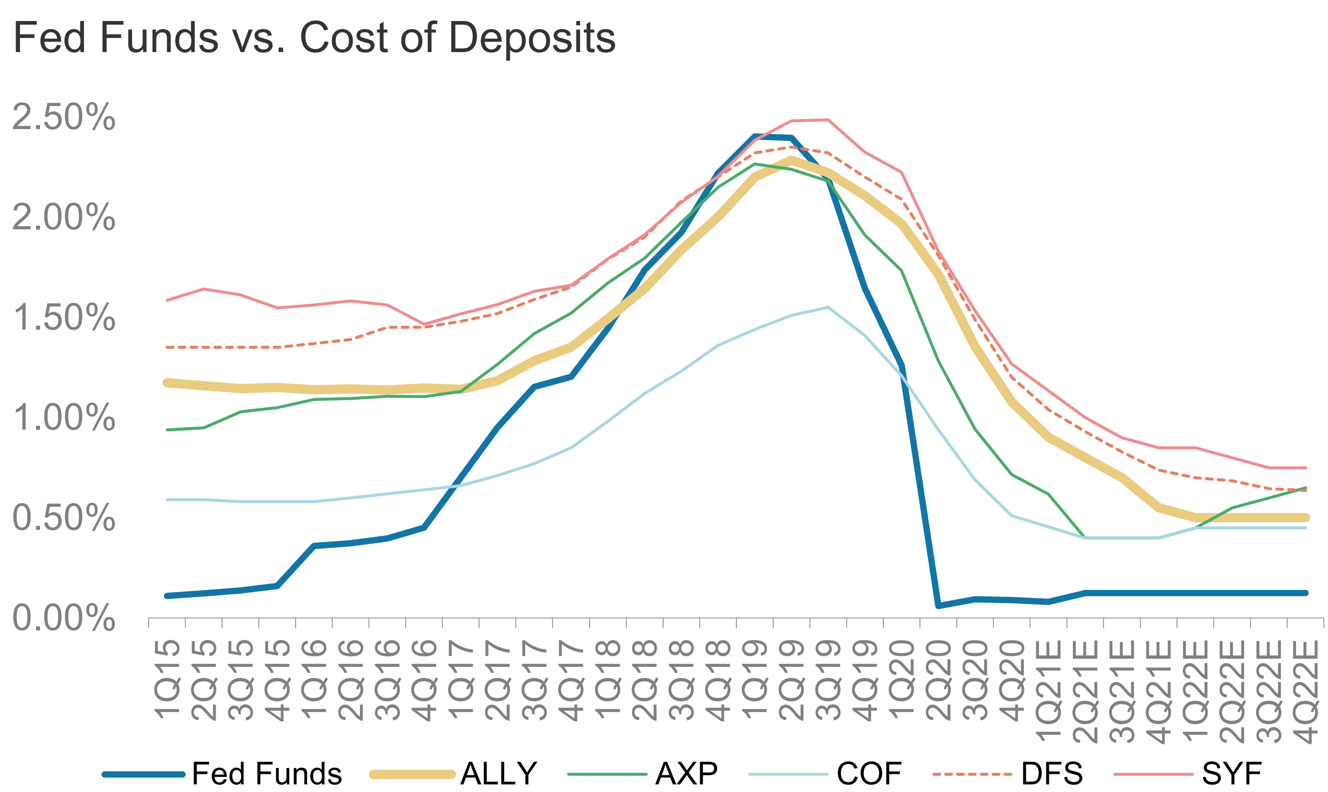
Top 10 banks have over 80% market share

Auto		Market Share	% of Loans
1.	COF	14%	27%
2.	ALLY	14%	55%
3.	JPM	11%	6%
4.	WFC	10%	5%
5.	BAC	7%	4%
6.	SC	7%	100%
7.	TFC	6%	9%
8.	TD (US)	5%	14%
9.	USB	4%	6%
10.	PNC	3%	6%
Top 10 Total		**82%**	

Note: Data as of 4Q20. Auto as percent of domestic loans shown in exhibit.
Source: SNL Financial, Company data, Morgan Stanley Research Estimates

Investor Debate #3: Deposit Costs: Lower for Longer

Consumer Finance companies have seen deposit costs drop dramatically along with Fed Funds

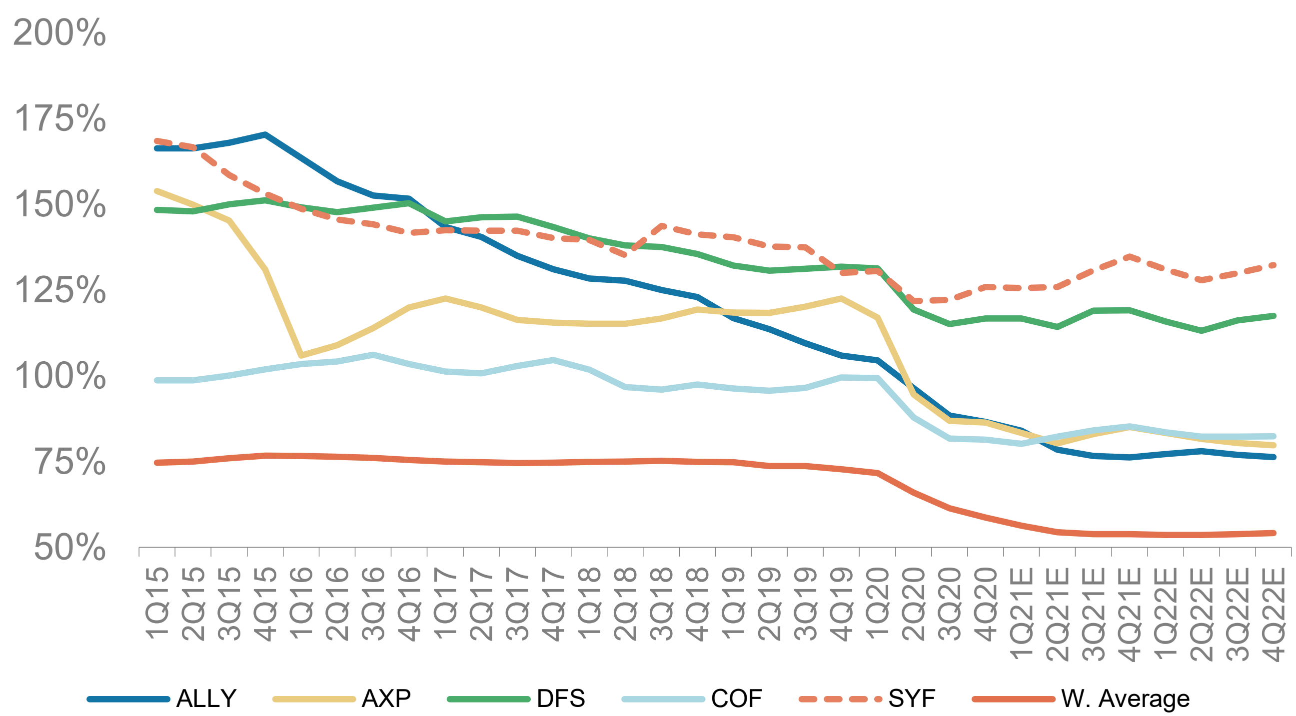


Source: Federal Reserve, Company data, Morgan Stanley Research Estimates

Lower Loan to Deposit Ratios = Lower Bid for Deposits As Rates Rise

Consumer Finance companies likely to be more asset sensitive this rate rise cycle

Loan to Deposit Ratios

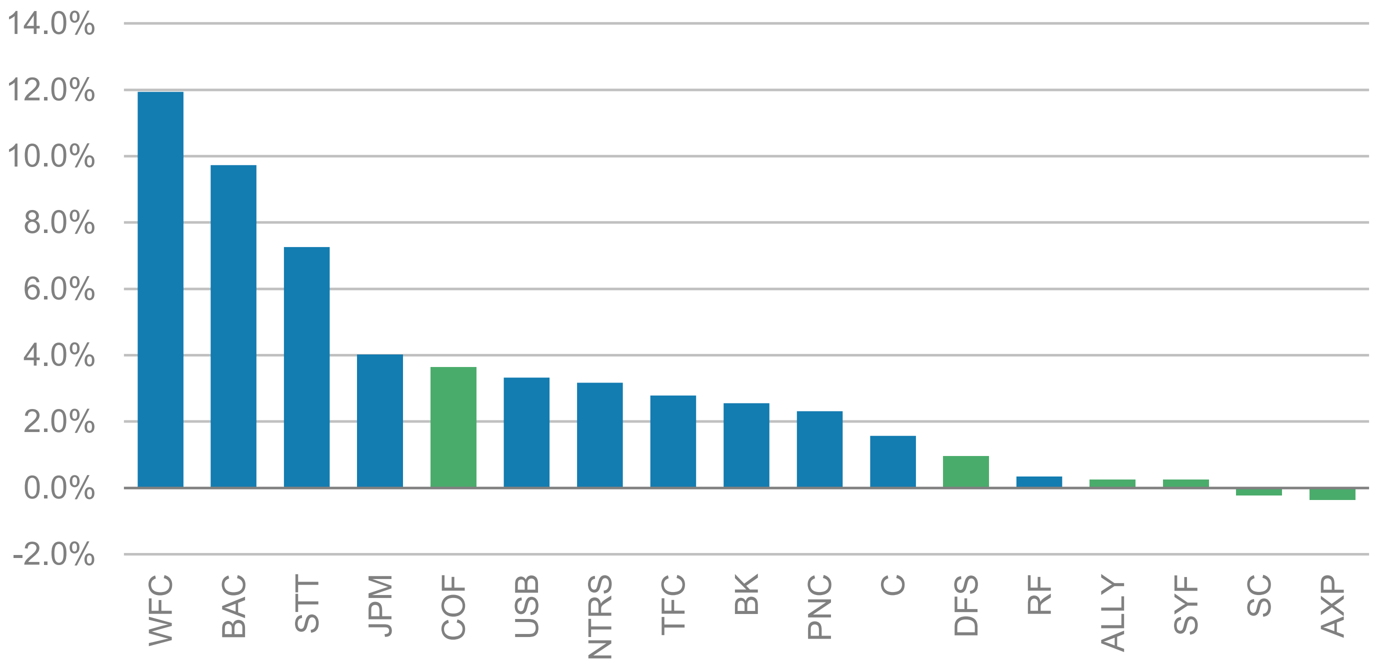


Source: Company data, Morgan Stanley Research Estimates

Asset sensitivity

Consumer Finance companies likely to be more asset sensitive this rate rise cycle

Impact to 2021 EPS if Fed Funds Increases by 50bp
(All Impacts Drop to the Bottom Line)

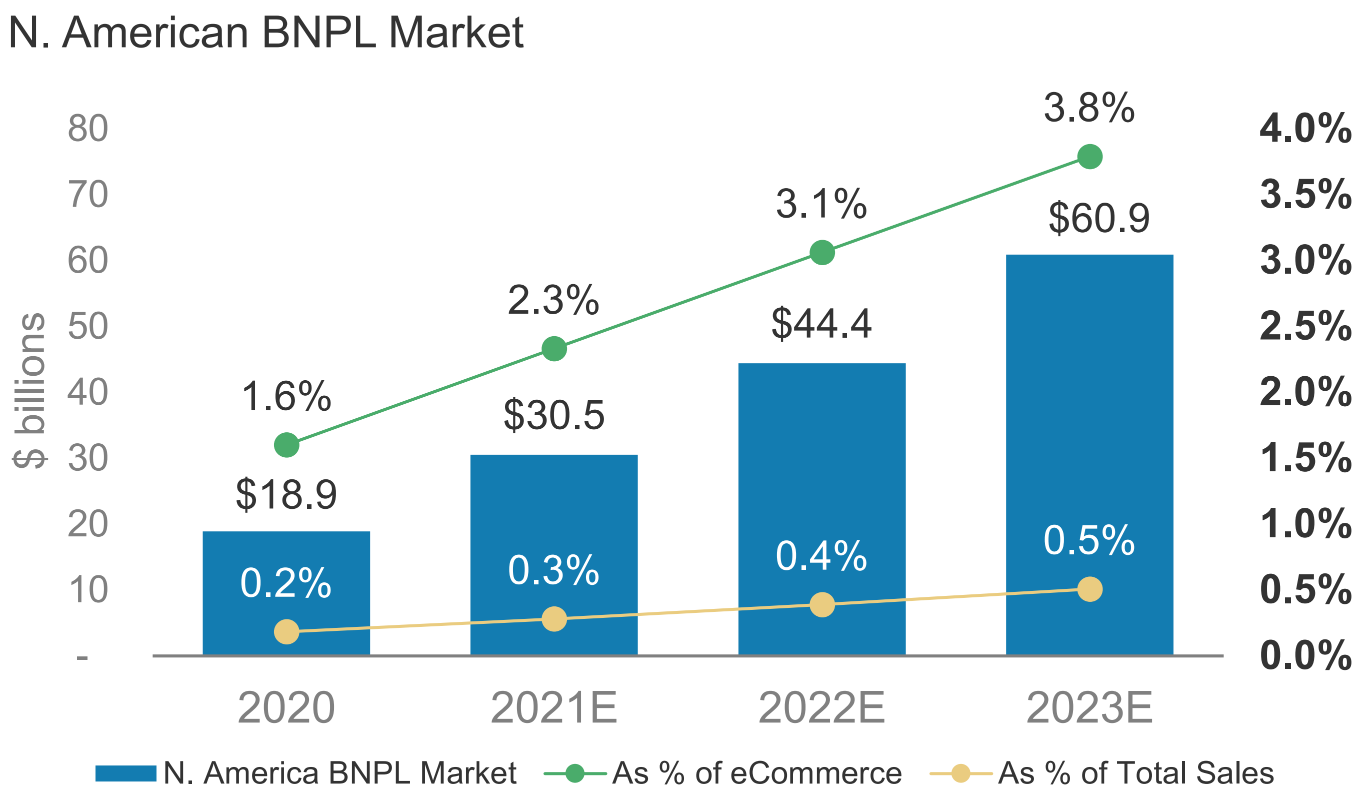


Note: 1) Our EPS impact from higher 10yr yield is based on 4Q20 company NII sensitivity disclosures. 2) We use disclosed instantaneous NII impacts for: BAC, C, JPM, WFC, USB, STT, AXP, COF, DFS, SYF, and SC. We use disclosed gradual NII impacts for: TFC, PNC, RF, BK, NTRS, and ALLY. 3) We estimate the NII impact from long end rates if not disclosed separately. 4) Consumer Finance names shaded in green.

Source: Company data, Morgan Stanley Research Estimates

Investor Debate #4: Will BNPL Excise Card Lending?

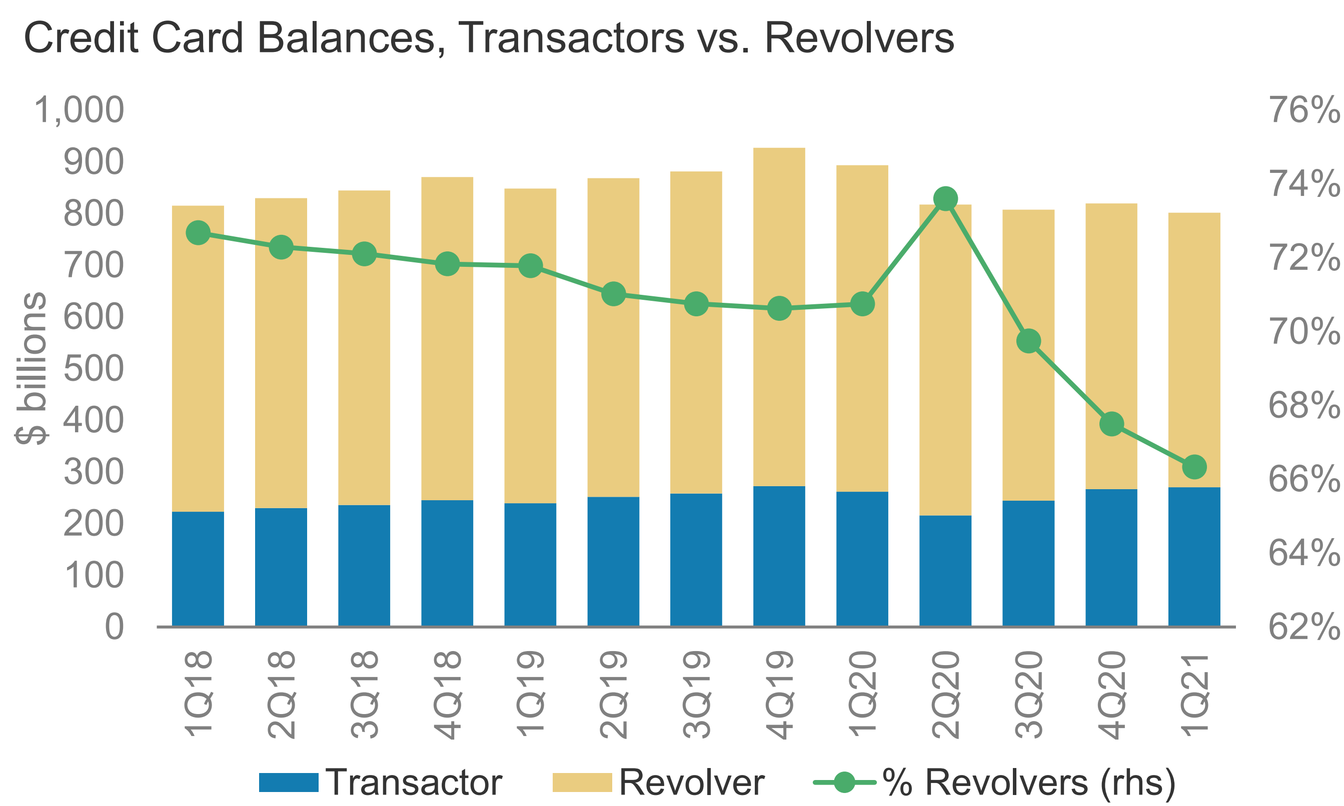
Buy Now Pay Later should continue growing at a rapid clip, but only to a fraction of consumer spend



Source: WorldPay 2021 Global Payments Report, Morgan Stanley Research estimates

Card Lending Has Two Primary Users

Transactors (Points Accumulators) vs. Revolvers

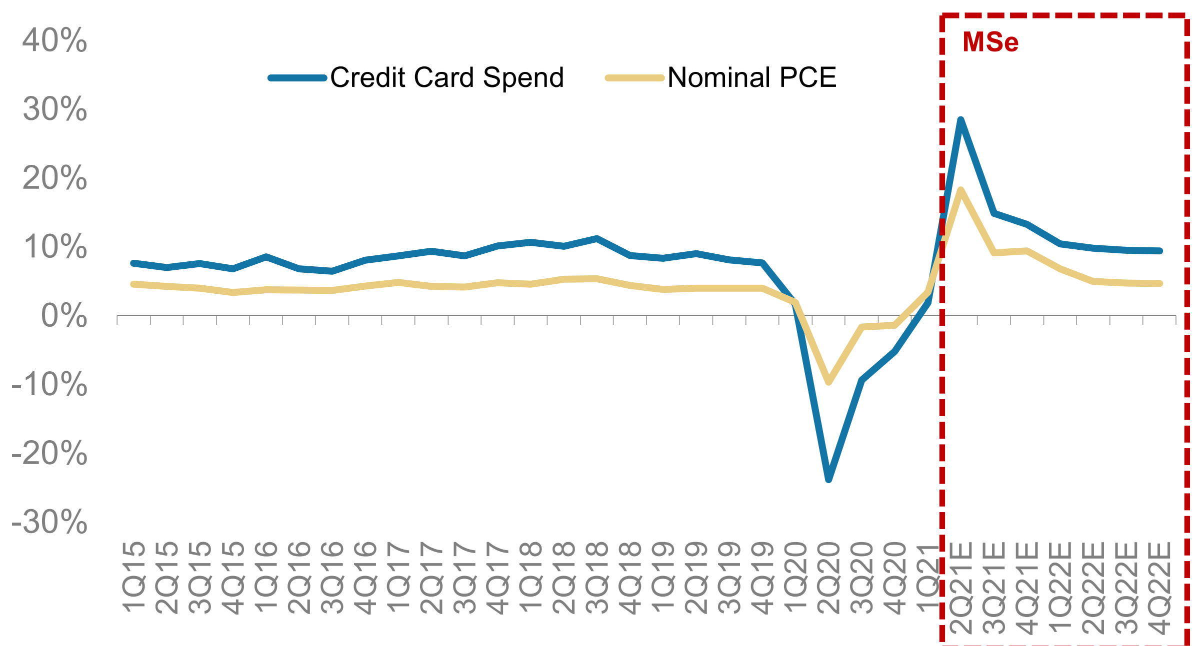


Note: We assume transactors = average payment rate reported by credit card issuer's securitizations (master trust)
Source: FRBNY Household Debt & Credit Report, Company data, Morgan Stanley Research.

Consumer Spending

Credit card spending to accelerate rapidly as economic recovery hits full swing

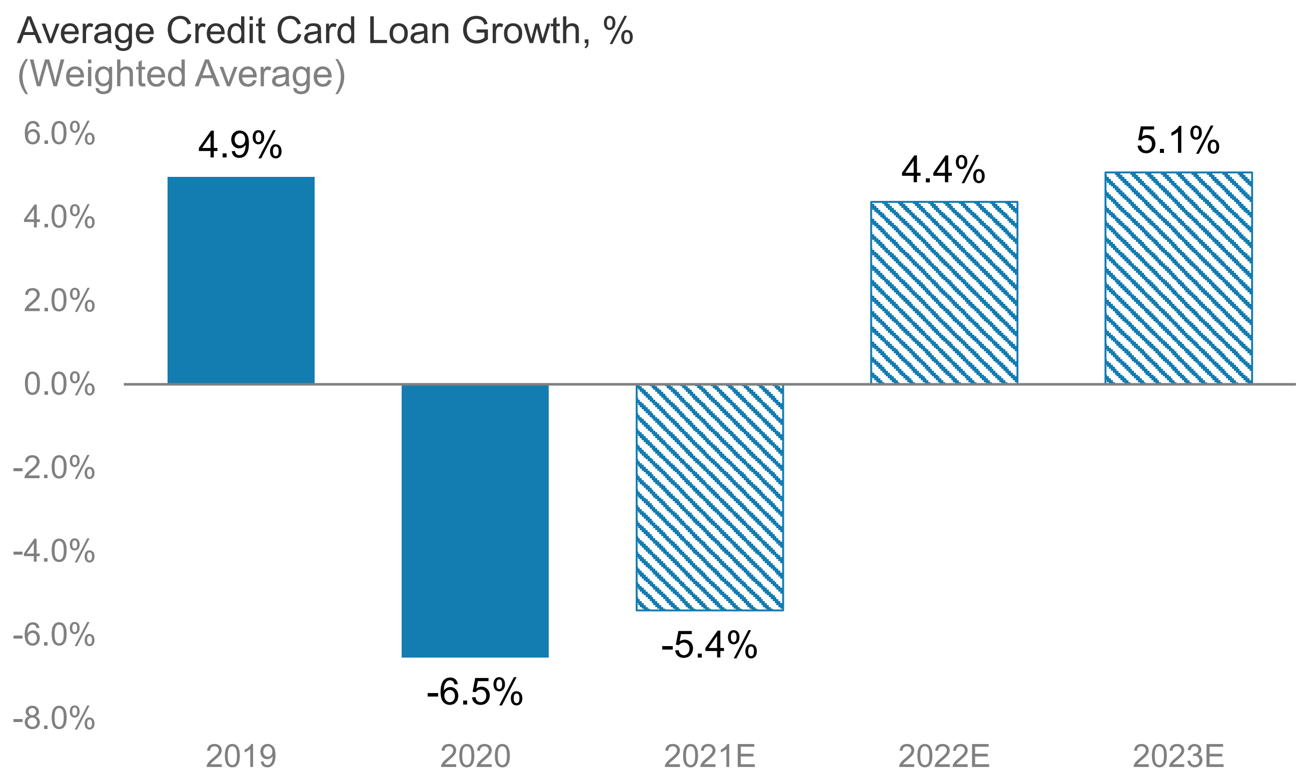
Y/Y Growth in Credit Card vs. Total Consumer Spend



Note: Credit card spending forecasts are weighted average for AXP, ADS, Citi, COF, DFS, JPM, SYF. Where possible, we use US or North American volumes only.
Source: Bureau of Economic Analysis, Company data, Morgan Stanley Research Estimates

Card Growth Should Rebound

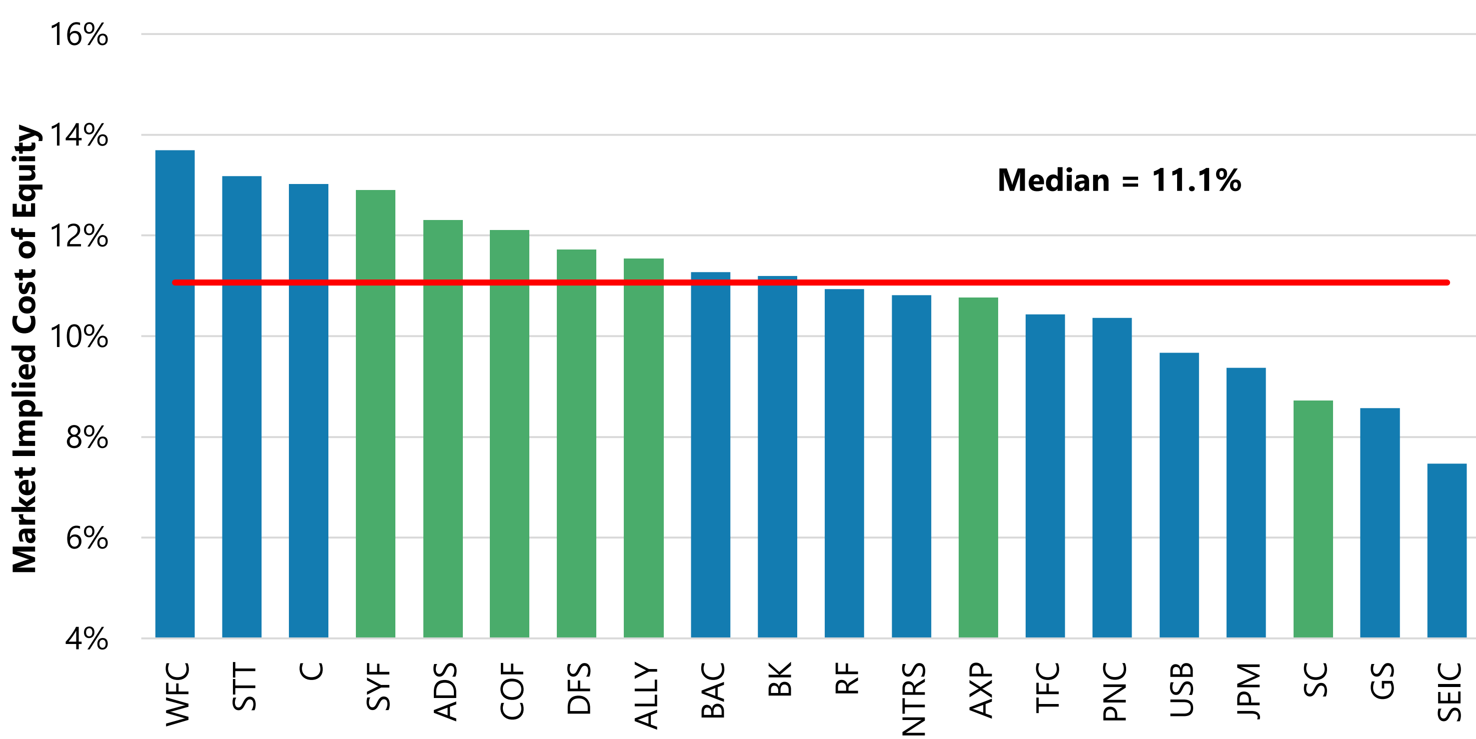
As stimulus burns off and forbearance ends on mortgages/rents, expect card loan growth to resume



Source: Company data, Morgan Stanley Research Estimates

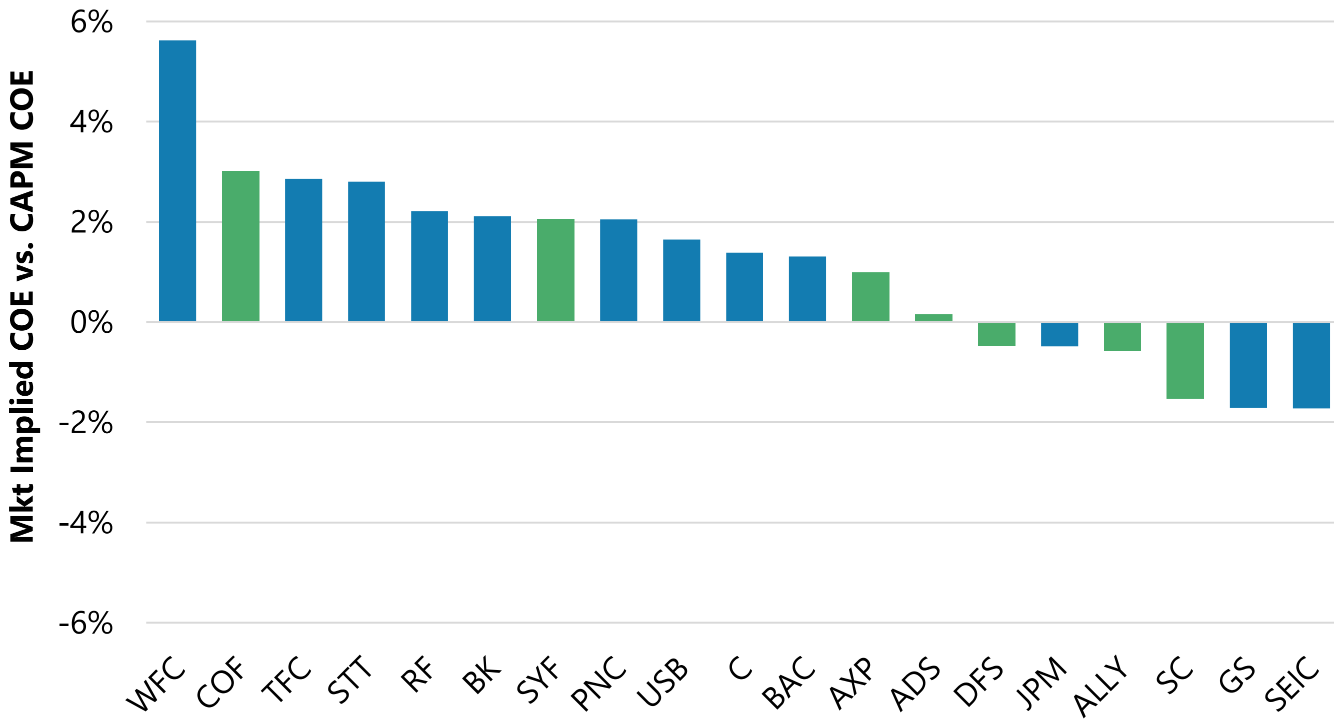
Investor Debate #5: Valuation: Is Re-Rating Possible?

Consumer Finance Market-Implied Cost of Equity



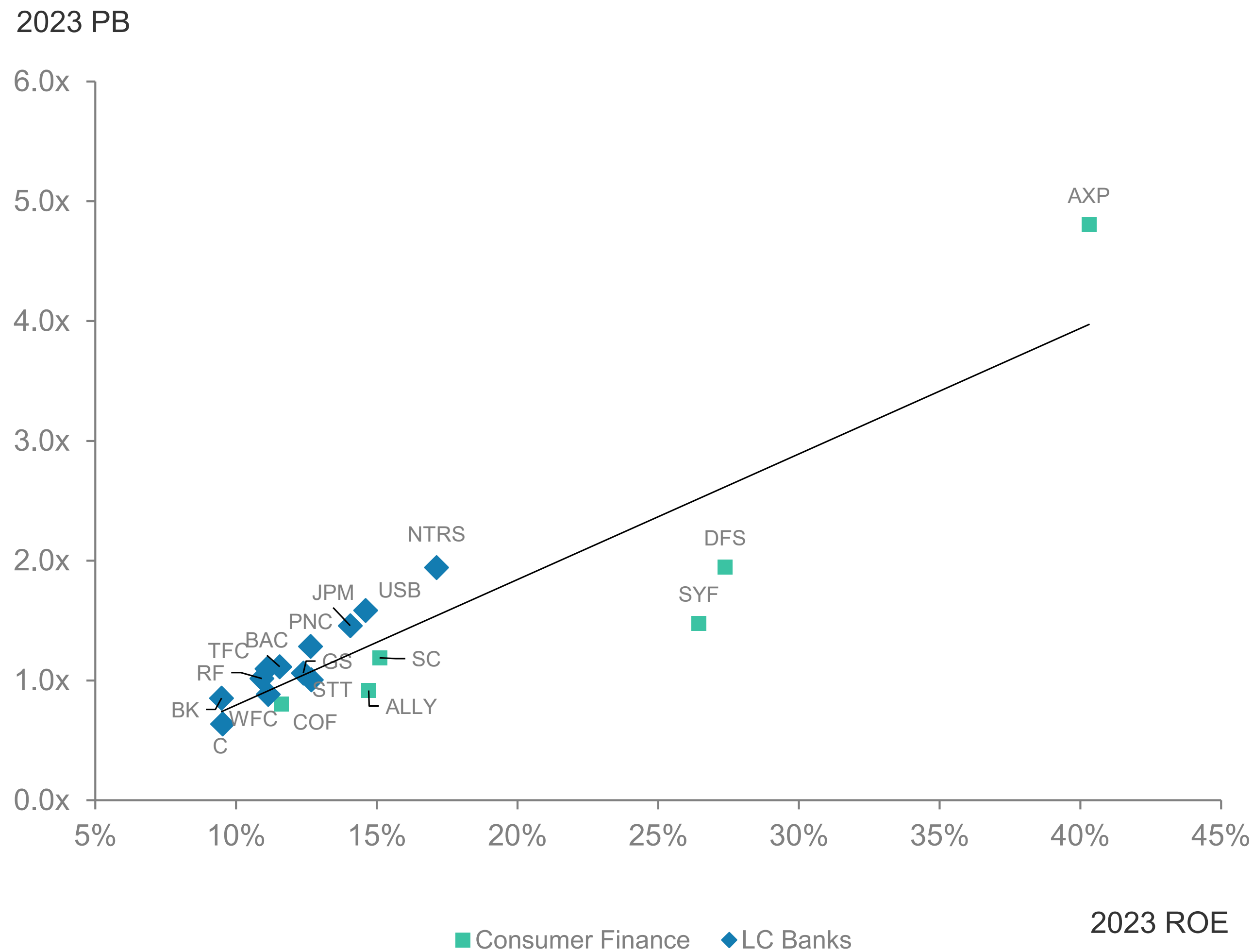
Source: Thomson Reuters, Company data, Bloomberg, Morgan Stanley Research estimates.
Consumer Finance names shaded green

Majority of Consumer Finance coverage trading with higher market implied COE vs. historical CAPM COE



Note: CAPM based on max beta from Bloomberg. Consumer Finance names shaded green.
Source: Thomson Reuters, Company data, Bloomberg, Morgan Stanley Research estimates.

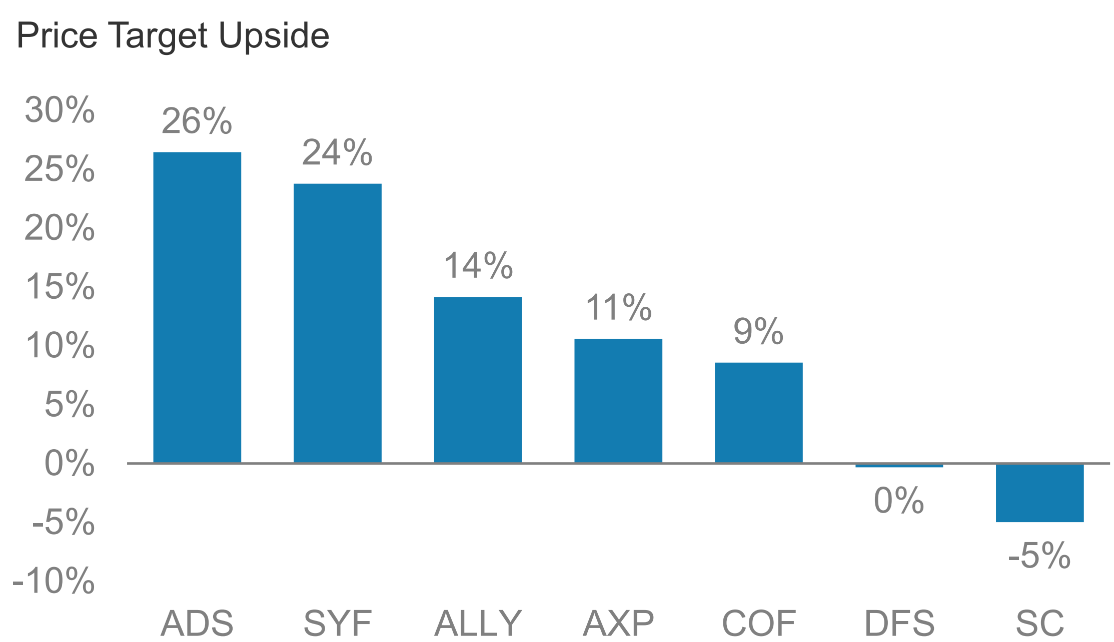
Consumer Finance Undervalued relative to Banks



Note: CAPM based on max beta from Bloomberg. Data as of 4/26/2021
Source: Thomson Reuters, Company data, Bloomberg, Morgan Stanley Research estimates.

Consumer Finance Price Target Upside

Base Case Upside to Price Target

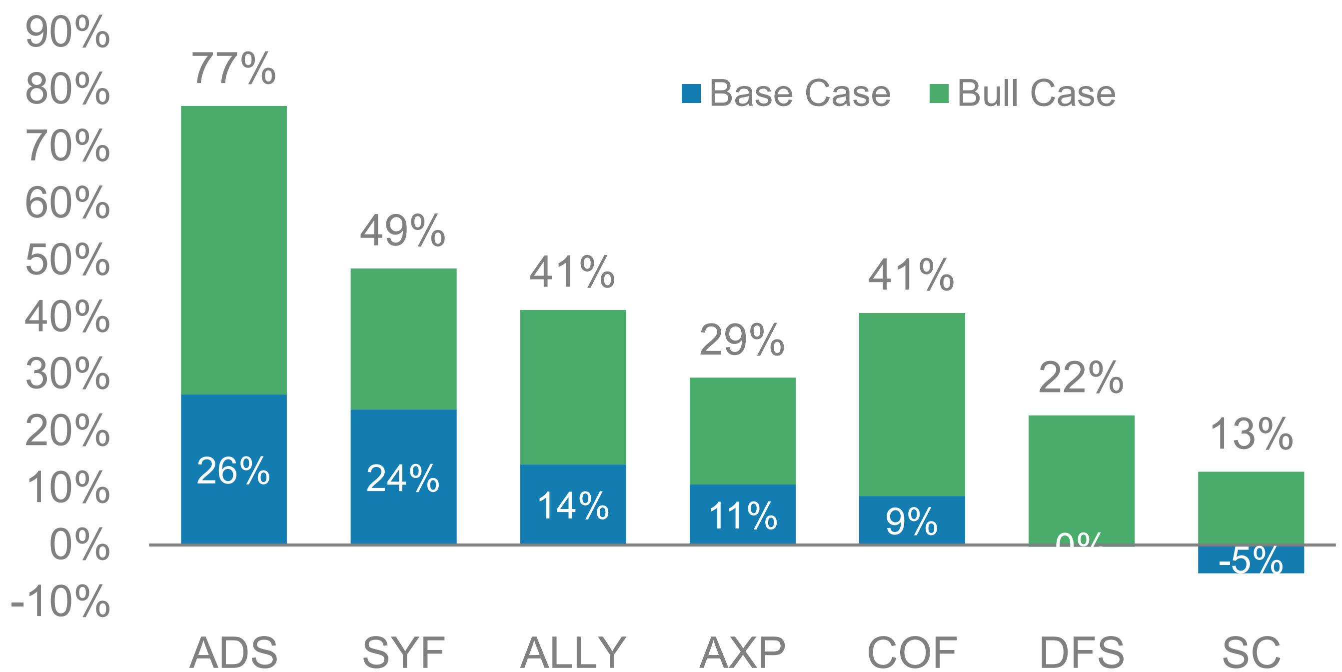


Note: Data as of April 29, 2021
Source: Thomson Reuters, Morgan Stanley Research Estimates

Bull Case Assumes Stocks Re-Rate to a 9-10% CoE

Why?
1) Lower for Longer Consumer Credit Losses
2) Higher ROEs on Optimized Capital

Price Target Upside

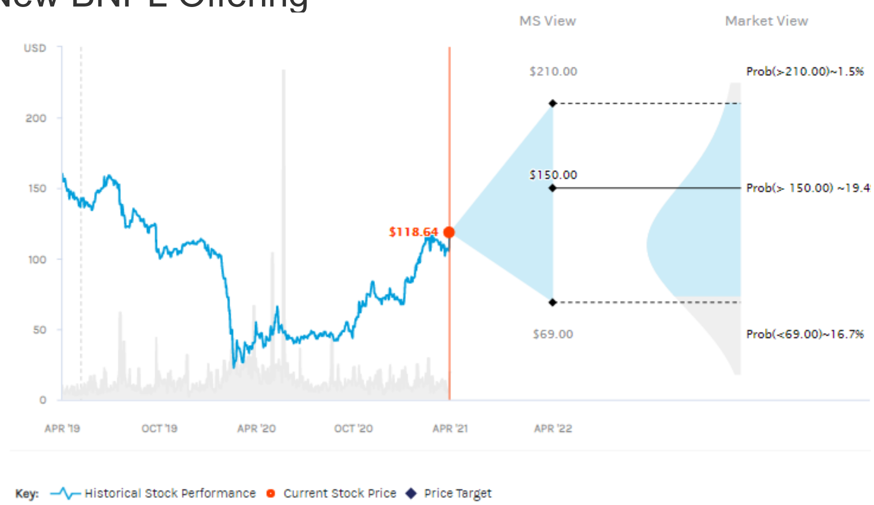


Note: Data as of April 29, 2021
Source: Thomson Reuters, Morgan Stanley Research Estimates

Top Picks

Alliance Data Systems Risk Reward (ADS.N)

Undervalued vs. Credit Card Peers, High Growth Potential of New BNPL Offering



Source: Thomson Reuters, Morgan Stanley Research. Stock price as of April 29, 2021

Price Target 15x Base Case 2021e EPS of $15.88; Sum of the Parts based on 1) 9x target P/Revenues on Bread, 2) ~9x target PE on ex-Bread)	**$150**
Bull ~12x Bull Case EPS of $19.54, discounted back 1 year by 10%	**$210**
Base ~10.5x Base Case 2021e EPS of $15.88, discounted back 1 year by 10%	**$150**
Bear 8x Bear Case 2023e EPS of $9.50, discounted back 1 year by 10%	**$69**

Why Overweight

- New mgmt with consumer finance focus streamlines ADS into a pure play card company; potential strategic action on non-card business, revamp of KPIs, and shoring up balance sheet, all drives increased investor confidence
- Recent launch of BNPL Bread acts as slingshot to future of retail, offers high growth potential
- Card Services business trades at discount to peers when accounting for higher BNPL revenue multiple
- Credit costs higher vs peers, but should increase only modestly in 2021, and could even stay flat; large reserve releases expected
- Economic recovery, shift into non mall-based retailers, launch of Bread positions ADS for return to revenue growth by 1H21

Investment Drivers

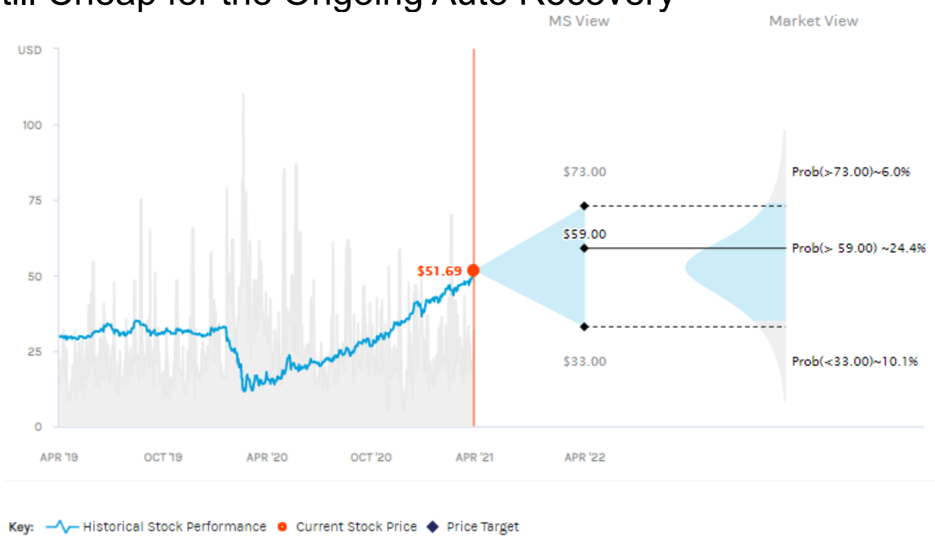
- Credit loss trend improves; data on 15th of month
- Streamline into pure play card issuing bank
- New partner wins, growth in faster verticals
- Ramp of BNPL business post Bread acquisition
- Retail sales rebound
- Shore up balance sheet driving up TCE/TA

Risks to Achieving Price Target

- Concentration risk: 10 largest clients 48% of rev (including L Brands)
- Unsuccessful at gaining eCommerce share with new Bread offering
- Alternative payments erode ADS‘s moat in retail
- Increased regulation

Ally Financial Risk Reward (ALLY.N)

Still Cheap for the Ongoing Auto Recovery



Source: Thomson Reuters, Morgan Stanley Research. Stock price as of April 29, 2021

Price Target 9x Base Case 2023e EPS of $7.25, discounted back 1 year by 10%	**$59**
Bull 9x Bull Case 2023e EPS of $8.96, discounted back 1 year by 10%	**$73**
Base 9x Base Case 2023e EPS of $7.25, discounted back 1 year by 10%	**$59**
Bear 8x Bear Case 2023e EPS of $4.57, discounted back 1 year by 10%	**$33**

Why Overweight

- Credit quality continues to outperform amid elevated consumer savings rates, government stimulus, and quicker than expected decline in unemployment rate. Roll-out of vaccine, broader return to work should bode well for a less severe downturn in credit quality
- Quicker than expected bounce in consumer demand for autos since late April '20 coupled with slow ramp in auto production supportive of used car prices, driving further support to credit results, NIM
- Valuation remains attractive at ~1x 2022 book value per share on an 2023e ROE of 15% (core ROTCE ~16.5%)

Investment Drivers

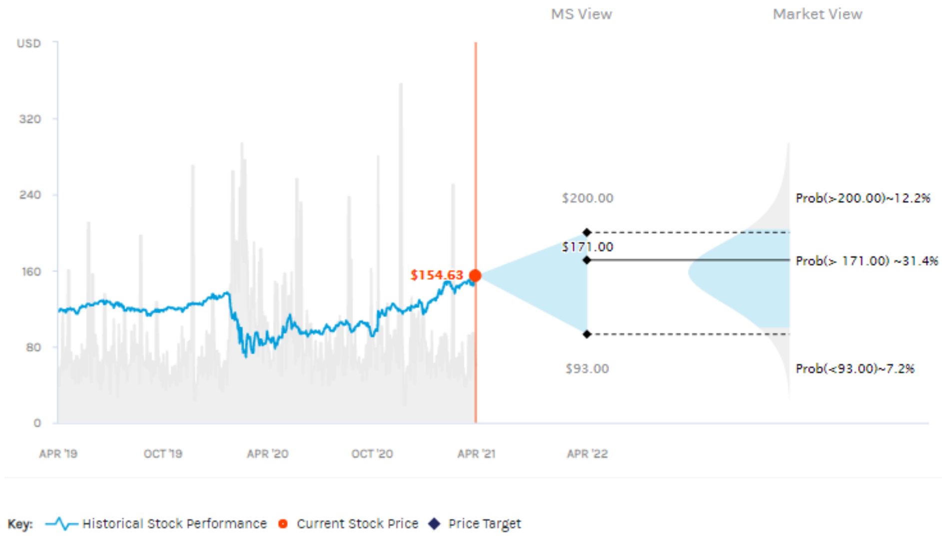
- Consumer credit remains subdued amid strong used car prices, better unemployment, stimulus
- Used car prices benefit from recovery, low inventories
- V-shaped recovery drives better than expected demand for sales, loan growth

Risks to Achieving Price Target

- End of stimulus, forbearance drives up auto loan losses
- Used car prices fade as new production ramps
- Non-auto diversification efforts falter

American Express Risk Reward (AXP.N)

Best Vaccine Play: Booster Shot for T&E Recovery



Source: Thomson Reuters, Morgan Stanley Research. Stock price as of April 29, 2021

Price Target 16x Base Case 2023e EPS of $11.75, discounted back 1 year by 10%	**$171**
Bull 16x Bull Case 2023e EPS of $14.06, discounted back 1 year by 10%	**$200**
Base 16x Base Case 2023e EPS of $11.75, discounted back 1 year by 10%	**$171**
Bear 14x Bear Case 2023e EPS of $7.28, discounted back 1 year by 10%	**$93**

Why Overweight

- Revenue growth set to take off in 2H21 as vaccine rollout drives a quicker return to travel. Expect top-line growth rebounds 10-11% in FY21 after a sharp 17% decline in FY20
- T&E to recover faster than expected. Delta, a material portion of AXP volumes, should see FY22 travel volumes be consistent with FY19 levels. This drives a ~40/60% rebound in AXP's T&E volumes in FY21/FY22 after a sharp ~60% decline in FY20
- Credit quality best among card names; vaccine rollout + continued declines in unemployment drives ~$1.8B of reserve releases over 2021-22.

Investment Drivers

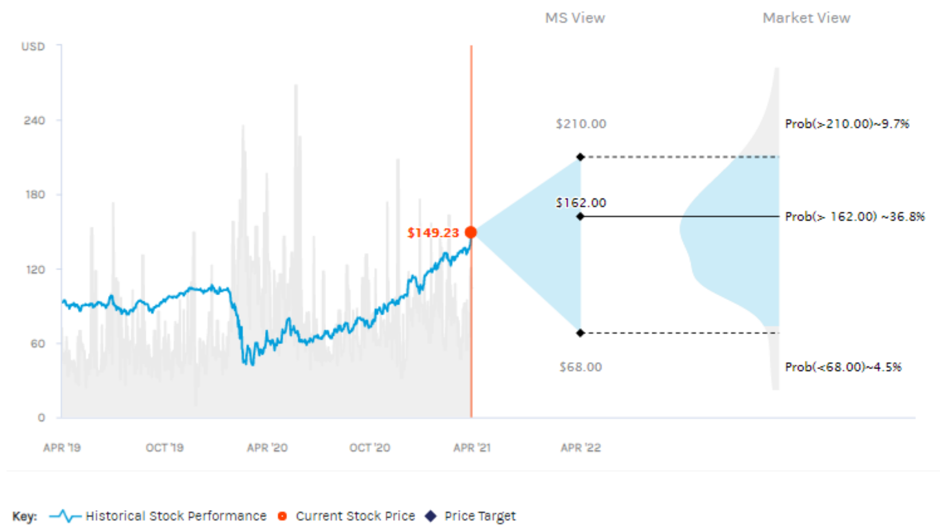
- Monthly credit data on 15th of each month
- Travel rebounds sharply as vaccine gets distributed in 2021, driving sharp rebound in card volumes and revenues by 2H21
- Credit better vs peers with higher subprime exposure

Risks to Achieving Price Target

- Vaccine distribution slow, delaying T&E rebound
- Credit costs accelerate amid lack of progress on stimulus
- Discount rate pressure resumes
- Negative operating leverage as AXP pays up to retain customers

Capital One Risk Reward (COF.N)

Most Levered to Declining Unemployment



Source: Thomson Reuters, Morgan Stanley Research. Stock price as of April 29, 2021

Price Target — **$162**
9x Base Case 2023e EPS of $19.81, discounted back 1 year by 10%

Bull — **$210**
9x Bull Case 2023e EPS of $25.72, discounted back 1 year by 10%

Base — **$162**
9x Base Case 2023e EPS of $19.81, discounted back 1 year by 10%

Bear — **$68**
8x Bear Case 2023e EPS of $10.09, discounted back 1 year by 10%

Why Overweight

- COF is one of the most levered banks to lower unemployment, given one of the highest levels of excess loss absorbing capacity as % of market cap among all LC Banks. This means as unemployment moves lower, to ~5% by YE21 as our economists expect, ~$17 per share of excess capital today + more from additional excess capital from future reserve release can return to shareholders
- Credit quality to remain benign. A powerful combination of stimulus, generous forbearance programs is supporting an incredibly low level of credit losses... particularly for subprime consumers. Expect credit losses will only rise modestly from here, to ~4% over FY2022 in US credit card (vs 10%+ in GFC)

Investment Drivers

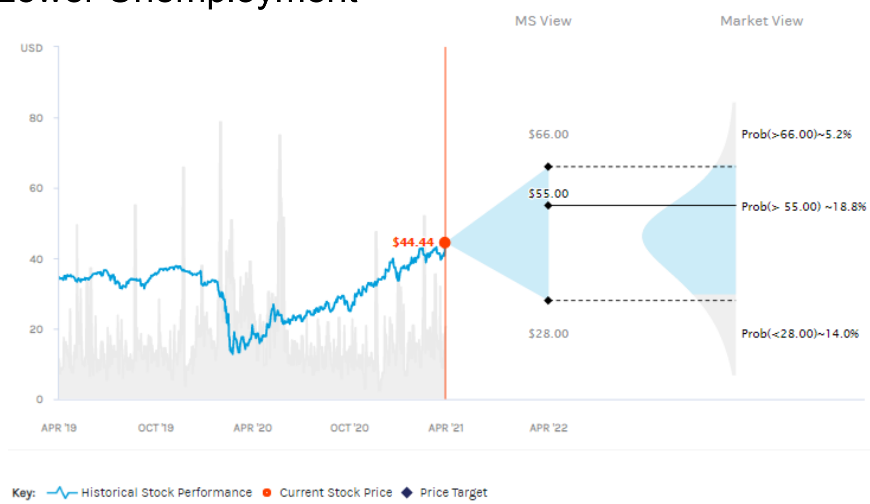
- Monthly credit quality data on 15th of each month
- Only modestly higher credit as unemployment drifts lower, gov't passes new stimulus (also driving large reserve releases)
- Excess capital return
- Consumer spending trends
- New retail/cobrand card wins

Risks to Achieving Price Target

- Reserve releases slower as virus spikes
- Slower return of excess capital
- Higher credit costs on subprime skew
- Slower operating leverage

Synchrony Financial Risk Reward (SYF.N)

Digitization Expanding Client Footprint; Subprime Levered to Lower Unemployment



Source: Thomson Reuters, Morgan Stanley Research. Stock price as of April 29, 2021

Price Target 9x Base Case 2023e EPS of $6.74, discounted back 1 year by 10%	**$55**
Bull 9x Bull Case 2023e EPS of $8.12, discounted back 1 year by 10%	**$66**
Base 9x Base Case 2023e EPS of $6.74, discounted back 1 year by 10%	**$55**
Bear 8x Bear Case 2023e EPS of $3.84, discounted back 1 year by 10%	**$28**

Why Overweight

- V-shaped recovery, lower unemployment to provide sustained support to credit. Gov't stimulus + generous forbearance programs are supporting a low level of credit losses, particularly for subprime consumers. Expect SYF credit losses to only rise modestly from here, with no credit cycle in our models anymore, as unemployment drifts lower towards our economist's ~5% '21 target
- High growth potential; new partnerships (Venmo, Verizon), exposure to online leaders AMZN & PYPL
- Among the highest levels of loss absorbing capacity as % of market cap. As unemployment moves lower, future reserve releases drives shareholder return

Investment Drivers

- Monthly credit data on the 15th of month
- Excess capital return
- Only modestly higher credit as unemployment drifts lower, new stimulus comes
- Rebound in retail sales + loan growth; Venmo/Verizon launches providing another leg
- New partner wins, renewals

Risks to Achieving Price Target

- Credit deteriorates as subprime consumers avoid paying store cards
- Reserve releases slower
- Retail model faces increased competition from alternative lenders

Morgan Stanley

FOUNDATION

May 2021

Financials Spring Training Teach-In

Midcap Banks

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Overview: Investment Debates and Top Ideas

Improving Outlook

We are bullish on the outlook for the banks given a steepening yield curve, solid progress on the vaccine rollout, improving credit conditions, and a gradual reopening of the economy.

Interest Rates

Low interest rates have put downward pressure on bank NIMs, with average NIM down 55 bps since the first Fed funds cut in 3Q19. While we still expect modest core loan yield compression for the next few quarters, the steepening yield curve could help stabilize core NIM by year-end. We expect the first hike in Fed funds in early 2023.

Loan Growth

We expect loan growth to be relatively weak in 1H21 in part due to PPP forgiveness, with average balances declining by 0.8% in 1Q21 and remaining flat in 2Q21, but accelerating in the back half of the year as the vaccine rollout progresses and PPP is less of a headwind. Ex PPP, we expect EOP core loan growth to rise by a median of 3.8% by year-end.

Credit Quality / Reserves

Credit quality has been much better than we had expected at the beginning of the pandemic with 2020 NCOs of just 23 bps. Moreover, we have consistently lowered our NCO estimates for 2021 given credit trends and the stimulus programs, now expecting just 25 bps of NCOs. Compared to a 1.68% ACL ratio at year-end 2020, we expect 35 and 20 bps of reserve release over the next two years, temporarily boosting bank EPS.

Bank M&A

We expect bank M&A to pick up sharply in 2021. The pandemic caused bank M&A activity to slow dramatically with just 116 deals announced in 2020 compared to an average of closer to 261. But with the successful vaccine rollout, combined with all the traditional reasons why banks pursue M&A (i.e. ability to take out expenses, the need for further tech investments), the need for M&A remains alive and well. That said, our analysis shows that owning the buyer bank has typically been a losing strategy for bank investors.

Valuations

The banks are trading at 11.6x our 2022e EPS, well below their historical average P/E multiple of 14.1x, and are trading at a 48% discount to the S&P 500 (vs. an average of -15%).

Top Investment Ideas

In order of preference: Signature Bank (SBNY), East West (EWBC), Citizens (CFG), Synovus (SNV), and Fifth Third (FITB).

Asset Sensitivity

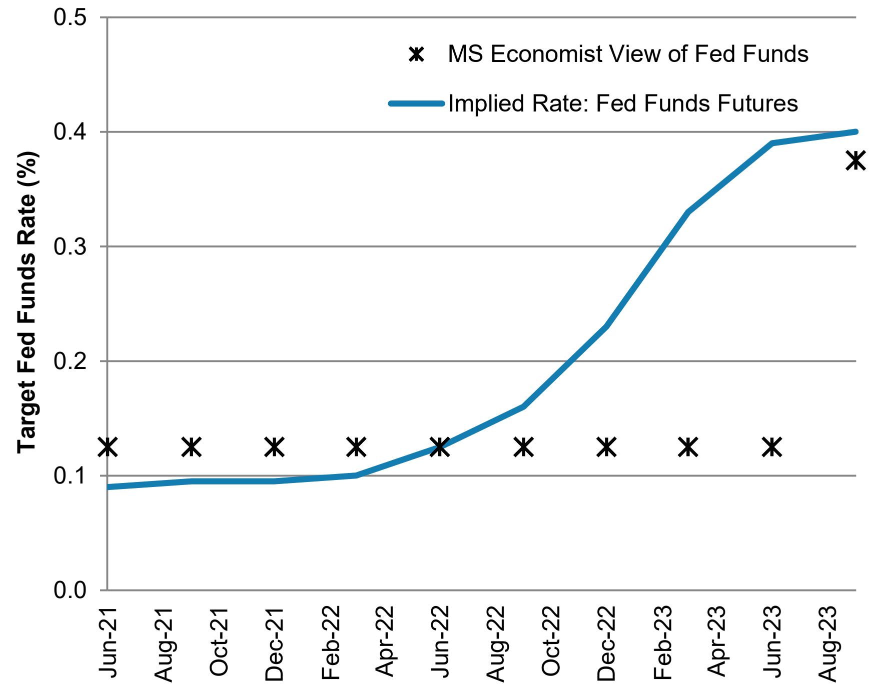
Fed Funds Likely to Stay at Zero for Some Time

Expected Pace of Rate Hikes

After collapsing by as much as 145 bps due to the pandemic, market expectations for year-end 2022 Fed funds have risen to 23 bps, signaling an increasing probability of a rate hike by the end of next year.

Fed Funds Futures vs. MS Economist Targets

Our economists expect the first rate hike to occur in 3Q23, followed by a gradual pace of policy normalization over time. The Fed funds futures curve, however, is signaling the first hike in early 2023.

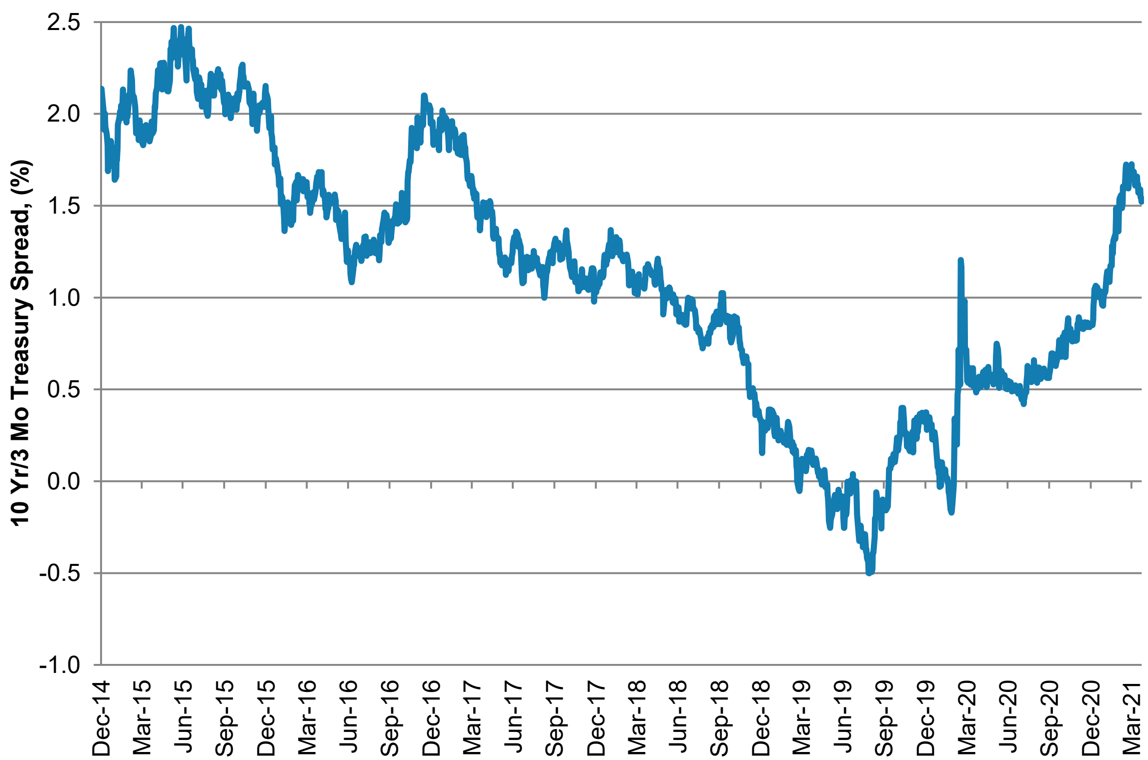


Source: Bloomberg, Morgan Stanley Research estimates
Note: Data as of 4/22/2021

Asset Sensitivity

Steeper Yield Curve is a Tailwind to Longer-Duration Lenders

The spread between the 10-year and the 3-month Treasury yields has steepened considerably over the last six months, but low long-term rates will still weigh on net interest margin for most of the banks over the next several quarters.



Impact on Banks

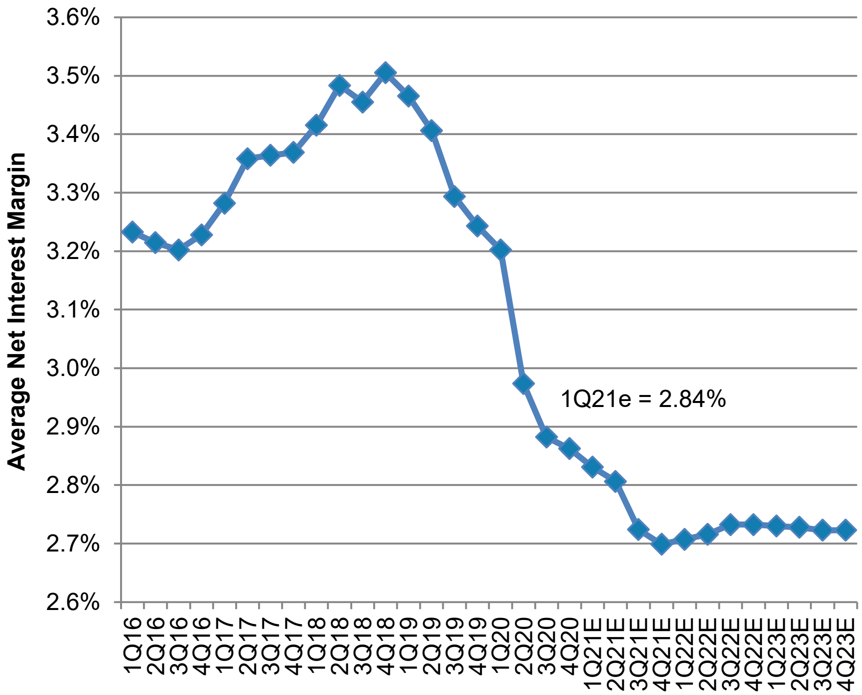
- A steeper yield curve is most positive for the longer-duration lenders, including the CRE-focused banks, NYCB, SBNY, and VLY, as well as the resi mortgage lenders, including FRC.
- However, with Fed funds still effectively at zero, and long-term rates still low by historical standards, very few banks are spared from NIM compression over the near-term.
- Long-duration loans, such as commercial real estate, tend to have their yields tied to index rates near the belly of the curve (i.e., the 5-yr constant maturity Treasury), rather than Prime or LIBOR, which is what most C&I lenders use.

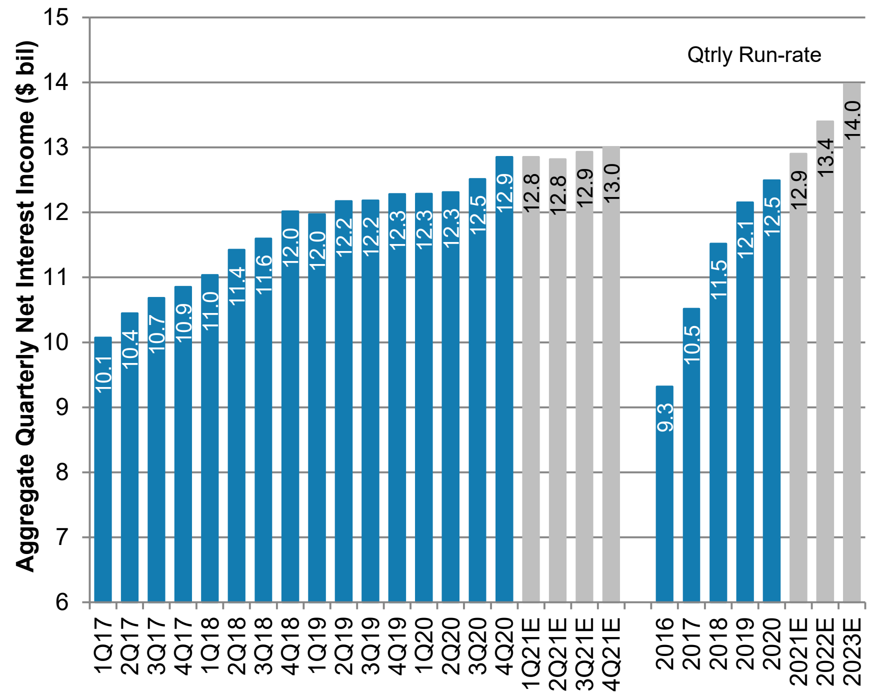
Source: Bloomberg
Note: Data as of 4/22/2021

Asset Sensitivity

Balance Sheet Growth and PPP to Offset NIM Compression in 2021

We expect net interest income to increase 4.0% in 2021, followed by a 3.1% increase in 2022. Strong deposit growth combined with another round of PPP drives higher asset balances, which more than offsets stable to slightly weaker core NIM. However, 2021 and 2022 also benefit from accelerated PPP fee amortization. NIM remains unusually depressed given deposit growth as banks are hesitant to invest their excess liquidity into low-yielding securities.





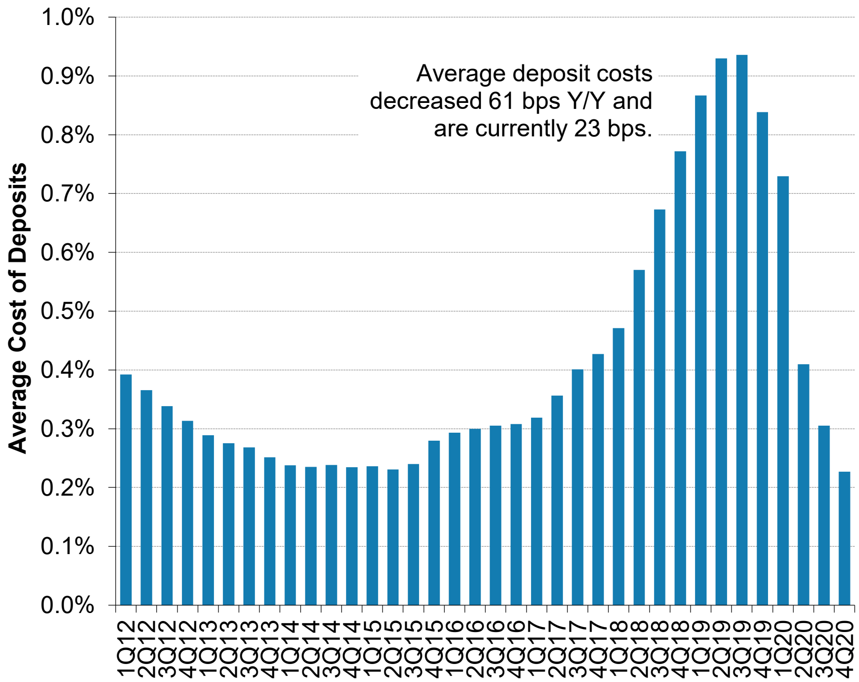
Note: NIM chart excludes the Net Finance Margin at CIT.
Source: Company data, Morgan Stanley Research estimates

Asset Sensitivity

Deposit Costs Might Be Nearing a Bottom

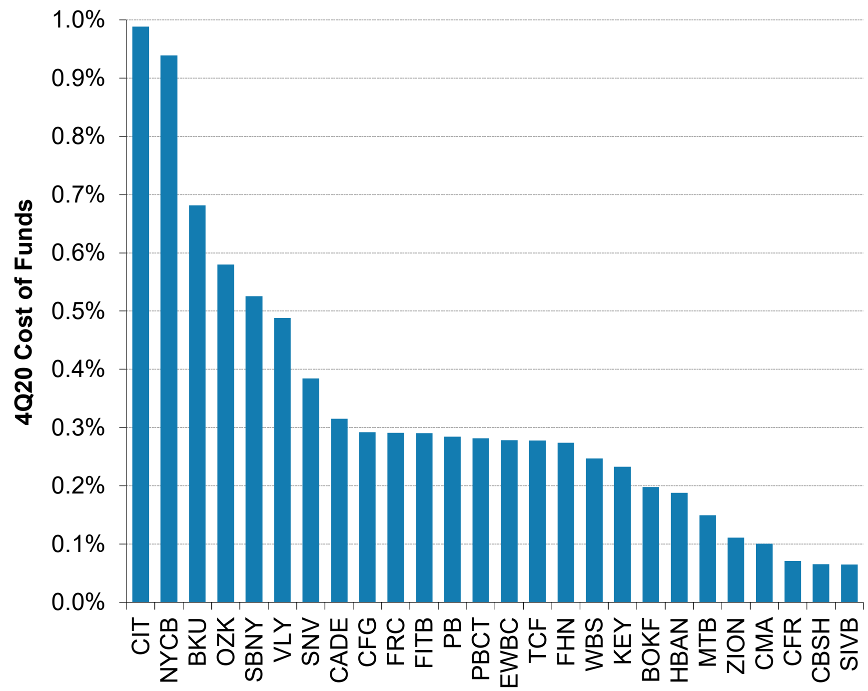
Deposit Costs are at Prior Cycle Lows

Deposit costs have reached the prior cycle lows as banks aggressively lowered funding costs to offset pressure on asset yields from a zero Fed funds rate. Average deposit costs across our coverage are now just 23 bps.



Cost of Funds by Bank Vary Widely

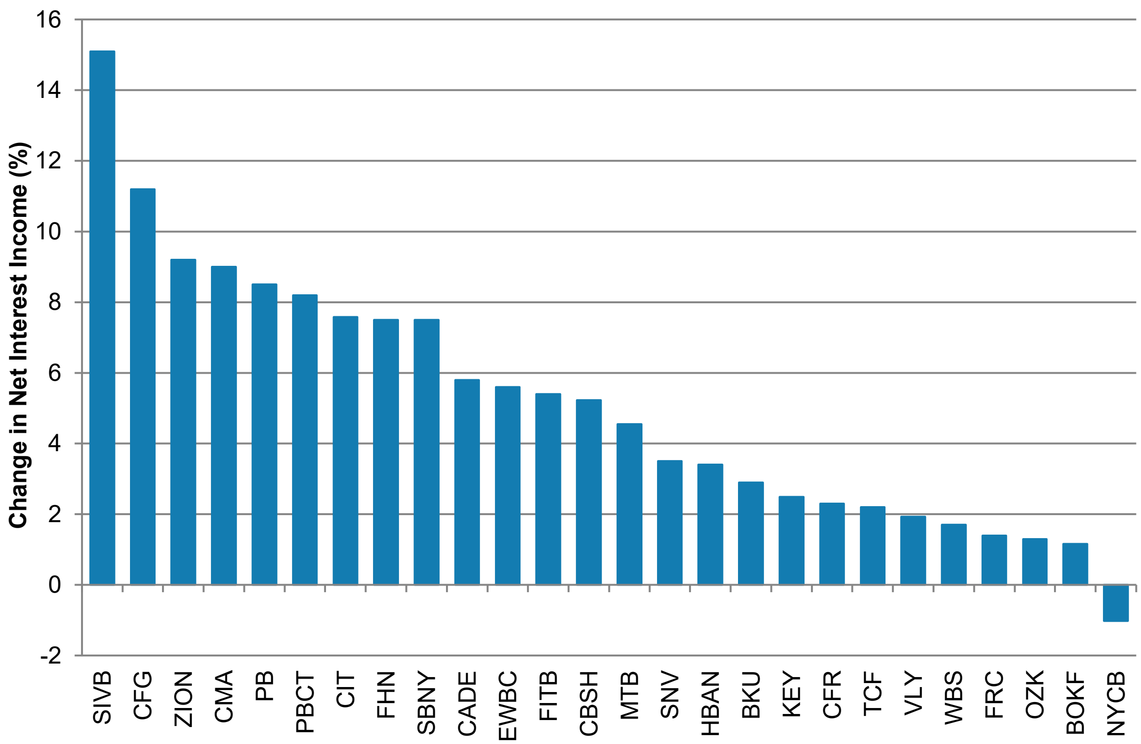
On an individual bank basis, funding costs vary widely, with those at the higher end typically relying more heavily on longer-duration FHLB borrowings and other wholesale funding sources.



Source: SNL Financial, Company data, Morgan Stanley Research

Most and Least Asset-Sensitive Midcap Banks

SIVB, CFG, ZION, CMA, and PB are among the most asset-sensitive midcap banks, per company disclosures, and could potentially see the greatest increase in net interest income once the Fed begins raising rates.



Asset Sensitivity by Bank

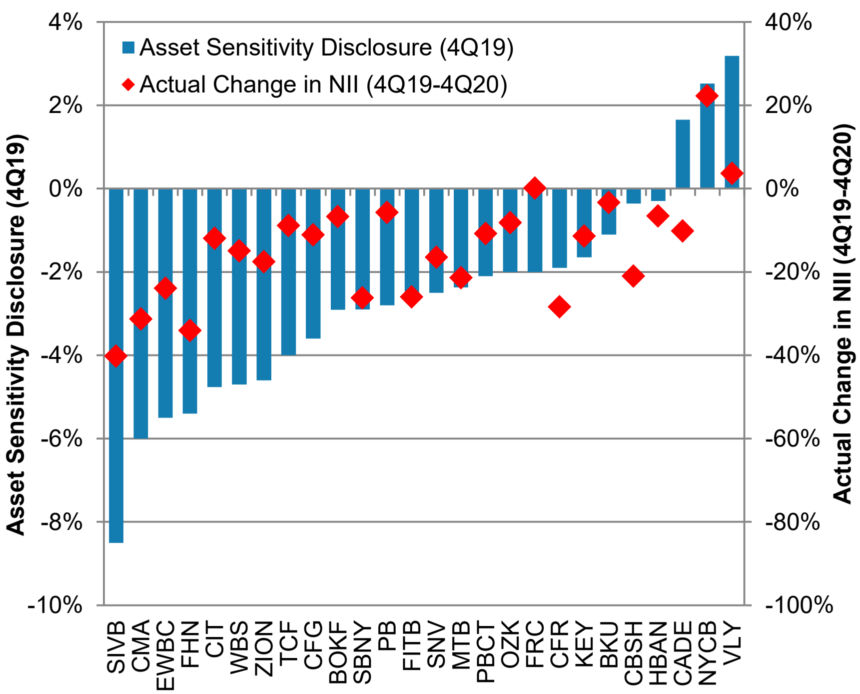
- The chart shows the change in net interest income over 12 months from a 100 bp increase in rates. However, in many cases, the actual change in bank net interest income may differ widely from these bank disclosures.
- We use the Fed funds futures curve in our models as the base case for the future path of interest rates.
- The futures curve implies the Fed could begin raising rates around the beginning of 2023.

Source: Company data, Morgan Stanley Research estimates Note: If the company does not disclose a shock scenario, we use its disclosed gradual increase scenario data. Where no +100 bps sensitivity disclosure is available, we use its sensitivity to +200 bps immediate/2. For MTB and CIT we calculate the percentage change in NII using the disclosed dollar amounts in their 10-K.

Asset Sensitivity Only Broadly Useful in Predicting Changes in NII

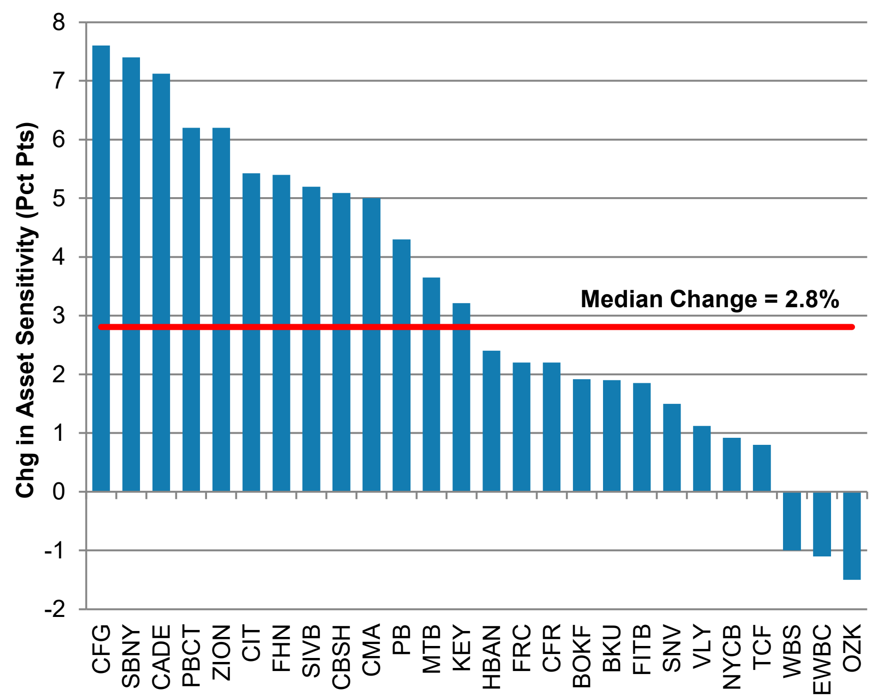
Challenges in Forecasting Net Interest Income

While there is a positive correlation between asset sensitivity disclosures and actual changes in NII (excl asset growth) over a long period (72% correlation from 4Q19-20, or 52% R-sq), the data is far less useful on a quarterly basis.



Asset Sensitivity Can Change Significantly

Over the last year, the median midcap bank's sensitivity to a 100-bp increase in interest rates has increased by 2.8%, with CFG and SBNY increasing the most (by 7.6 and 7.4 percentage points, respectively).



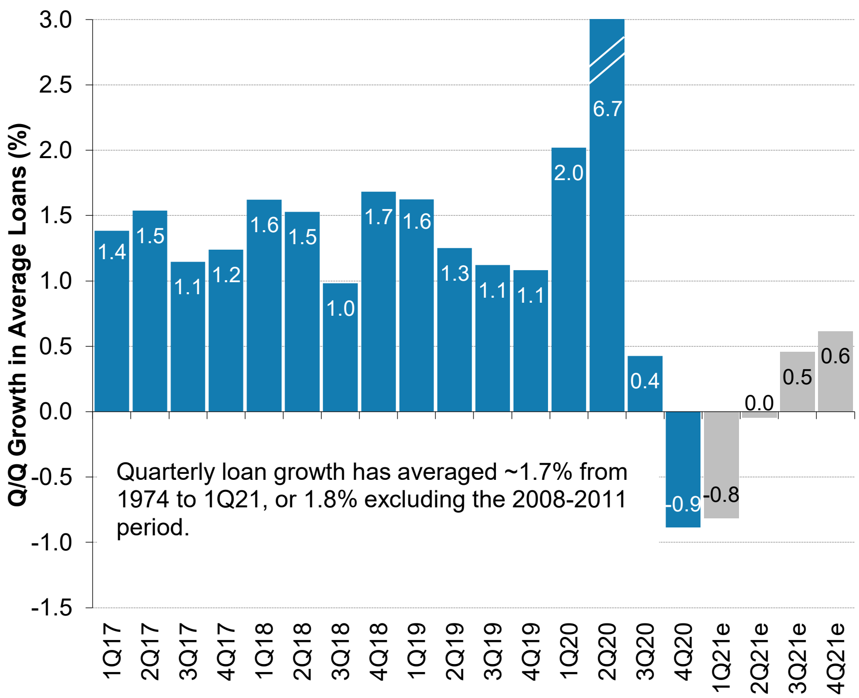
For disclosed asset sensitivities, where available, we use company-disclosed sensitivity to a interest rate "shock" or fast increase scenarios. If the company does not disclose a shock scenario, we use its disclosed gradual increase scenario data. Where no -100 bps sensitivity disclosure is available, we assume either the midpoint of its -50 bps and -200 bps sensitivity, or its sensitivity to -200 bps immediate/2. Source: Company data, Morgan Stanley Research

Balance Sheet

Loan Growth Will Likely Remain Under Pressure Near Term

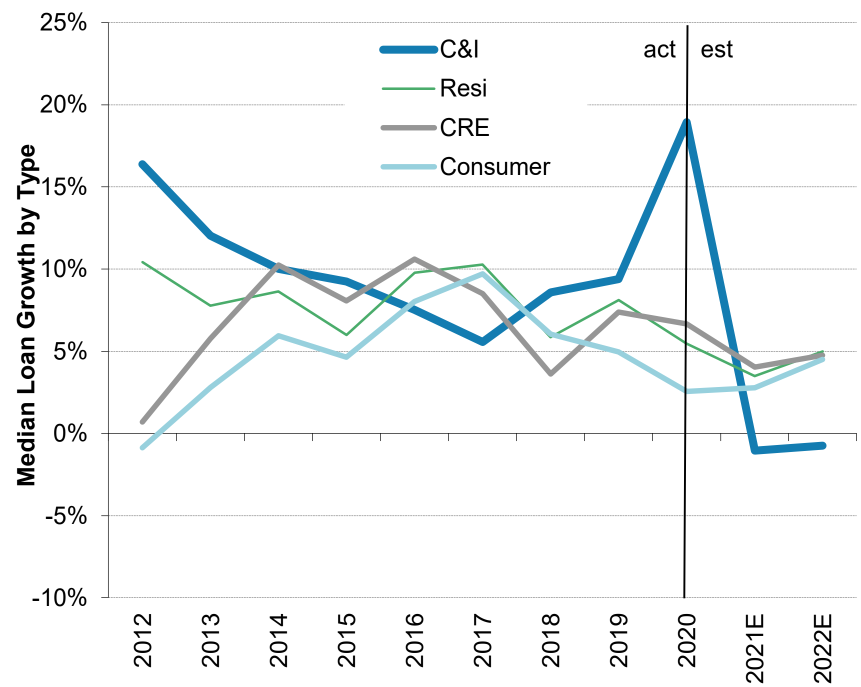
Weak Loan Growth in 1H21, but Stronger in 2H21

We expect average loan balances to decline in 1H21 as weak core loan demand and PPP forgiveness more than offset new PPP2 loans. Loan growth should begin to rebound in 2H21 as the economy continues to re-open.



Loan Growth by Category

C&I loan balances are seeing the greatest volatility given the impact of the PPP, corporate line draw-downs, and the uncertainty around the pandemic. We expect C&I to decline in 2021 due, in part, to PPP runoff.

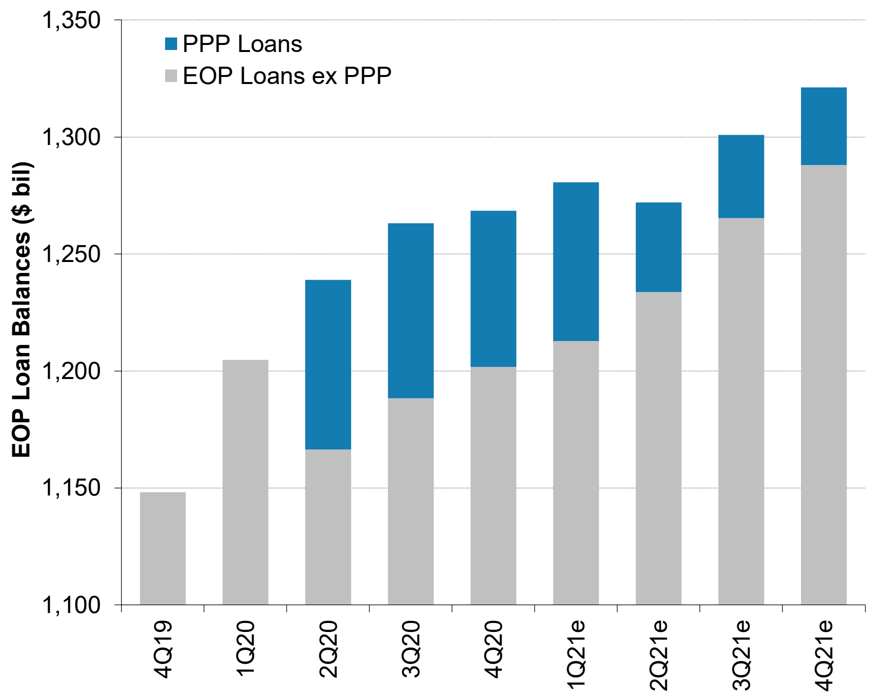


Asset Sensitivity

Core Loan Growth Should Improve in the Second Half of 2021

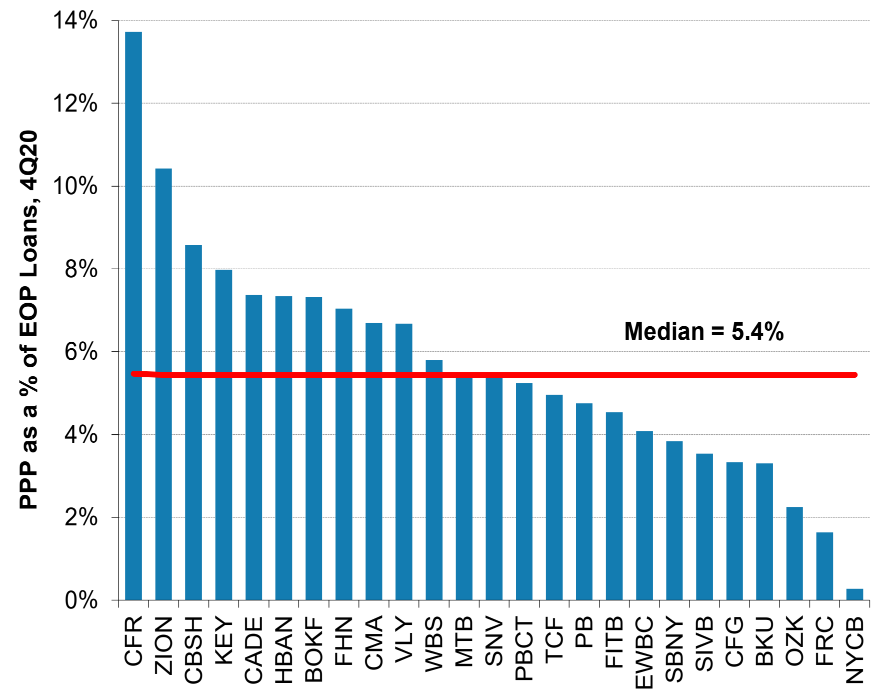
Loan Growth ex PPP

Excluding PPP loan balances, EOP loan growth at the midcap banks could be up 7.2% in aggregate during 2021 (due mostly to a few fast-growing banks), with the median bank growing core loans by 3.8%.



PPP Forgiveness Temporarily Boosts Bank NII

We expect roughly 80% of Round 1 PPP loans to be forgiven, largely in 1H21 with the accelerated fee amortization temporarily boosting banks' net interest income.



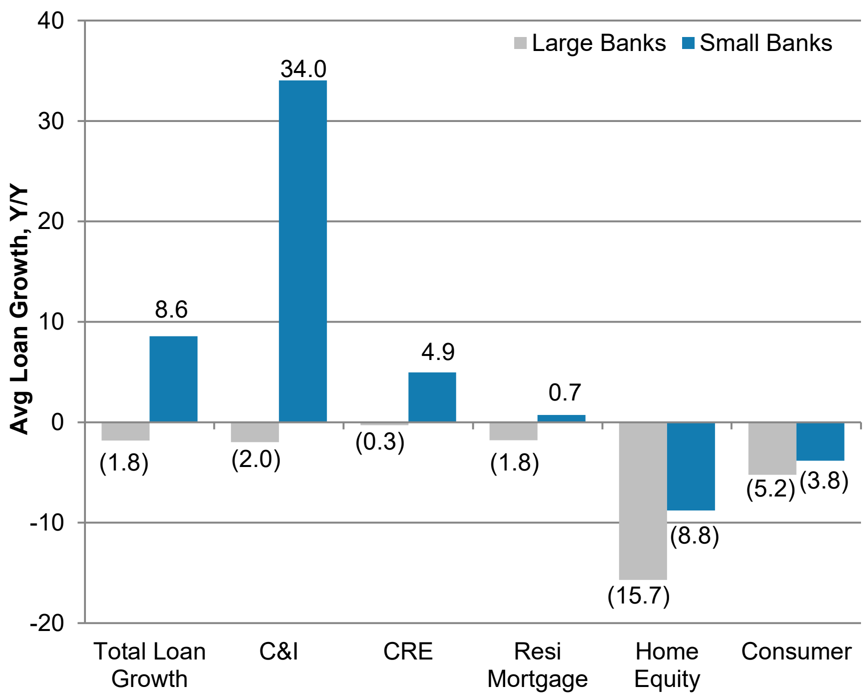
Source: Company data, Morgan Stanley Research estimates. Note: excludes CIT

Balance Sheet

Smaller Banks Are Growing Loans Faster than Larger Banks

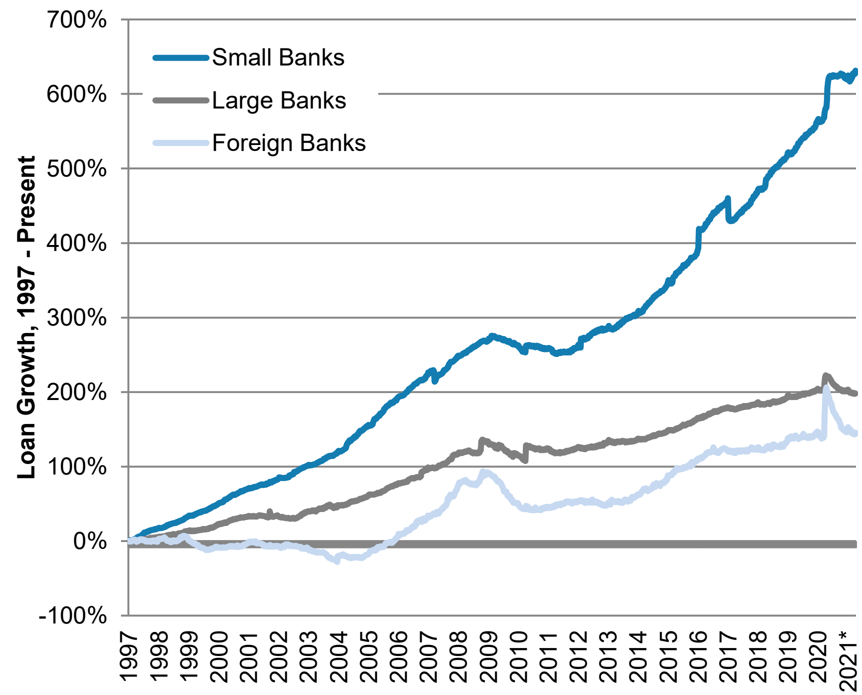
Dispersion in Loan Growth

Smaller banks (below the top 25 banks by asset size) have outgrown their larger counterparts (top 25) by a wide margin over the past year, across all loan categories – particularly PPP-driven C&I.



Small Banks Have Outgrown Large Banks

Over the past 20+ years, small banks have materially outgrown both the top 25 largest banks and foreign banks, growing loans by roughly three times that of their larger peers.



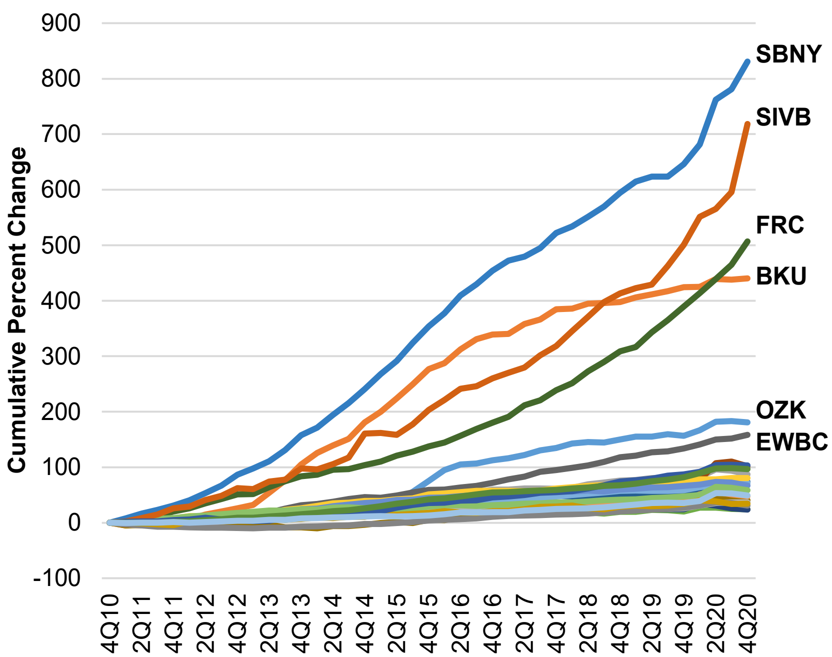
*2021 is as of 3/31/2021 Large bank data includes the largest 25 domestically chartered commercial banks by asset size. Small bank data includes all domestically chartered commercial banks not included in the large bank data. Foreign bank data includes U.S. branches and agencies of foreign banks as well as Edge Act and agreement corporations.
Source: Federal Reserve H.8. data

Balance Sheet

Organic Loan Growth – Fast Growth Banks vs. Everyone Else

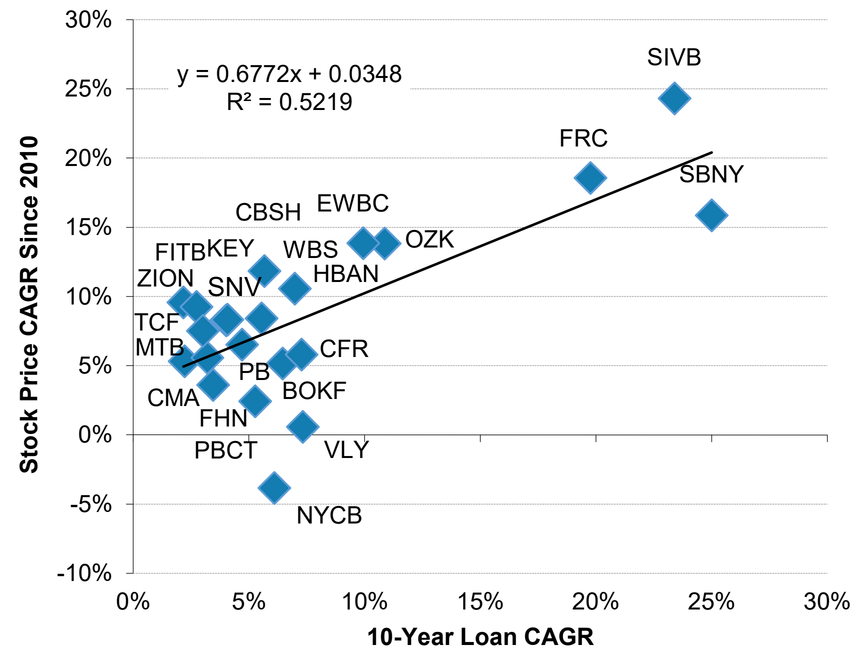
Only a Few Banks Meaningfully Outgrow Peers

There is a huge divergence between the fast growing banks (SBNY, SIVB, and FRC), and everyone else. SBNY's loan growth over the last 10 years is 831%, vs a median of just 69% for the banks outside of the top three fastest growers.



Organic Loan Growth Drives Stock Performance

The fastest growing banks (SBNY, SIVB, and FRC) have outperformed peers by a wide margin over the past decade, returning 16-24% annually versus 8.3% for peers.



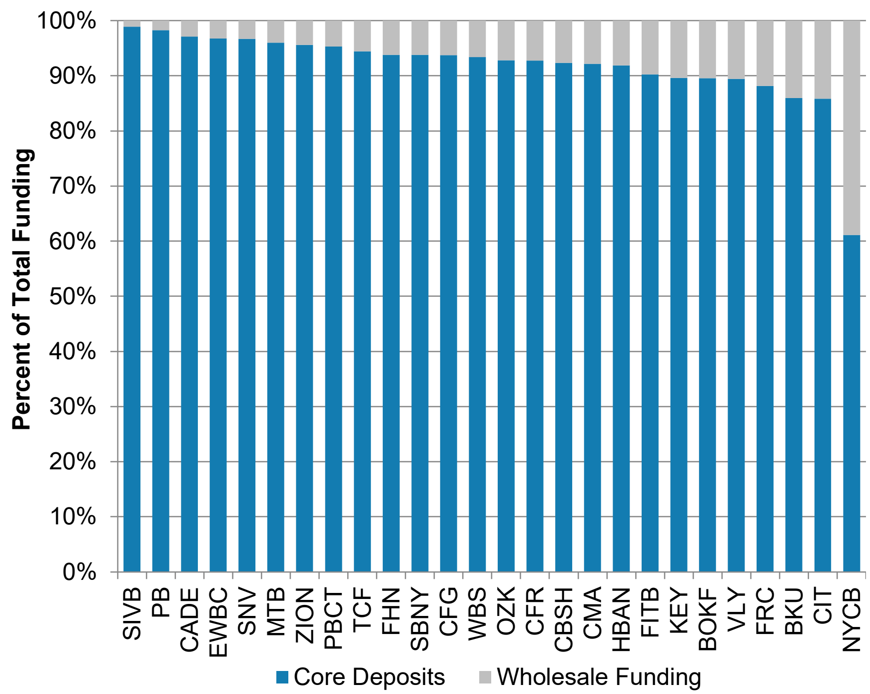
Note: Exhibits exclude the impact of M&A.
Source: Company data, SNL Financial, Morgan Stanley Research

Balance Sheet

Breakdown of Core Deposits vs. Wholesale Funding, by Bank

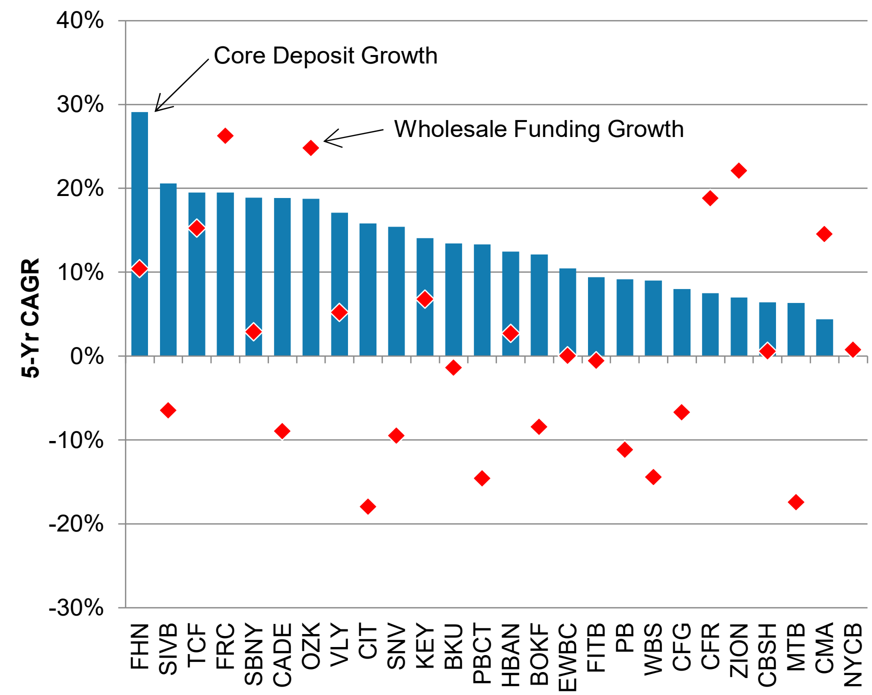
Core Deposits vs. Wholesale Funding

Core deposits accounted for 93% of total funding at the end of 2020, with the remainder from wholesale funding sources such as FHLB borrowings, and short- and long-term debt.



Banks Growing Percentage of Core Deposits

Core deposit growth over the last five years, ending in 2020, averaged 13% annually. This is in excess of banks' 1% growth in wholesale funding over the same period, resulting in improved funding profiles.



Note: Right chart includes the impact of acquisitions

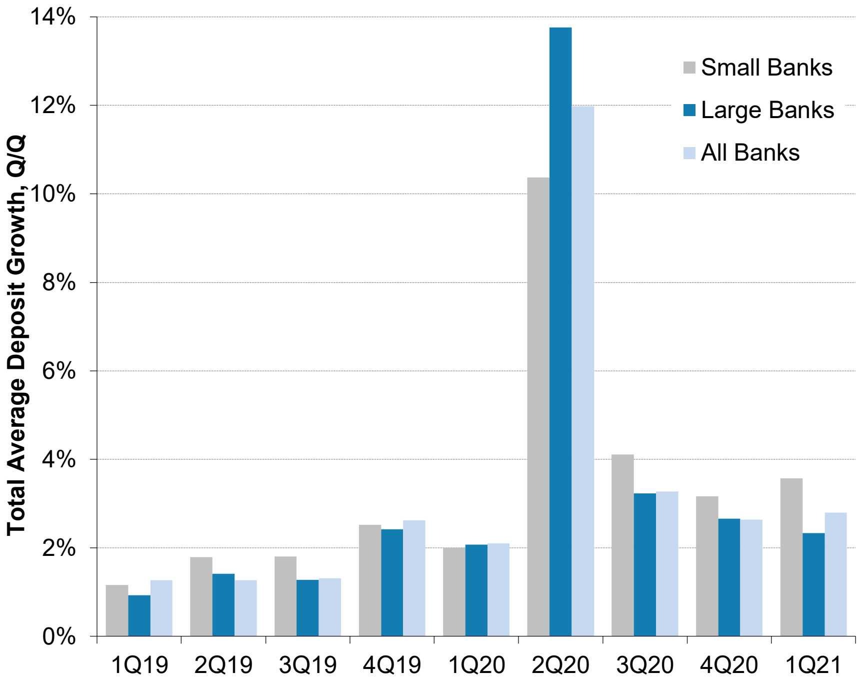
Source: SNL Financial, Morgan Stanley Research

Asset Sensitivity

Stimulus-Driven Deposit Growth

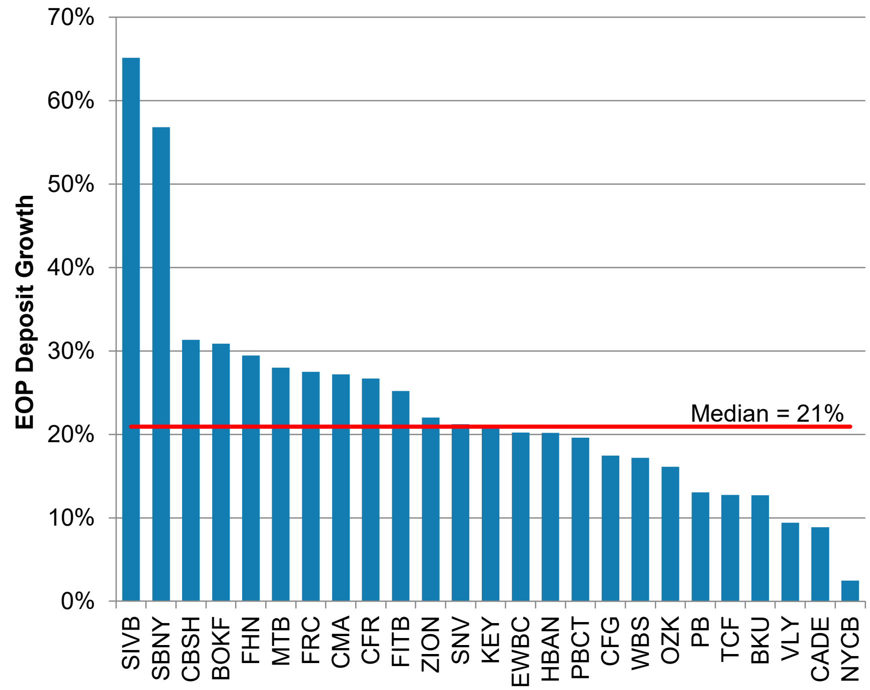
Stunning Deposit Growth in 2020

The banking industry grew deposits by an average of 20% in 2020 driven largely by the federal stimulus programs. The question is how long these deposits stay on banks' balance sheets.



Midcap Bank Deposits Were Up 21% in 2020

Deposit growth was exceptionally robust in 2020. The strongest organic growth came from SIVB (up 65%) and SBNY (57%). NYCB, however, did not benefit from this growth, up just 2%.



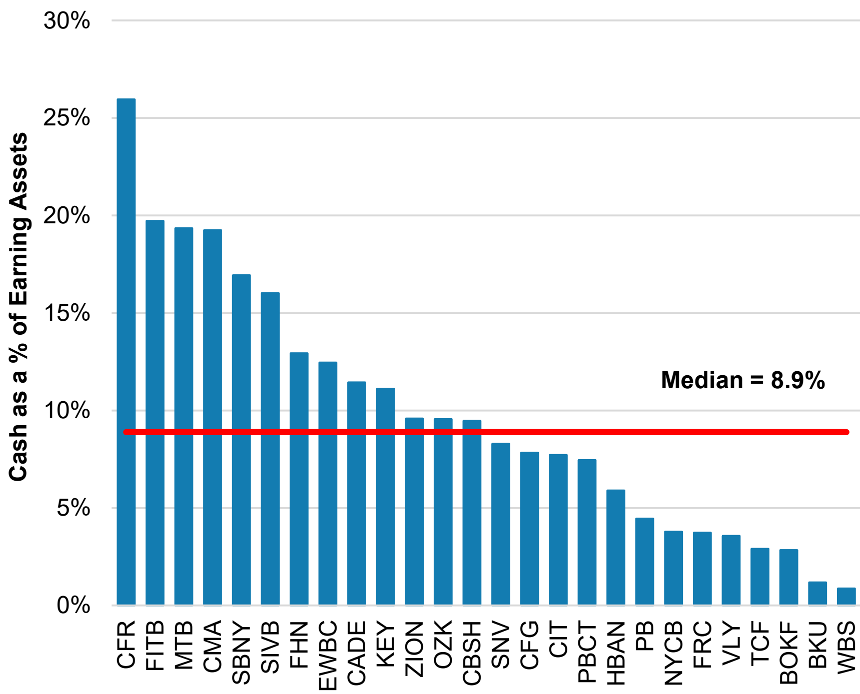
Note: In the right chart, we exclude the impact of acquisitions
Source: Federal Reserve, Company data, Morgan Stanley Research estimates

Asset Sensitivity

Upside from Investing Excess Cash at Higher Rates

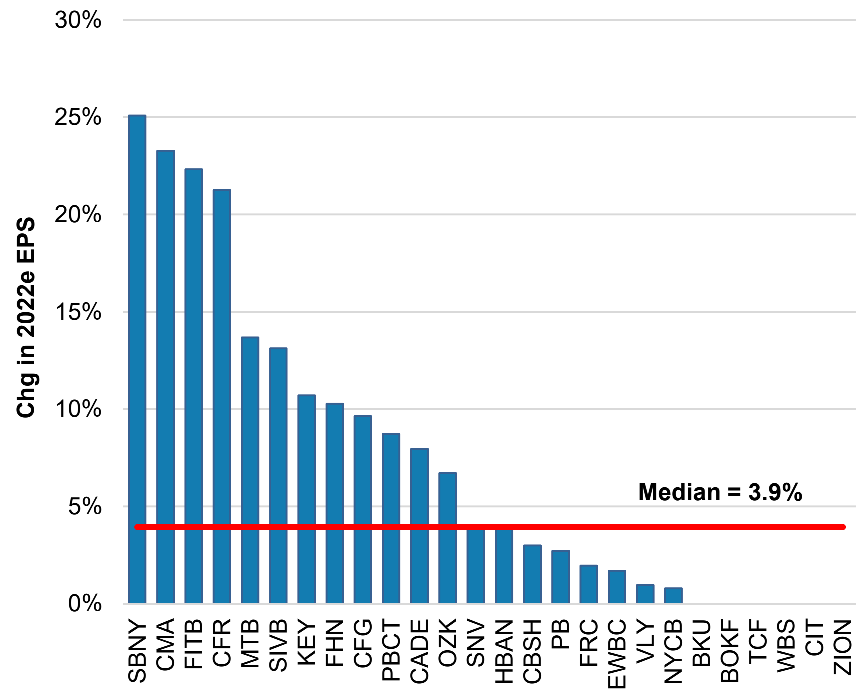
Many Banks are Sitting on Large Cash Piles

Banks' cash balances have nearly tripled over the last year to 8.9% of earning assets. SBNY, FITB, and MTB have the most *excess* cash available for reinvestment, at 16%, 15%, and 14% of their earning asset balances, respectively.



EPS Upside from Investing Excess Cash

Banks that could see the greatest increase in EPS from investing their cash include SBNY, CMA, FITB, and CFR, each with hypothetical increases in their annual EPS of 20-25%, versus a group median of 3.9%.

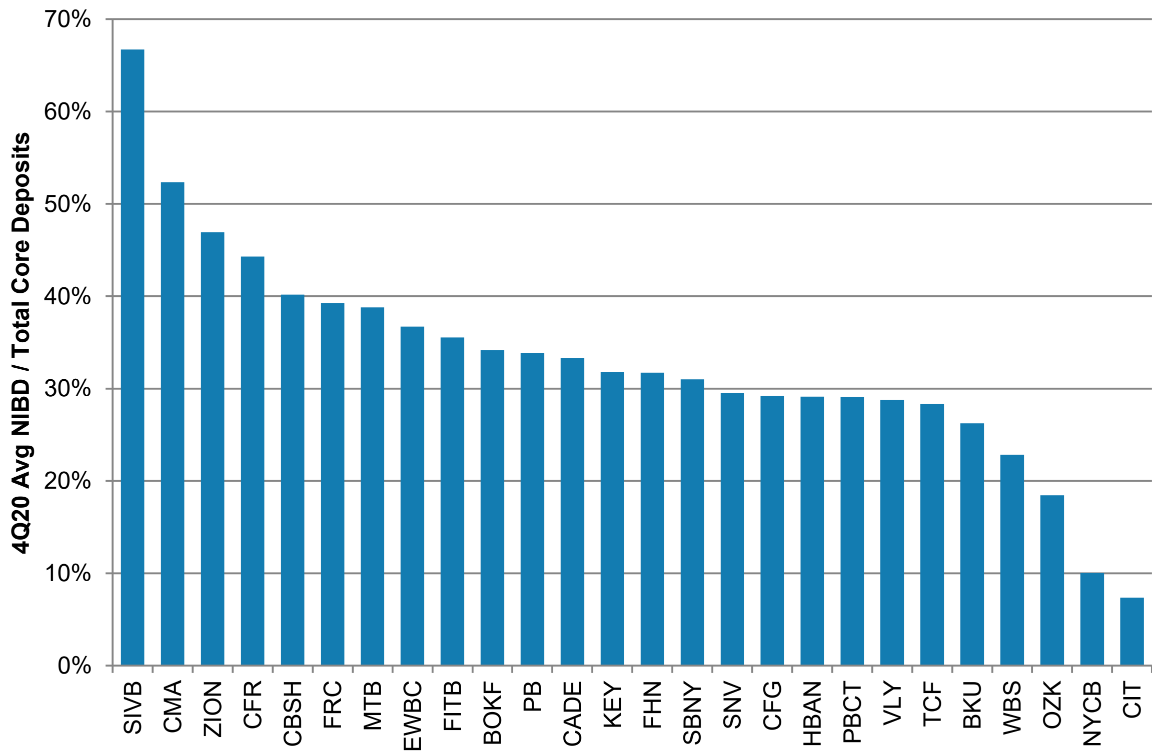


Source: SNL Financial, Company data, Morgan Stanley Research estimates

Balance Sheet

Noninterest Bearing Deposits

Noninterest bearing deposits (NIBD) are the most desirable type of funding. Banks with the greatest percentage of NIBD to core deposits include SIVB, CMA, ZION, and CFR.



Noninterest Bearing Deposits

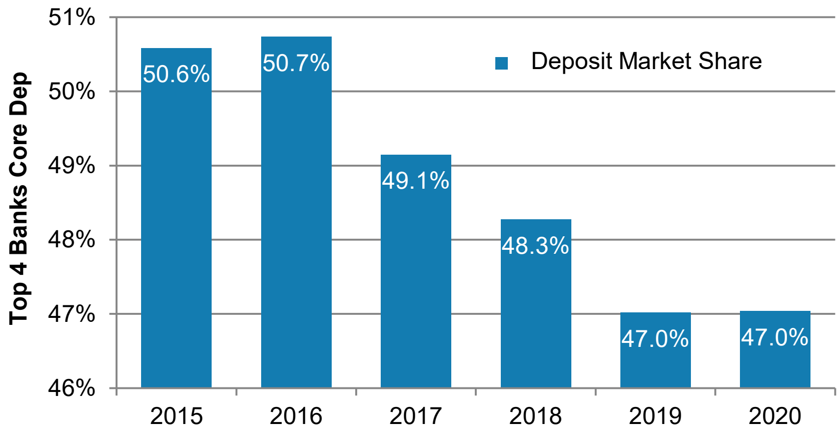
- Commercial customers use these deposits to “pay” for treasury and cash management services. Banks credit customers through an earnings credit rate (ECR).
- Not surprisingly, banks that focus more heavily on commercial customers, like SIVB, CMA, ZION, and CFR tend to have the highest concentrations of NIBD to total core deposits at 40% or more.
- Banks grew their EOP NIBD by a remarkable 43% in 2020, driven by low interest rates and government programs like PPP and stimulus checks.
- The banks that saw the largest organic inflows of NIBD over the last year include BKU and SIVB with inflows of 63% each, while PB and NYCB grew their balances by just 18% and 27%, respectively.

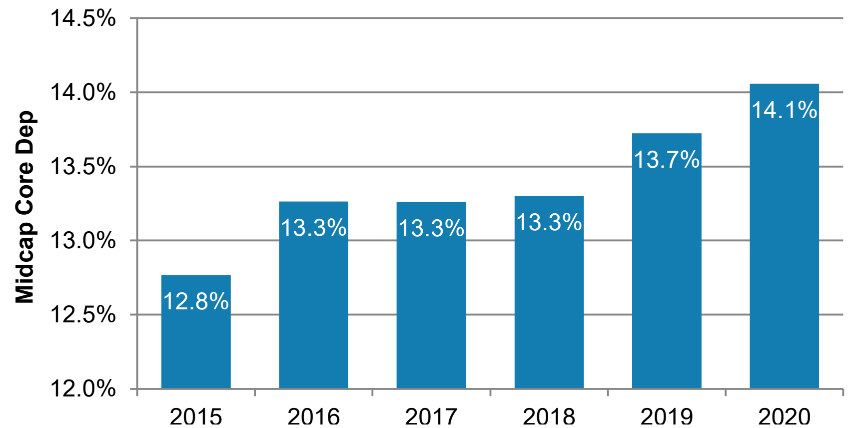
Source: Company data, Morgan Stanley Research

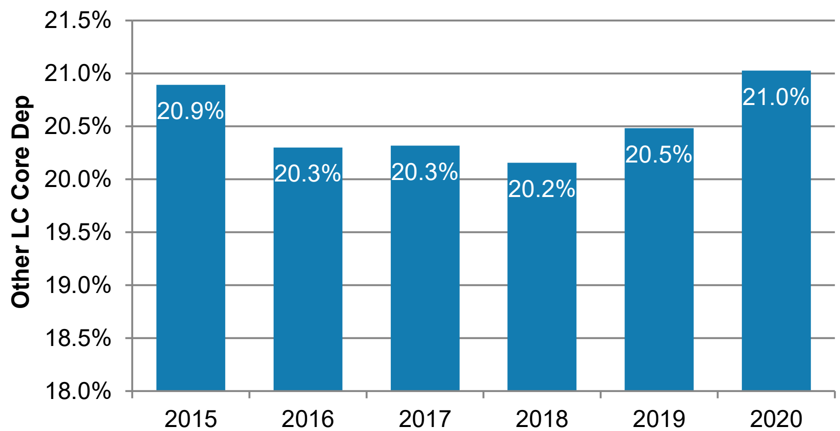
Balance Sheet

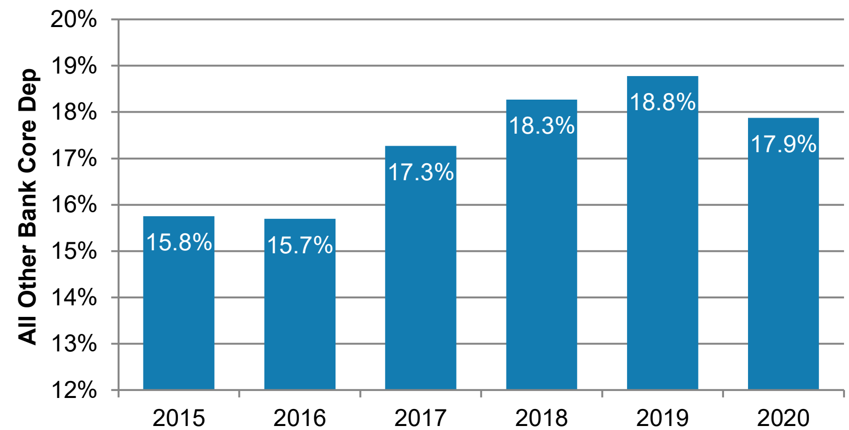
Smaller Banks Gaining Deposit Market Share

Despite conventional wisdom, smaller banks are gaining the most core deposit market share (up 213 bps over the last five years), among all publicly traded banks. The four largest banks have lost the most share (down 355 bps), while the Midcap Banks have gained 129 bps of market share, currently at 14.1%. *Why?* Because smaller banks are outgrowing larger banks in terms of loan growth.









Source: SNL Financial, Morgan Stanley Research

Balance Sheet

Midcap Bank Loan Mix Varies Widely by Bank

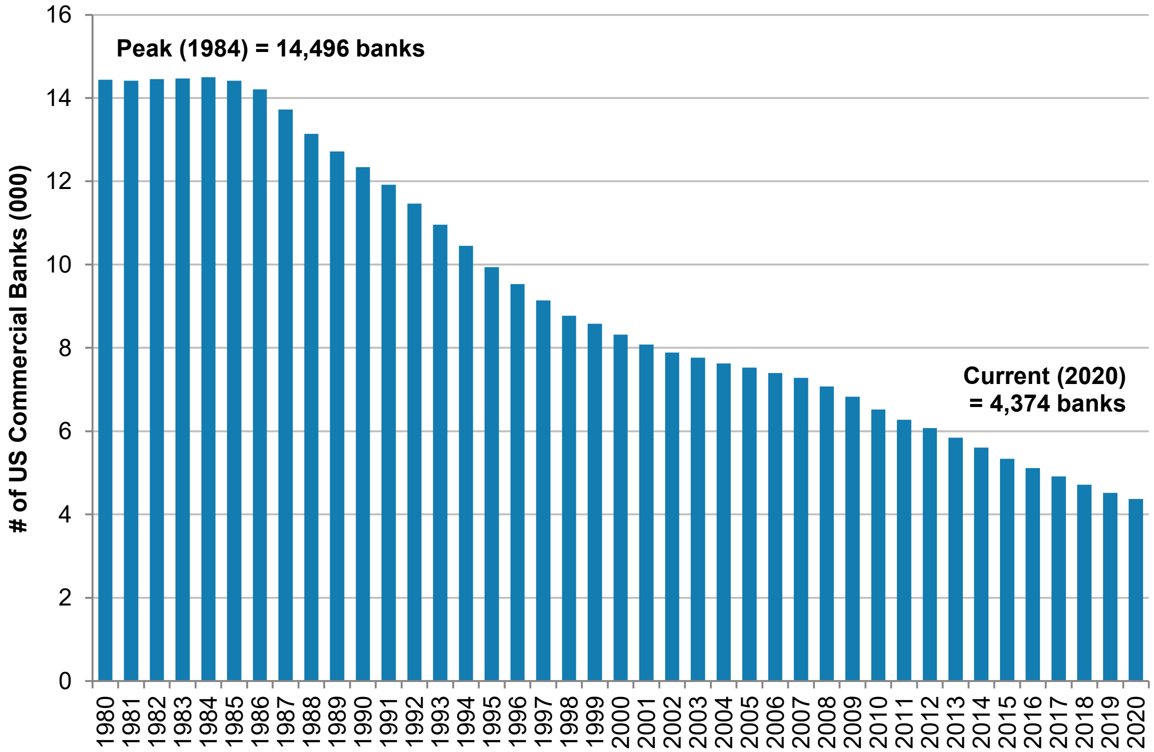
C&I		CRE*		Multi-Family		Total Construction		Resi Mtg		Home Equity		Auto		Credit Card / Other Cons	
SIVB	88%	VLY	36%	NYCB	75%	OZK	42%	FRC	54%	CFG	9%	HBAN	16%	CFG	14%
CMA	66%	SNV	35%	SBNY	31%	MTB	10%	BKU	27%	HBAN	9%	FITB	11%	OZK	12%
KEY	56%	EWBC	30%	VLY	16%	CADE	10%	WBS	24%	TCF	9%	CFG	8%	CBSH	9%
CIT	54%	CFR	29%	FRC	12%	PB	10%	EWBC	23%	WBS	7%	CBSH	5%	MTB	9%
CADE	50%	ZION	28%	PBCT	8%	CFR	9%	PB	22%	CFR	6%	KEY	5%	HBAN	7%
CFR	49%	BOKF	28%	EWBC	7%	CMA	8%	PBCT	20%	KEY	6%	MTB	4%	KEY	6%
BOKF	48%	BKU	28%	CIT	7%	SNV	7%	CFG	19%	ZION	5%	VLY	4%	FITB	5%
FITB	48%	PB	26%	BKU	7%	CBSH	6%	TCF	19%	FHN	5%	TCF	1%	FRC	5%
FHN	45%	PBCT	25%	PB	6%	ZION	6%	CBSH	18%	FITB	4%	BOKF	0%	SNV	4%
TCF	41%	FHN	24%	TCF	6%	BOKF	6%	HBAN	18%	PBCT	4%	ZION	0%	VLY	3%
CBSH	40%	SBNY	24%	BOKF	5%	VLY	5%	FITB	18%	MTB	4%	PB	0%	CFR	3%
PBCT	40%	MTB	23%	MTB	5%	FITB	5%	CIT	17%	SNV	4%	OZK	0%	TCF	2%
SBNY	40%	OZK	23%	WBS	4%	FHN	5%	CADE	17%	EWBC	4%	FHN	0%	BOKF	2%
WBS	39%	WBS	22%	OZK	4%	CIT	4%	FHN	17%	CMA	3%	CFR	0%	CMA	1%
HBAN	39%	TCF	19%	KEY	4%	TCF	4%	MTB	17%	CADE	3%	CADE	0%	FHN	1%
BKU	38%	CIT	17%	ZION	4%	CFG	4%	SNV	16%	CBSH	2%	PBCT	0%	ZION	1%
ZION	36%	CBSH	16%	SNV	3%	PBCT	3%	ZION	14%	FRC	2%	SNV	0%	SIVB	1%
CFG	35%	CADE	16%	FHN	3%	SBNY	3%	VLY	14%	BOKF	2%	CMA	0%	CADE	1%
EWBC	35%	NYCB	16%	CADE	3%	FRC	3%	KEY	13%	VLY	2%	FRC	0%	WBS	1%
PB	34%	CMA	15%	CFR	2%	WBS	2%	BOKF	9%	PB	1%	EWBC	0%	PB	1%
SNV	31%	HBAN	10%	CMA	2%	KEY	2%	SIVB	8%	OZK	1%	NYCB	0%	SBNY	0%
MTB	28%	CFG	10%	CBSH	2%	EWBC	2%	OZK	4%	CIT	0%	WBS	0%	PBCT	0%
VLY	22%	KEY	9%	HBAN	2%	HBAN	1%	CMA	4%	SBNY	0%	CIT	0%	EWBC	0%
FRC	17%	FITB	8%	FITB	1%	BKU	1%	CFR	2%	SIVB	0%	SBNY	0%	BKU	0%
OZK	13%	FRC	7%	CFG	1%	NYCB	0%	SBNY	1%	NYCB	0%	BKU	0%	CIT	0%
NYCB	8%	SIVB	2%	SIVB	0%	SIVB	0%	NYCB	1%	BKU	0%	SIVB	0%	NYCB	0%
Average	**40%**		**20%**		**8%**		**6%**		**16%**		**4%**		**2%**		**3%**

Note: Data as of 4Q20; *CRE loans exclude multi-family and construction loans, which are listed separately
Source: SNL Financial, Morgan Stanley Research

M&A / Expenses

Outlook Is Improving for a Pickup in Bank M&A

The number of commercial banks has steadily declined since 1984, with total institutions down 40% since the start of the GFC. The pandemic has slowed deal activity, but we expect M&A to accelerate as a vaccine becomes more widely available and banks have a clearer picture around the outlook for credit losses.



Drivers of Bank M&A

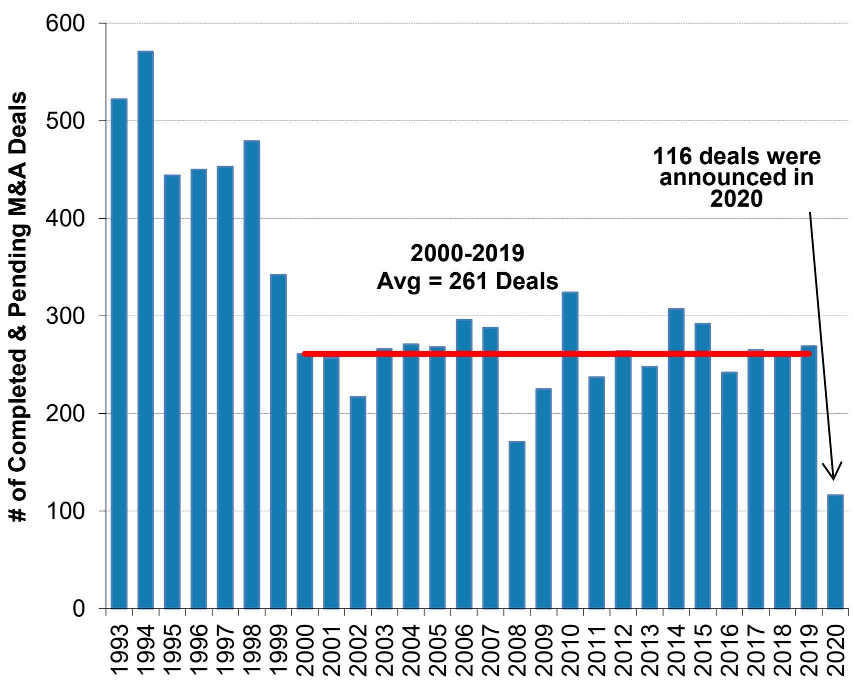
- **There have been 120 transactions over the past year** (through mid-April), which is well below prior years due to the pandemic as banks were hesitant to make acquisitions when credit quality was uncertain.
- By contrast, the average number of deals done from 2000 to 2019 was 261.
- The regulatory environment, as it relates to bank M&A, has eased for the larger regional banks, which bodes well for potential bank M&A within our midcap bank (and larger) coverage universe.

Source: FDIC, Morgan Stanley Research

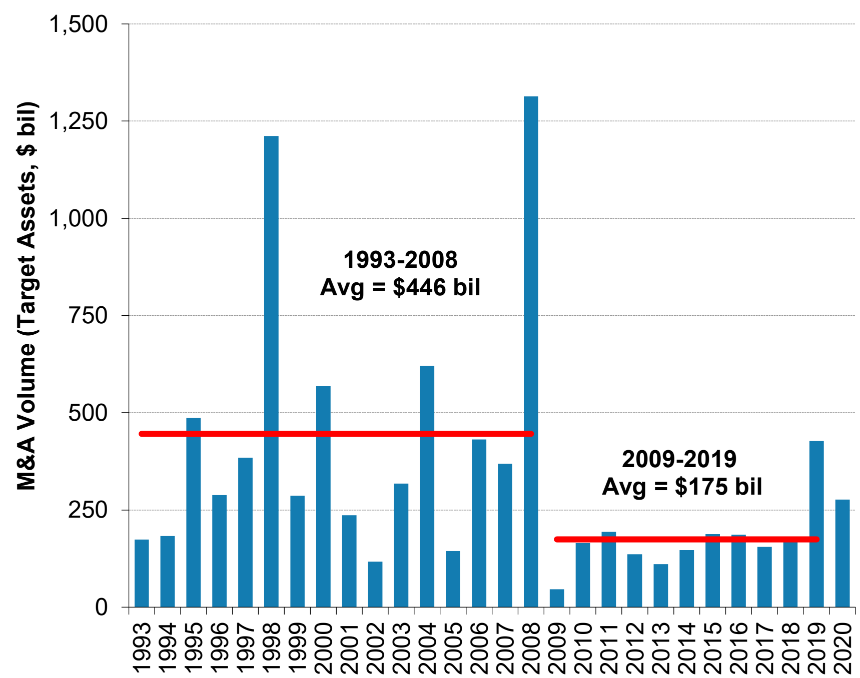
M&A: 2020 Deal Volume Was Well Below Prior Years

With only 116 deals announced in 2020, M&A deal volume was well below the 2000-19 average of 261 deals. Bank managements were concerned with acquiring another bank's loan portfolio given the uncertainty around credit during the pandemic. However, the worst is likely behind us and we now expect bank M&A to pick up now that banks have more clarity around the economic outlook given the vaccine distribution.

Number of M&A Deals by Year



Annual M&A Volume by Total Target Assets



Source: SNL Financial, Morgan Stanley Research.

M&A: Five Reasons that Support a Potential Increase in Bank M&A

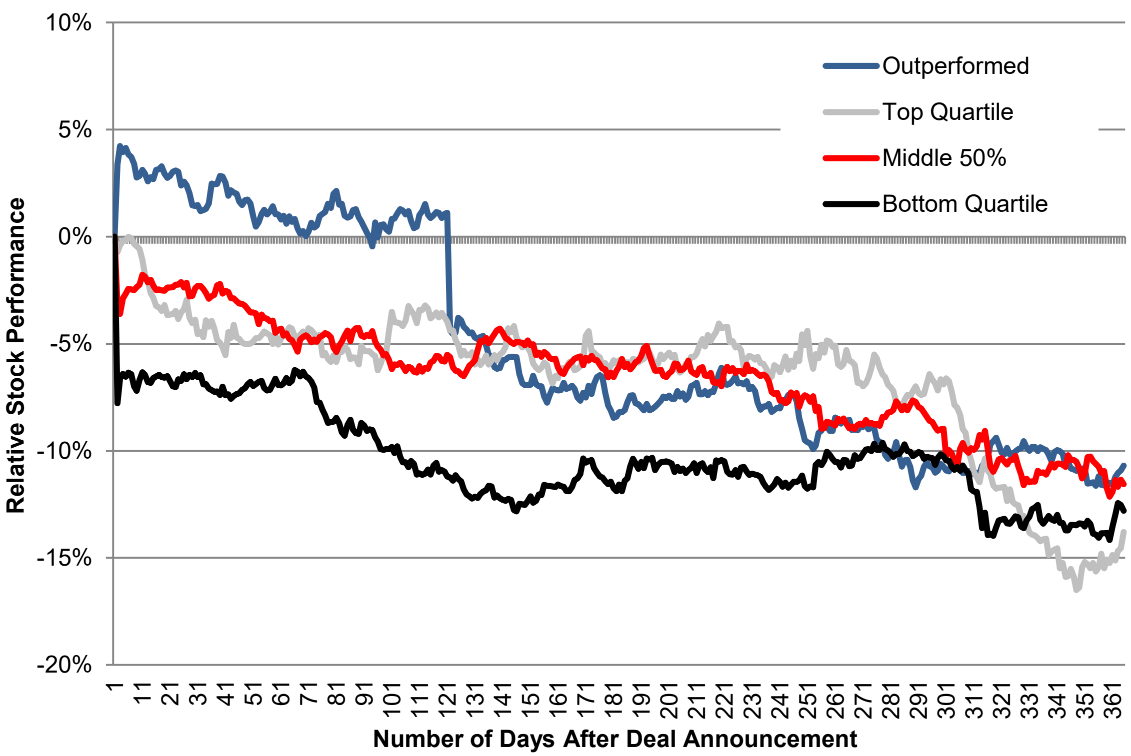
With visibility improving on how the pandemic could end, we see several reasons why bank M&A could accelerate in the coming quarters.

1. Reduce Expenses	Bank M&A allows banks to cut a meaningful amount of expenses from the combined entity, particularly back office and branches/personnel. Our prior work suggests that most buyers expect to remove 20-30% of a seller's expense base in an acquisition, although some can reach 40-50%.
2. Rising Technology Costs	Banks are using M&A to get more value out of their technology budget, by spreading technology expenses across a larger organization. Combining the best of each bank's technological capabilities also allows them to enhance their digital offerings and improve efficiency and customer service.
3. Interest Rates	While it could be some time before we see an increase in Fed funds (the future curves suggests the first hike in early 2023), banks need to consider how they are positioned for a rising rate environment. Liability sensitive banks, or those with weaker core funding profiles, may chose to seek a partner in order to avoid earnings compression in a rising rate environment.
4. Opportunities for Revenue Growth	Revenue opportunities exist as banks get access to new products and markets. This can come from access to faster-growth markets and/or an improved product set (or capabilities) with which to cross-sell to the combined customer base.
5. Allows Rapid Capital Return	While banks seem to have a reasonable amount of flexibility to return capital, M&A still provides an avenue to utilize excess capital beyond what they can achieve through share buybacks, driving higher EPS, as the buyer adds leverage, and an improved ROE. The downside, however, can be TBV dilution.

M&A / Expenses

Does Bank M&A Really Work for Shareholders?

We expect bank M&A to accelerate in 2021. However, our analysis shows that bank M&A tends to be a losing strategy for shareholders of the acquiring bank.



Buyer Beware

- Bank acquirers tend to underperform their peers, both short and long term. 75% of the banks in our analysis underperformed the broader bank index on the first day after an M&A announcement by an average of 2.0%.
- More important, though, is that the acquiring banks tended to continue to underperform long after the initial stock price reaction, underperforming by roughly 9.5 pct points, on average, over the next year excluding the first day move (or 12.1 pct points including the day of deal announcement).
- There is very little difference in the long-term underperformance between deals that are initially viewed positively by the market (underperforming by 12.1% on average after the first day price change) versus those that were viewed negatively (-8.5%), or even between different levels of stated EPS accretion or tangible book value dilution.

Note: The "Outperformed" bucket represents the bank acquirers that outperformed on the day of deal announcement, with the underperforming banks ranked by performance across the remaining "Top Quartile", "Middle 50%" and "Bottom Quartile". Source: Thomson Reuters, Company data, Morgan Stanley Research

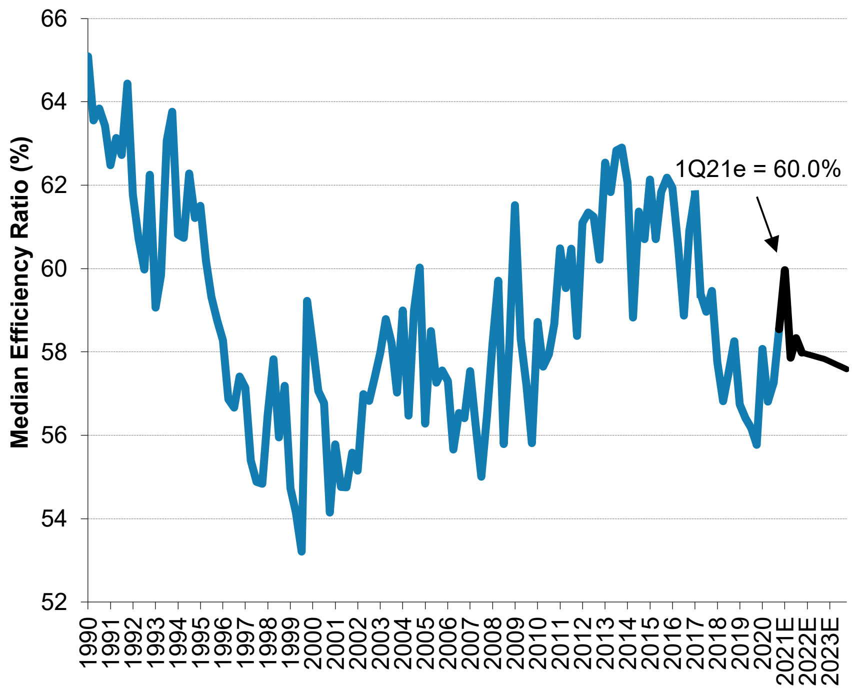
May 2021

M&A / Expenses

Broadly Stable Efficiency Ratios

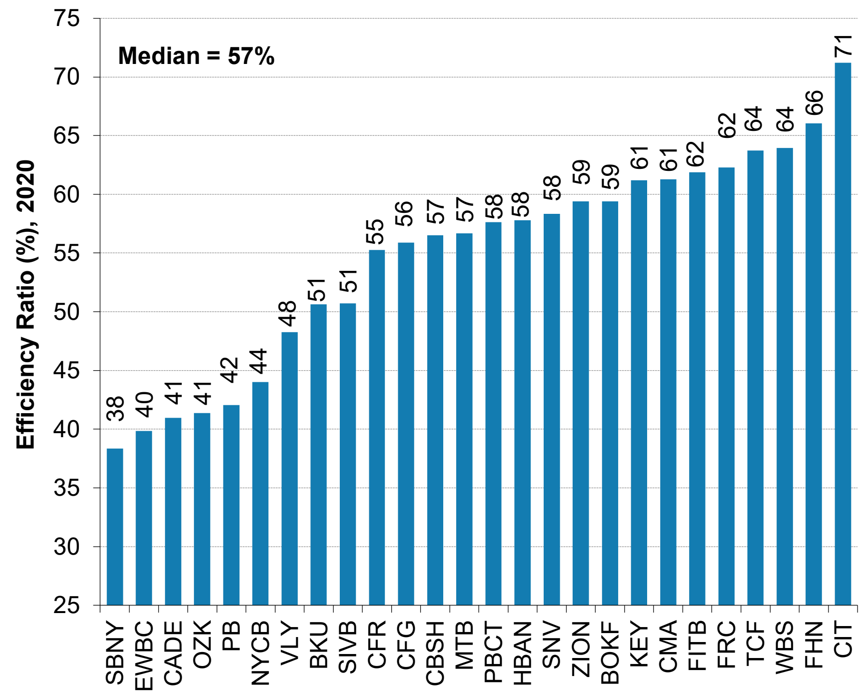
Historical Efficiency Ratios

Banks have been very aggressive at trimming expenses to offset the impact of low interest rates during the pandemic, which should help put them in a good position once rates begin to rise in late 2022/early 2023.



Current Efficiency Ratios

Most banks operate with an efficiency ratio of around 50-60%. However, the positive standouts are SBNY and EWBC, with efficiency ratios of 38% and 40%, respectively.



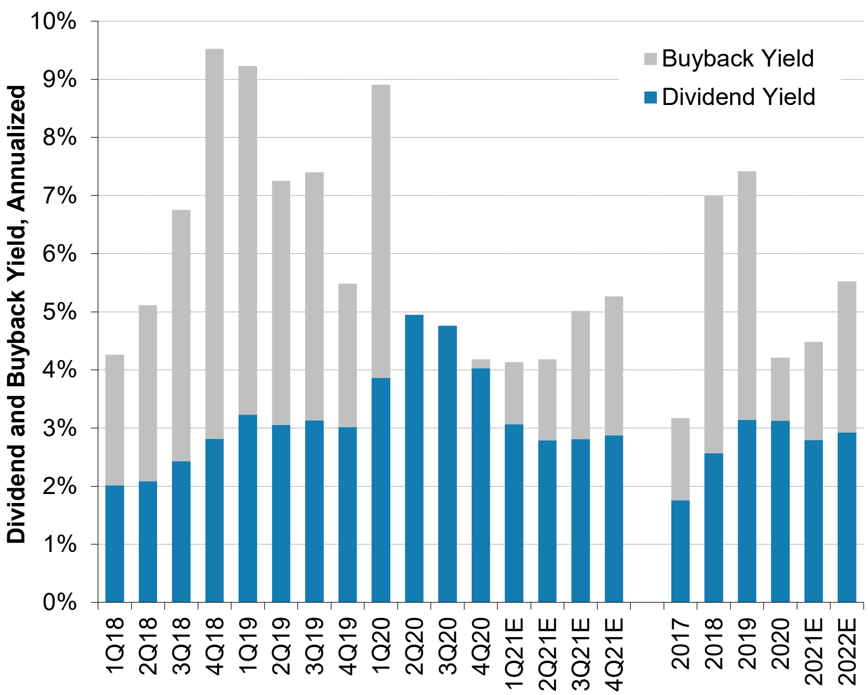
Note: Historical efficiency ratios based on SNL calculation = noninterest expenses / total revenues, excluding OREO expense, amortization of intangibles, goodwill impairments, security gains, and nonrecurring items. Current efficiency ratios based on Morgan Stanley calculations = noninterest expenses/total revenues, excluding extraordinary items.
Source: SNL Financial, Company data, Morgan Stanley Research estimates

Capital Return

Capital Return Driven by Dividends and Buybacks

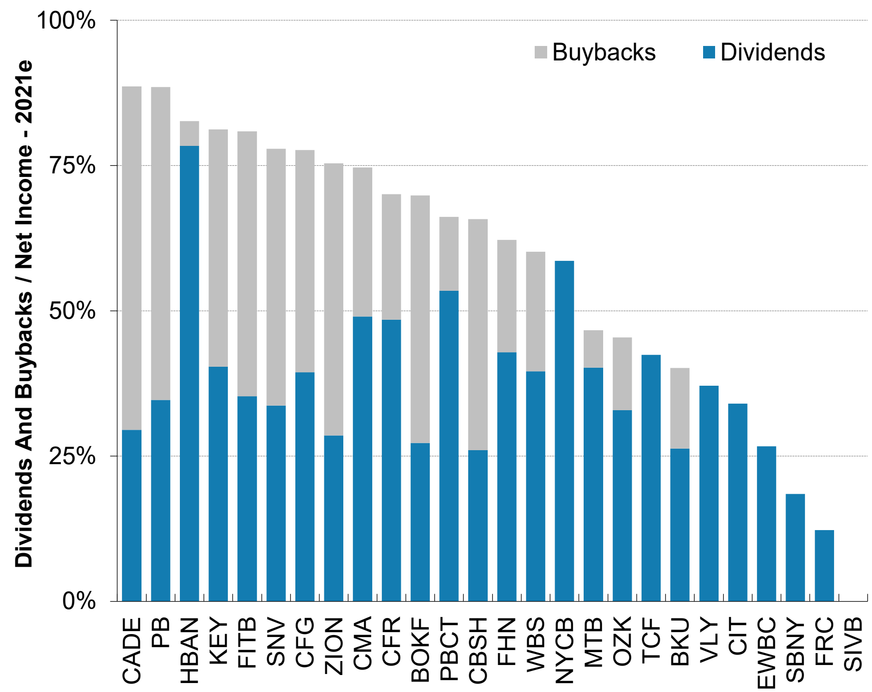
Expect Buybacks to Resume in 2021

Almost all banks stopped buying back shares in 2020 given the pandemic. But with capital ratios increasing and the pandemic nearing its end, we expect most banks to resume buybacks throughout 2021.



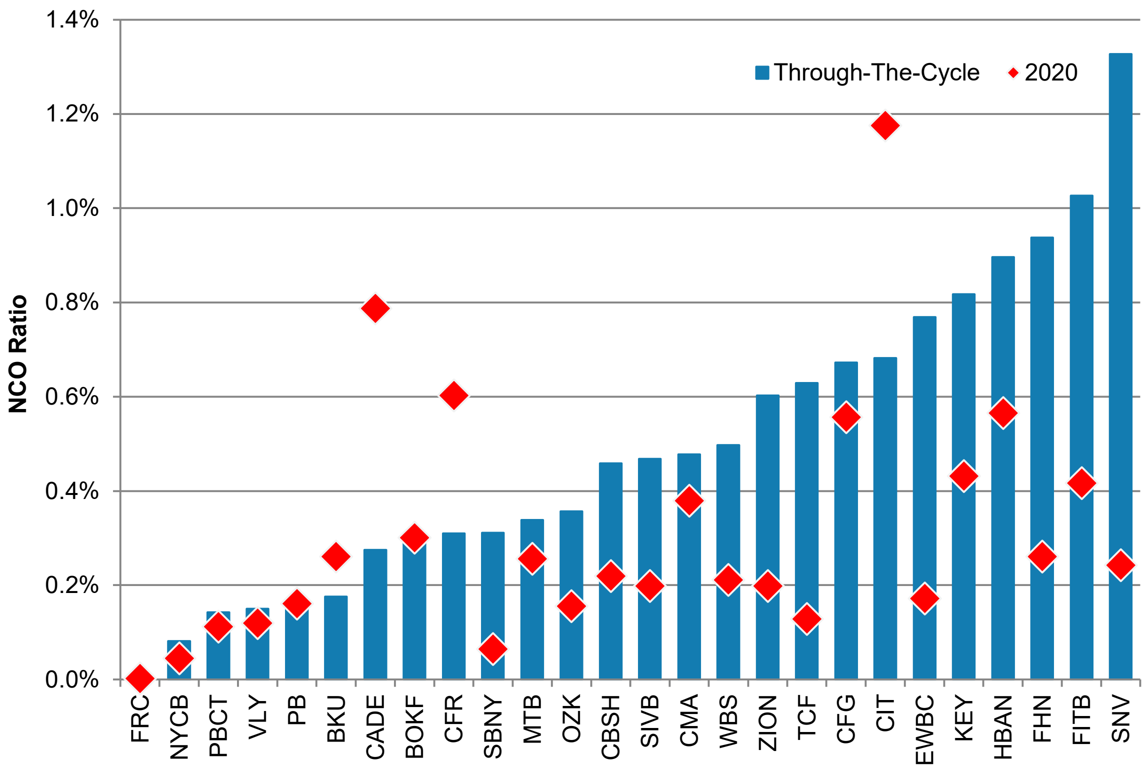
Capital Return by Company

In determining capital return, banks need to consider their excess capital levels, capital needs for organic growth, volatility of earnings, credit losses, and whether additional capital could be needed for potential M&A.



Through-the-Cycle (2005-20) Credit Losses

Knowing which banks have performed better or worse through both good and bad times provides critical insight into each bank's approach to managing credit.



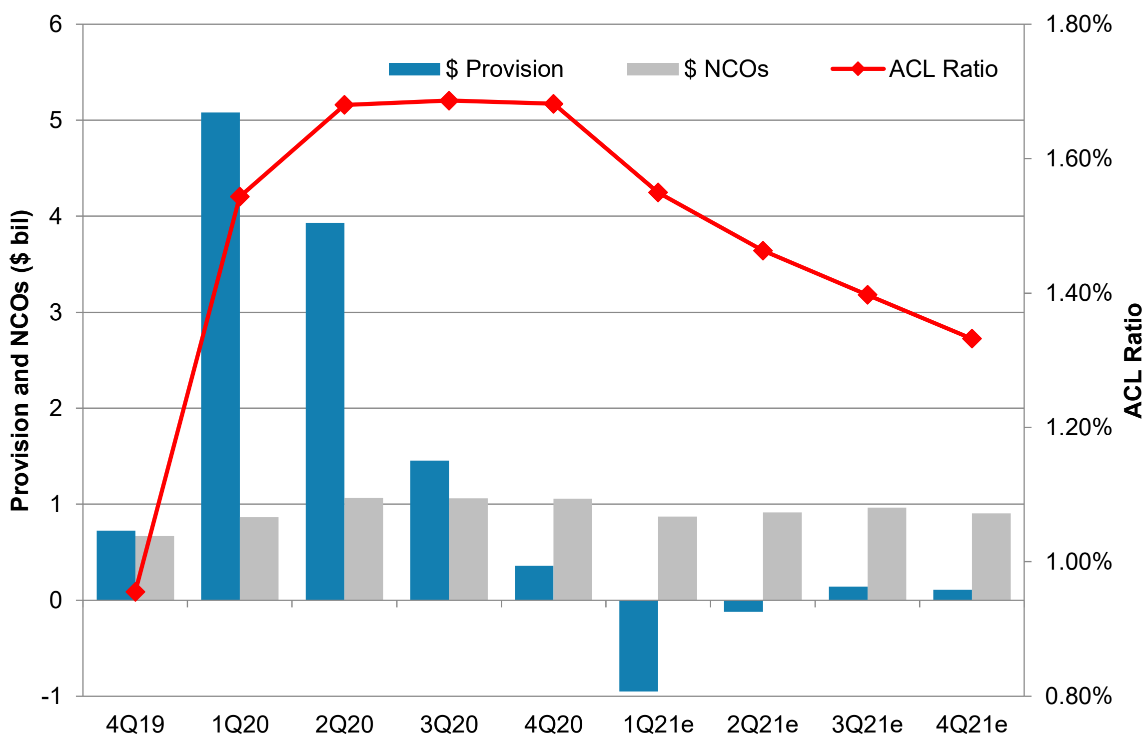
Source: SNL Financial, Company data, Morgan Stanley Research
Note: We use the earliest available data for banks that do not have full data sets back to 2005.

Through-the-Cycle NCOs

- We define through-the-cycle NCOs as the average NCO ratio at each bank from 2005 to 2020.
- **FRC** and **NYCB** are the two best underwriters in our coverage universe, with pristine credit quality during both expansionary and recessionary periods.
- However, how the market defines which banks are good or bad underwriters might need to change, given changes in each bank's individual underwriting standards.
- Some banks, like **SNV, FHN,** and **EWBC** performed poorly during the Financial Crisis, but have performed *far better* more recently, including during the pandemic, with NCOs in line or below their peer average.

How CECL Works, Using Real Data

We demonstrate how CECL reserve accounting has been applied during the pandemic, and where we see provision, credit losses, and reserves trending from here.



Timing of CECL

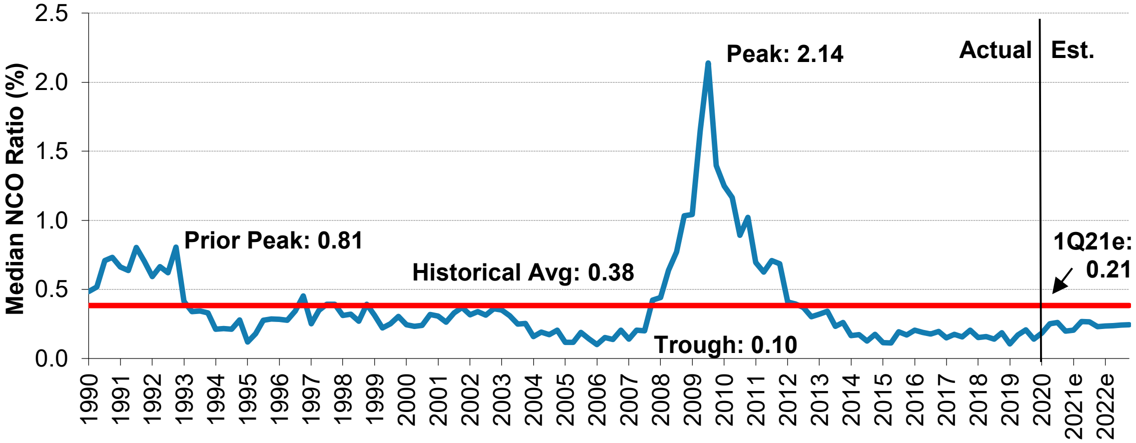
- **Banks increased reserves significantly due to the pandemic.** In anticipation of higher credit losses, banks increased their allowance for credit losses by 58 bps to 1.54% in 1Q20, peaking at 1.69% in 3Q20.
- Following the large reserve build in the first half of the year, **provision expense declined sharply** in the second half of 2020 (down 63% Q/Q in 3Q20 and 75% in 4Q20) as the outlook for credit losses began to stabilize and even improve.
- **We estimate that the banks will bring down their ACL ratios by 35 bps in 2021** as charge-offs increase modestly through the middle of the year (peaking at 26 bps in 2Q21 and 3Q21) and provision expense remains low. We expect another 20 bps of reserve release in 2022 and that banks will reach their pre-COVID reserve levels before the end of that year.

Source: Company data, Morgan Stanley Research estimates

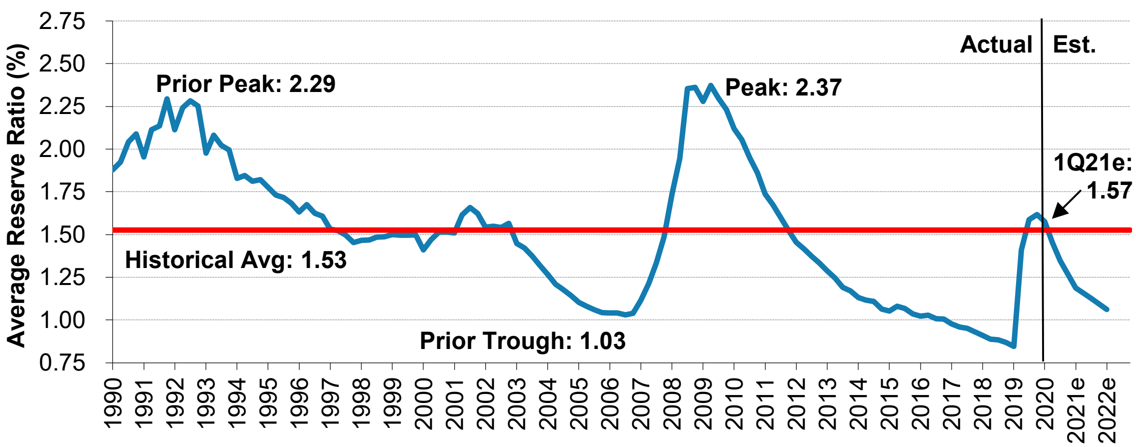
Credit Quality

We Expect Reserve Release Throughout 2021 as Losses Peak

Net Charge-Off Ratio



Reserve Ratios Will Trend Lower Through 2022



NCOs and Reserve Coverage

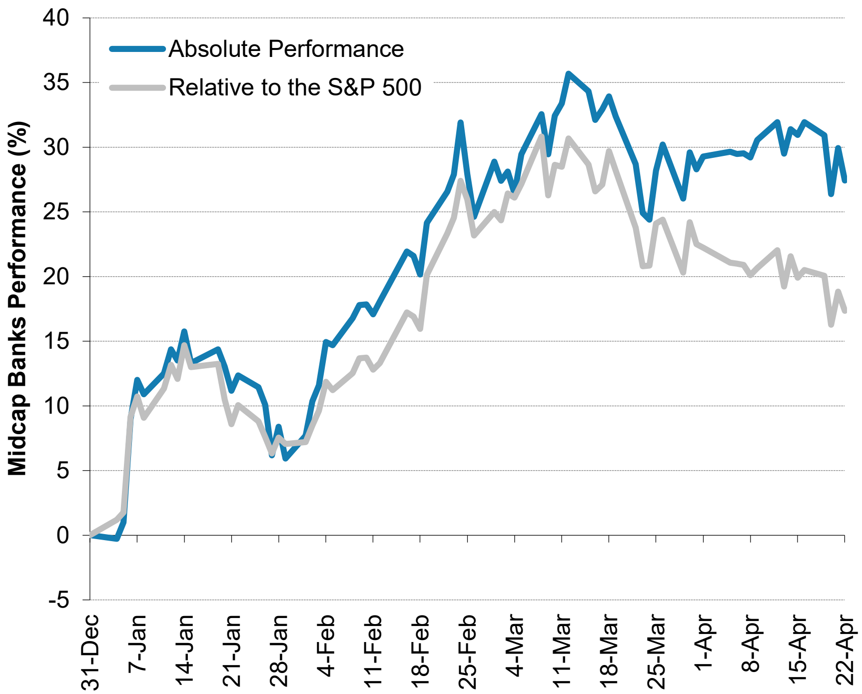
- We have yet to see any meaningful amount of credit losses materialize in bank balance sheets. **We estimate NCOs could peak in mid-2021 around 26 bps,** which is well below what we expected at the beginning of the pandemic.
- CECL accounting, however, resulted in reserve ratios rising sharply in the first half of 2020 as banks built their allowance for credit losses in anticipation of credit defaults over the next several years.
- At this point, **we believe reserve ratios will trend sharply lower** in 2021 and, to a lesser extent, into 2022, unless there is a meaningful deterioration in the macro outlook.
- **Where should reserve ratios stabilize?** Once the pandemic has passed, we believe the ALLL ratio will stabilize around 1.11%, with ACL ratios stabilizing around 1.16%. This is the average CECL Day 1 ACL ratio, which is what reserves would have been in 1Q20 before accounting for the pandemic.

We use Allowance for Loan Losses for the Reserve Ratio. Source: Company data, Morgan Stanley Research

Valuation

Absolute and Relative Performance

Midcap Bank Performance, 2021 YTD



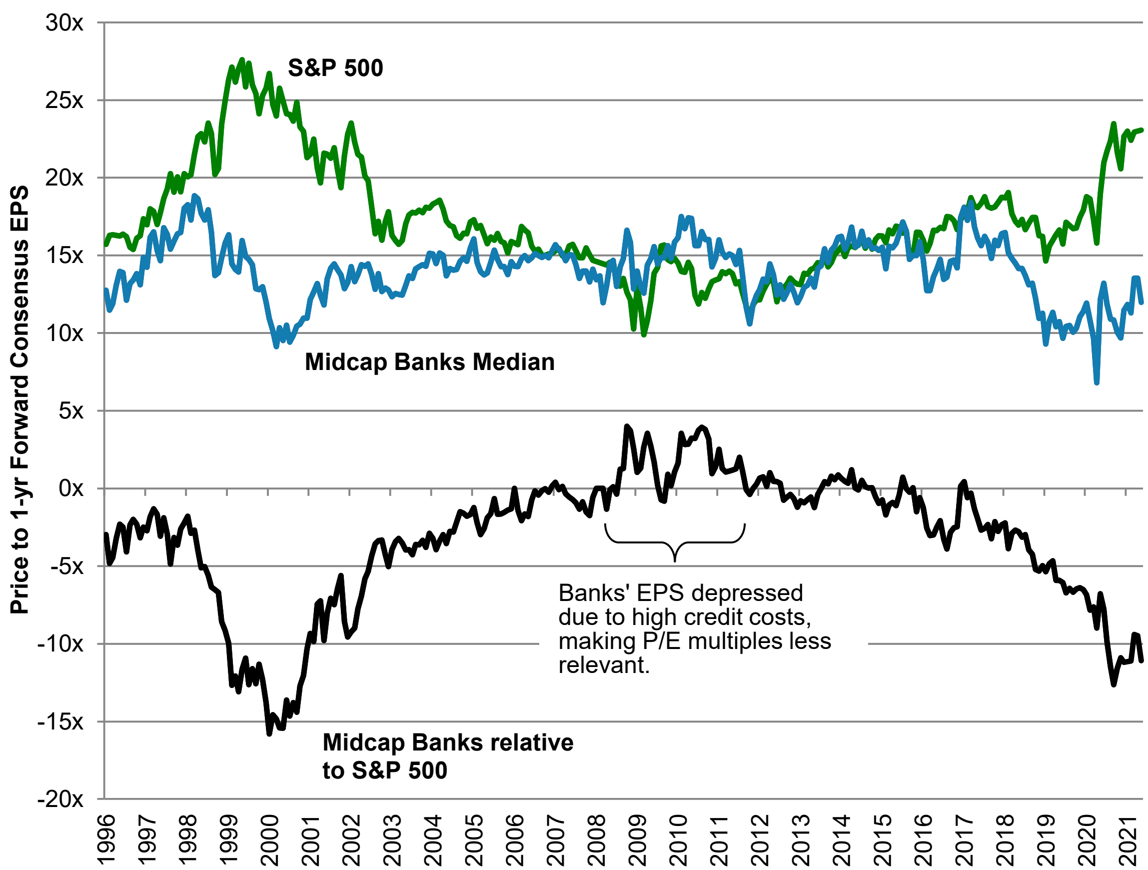
Individual Performance by Bank

		Price as of	Performance			
Ticker	**Rating**	**4/22/2021**	**1-mo**	**3-mo**	**YTD**	**1-yr**
CADE	EW	20.97	-2%	2%	28%	325%
SIVB	EW	518.99	1%	8%	34%	210%
CIT	++	52.16	5%	31%	45%	199%
SBNY	OW	240.89	5%	50%	78%	180%
EWBC	OW	73.42	-3%	18%	45%	172%
SNV	OW	44.84	-4%	20%	39%	170%
BKU	EW	42.87	-6%	15%	23%	139%
OZK	EW	39.28	-7%	9%	26%	126%
FITB	OW	36.86	-1%	19%	34%	123%
CMA	EW	67.88	0%	9%	22%	123%
CFG	OW	43.18	-1%	12%	21%	121%
FHN	EW	17.28	2%	19%	35%	120%
WBS	EW	50.58	-13%	0%	20%	119%
VLY	EW	13.37	-2%	22%	37%	96%
KEY	EW	20.01	0%	10%	22%	96%
BOKF	EW	85.91	-8%	9%	25%	94%
TCF	EW	43.19	-8%	5%	17%	94%
CFR	UW	111.94	0%	16%	28%	90%
ZION	EW	52.56	-5%	9%	21%	82%
HBAN	EW	14.46	-8%	4%	14%	80%
FRC	EW	172.66	3%	10%	18%	76%
PBCT	EW	17.35	-1%	24%	34%	58%
PB	EW	74.39	-3%	6%	7%	54%
CBSH	UW	74.88	-3%	8%	14%	43%
MTB	EW	149.09	0%	4%	17%	43%
NYCB	++	11.71	-3%	6%	11%	19%
Simple Average			**-2.3%**	**13.3%**	**27.5%**	**117.4%**
Mkt Cap Weighted Avg			**-1.0%**	**13.4%**	**27.4%**	**110.3%**
S&P 500			**4.9%**	**7.6%**	**10.1%**	**47.7%**

Source: Thomson Reuters, Morgan Stanley Research
Note: Data as of 4/22/2021 ++ Stock Rating for this company has been removed from consideration in this report because, under applicable law and/or Morgan Stanley policy, Morgan Stanley may be precluded from issuing such information with respect to this company at this time.

Valuation

Price to 1-Year Forward Consensus Earnings



Price-to-Earnings

- The midcap banks are trading at 12.0x next 12 months' earnings, which is 11.1x below the S&P 500.
- While banks normally trade at a discount to the market given their more modest growth prospects and greater earnings volatility in stressed periods, the discount at which they are currently trading seems excessive.
- As the economy reopens, interest rates increase, and credit quality becomes less of a concern, we would expect the valuation gap with the S&P 500 to narrow as bank multiples re-rate higher.

Source: Thomson Reuters, Morgan Stanley Research

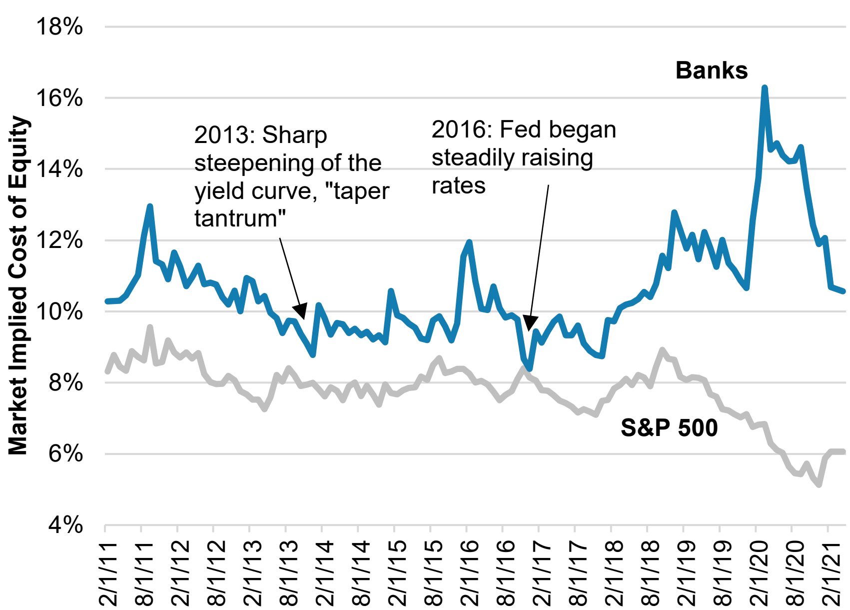
Applying a Cost of Equity Lens Reveals Sizable Upside for the Banks

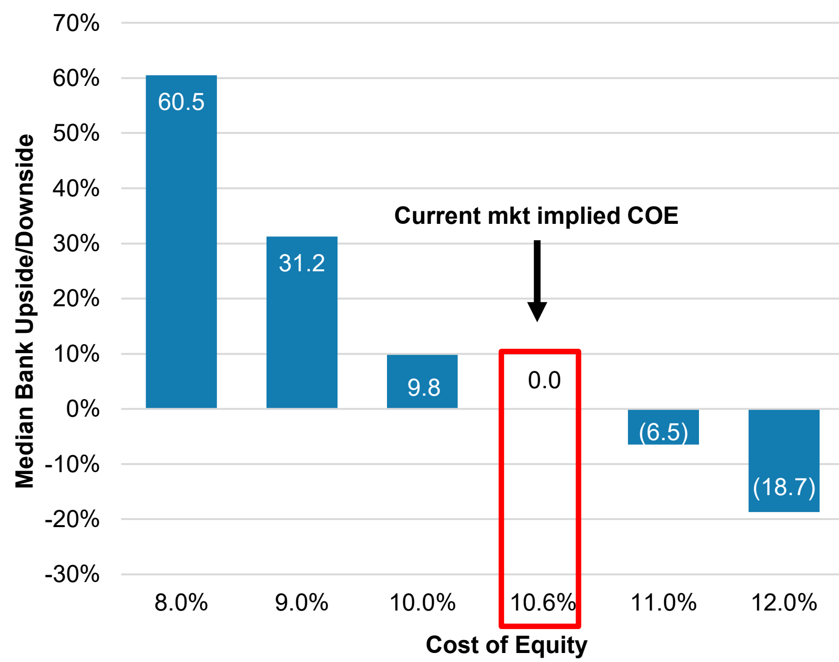
Banks Remain Cheap Versus the S&P 500

The average market-implied COE for the banks is 10.6%, or about 450 bps higher than the S&P 500. Compared to a more normal average of just over 200 bps, this implies sizable relative upside to bank valuations.

Sizable Upside as the COE Spread Narrows

Narrowing the COE gap back to the average (a decline of 245 bps in their cost of equity) would add ~56% upside versus the S&P 500.



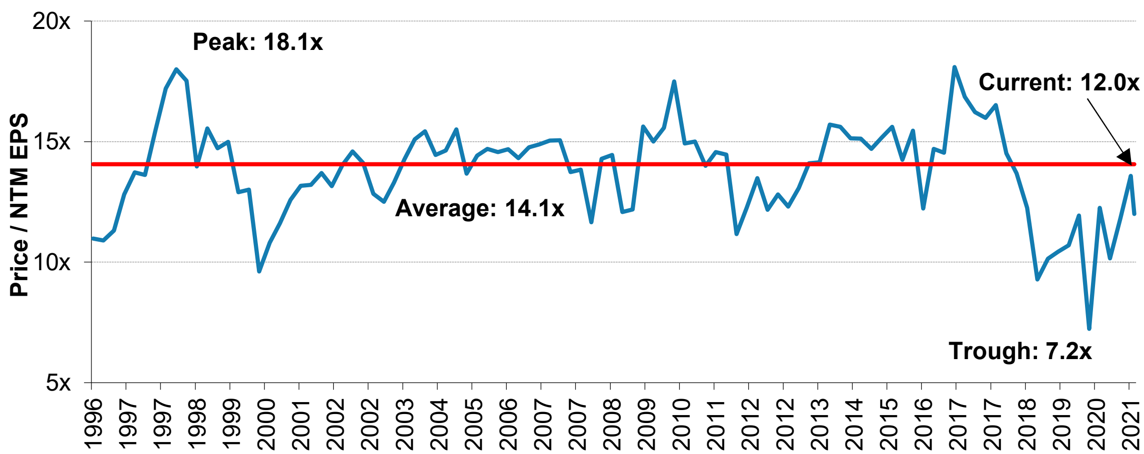


Source: Thomson Reuters, Company data, Morgan Stanley Research

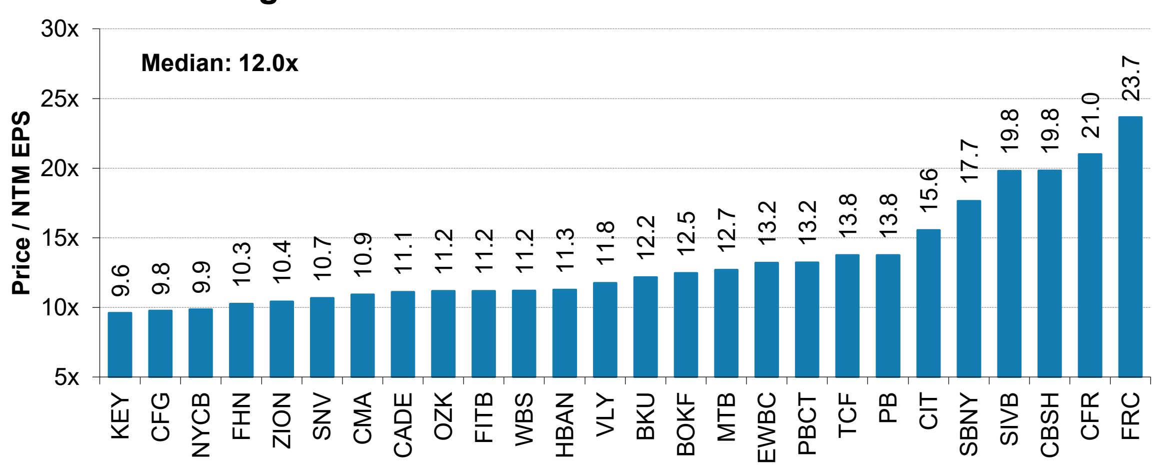
Valuation

Midcap Bank Valuations Are Not Stretched Versus History

Median Ratio of Price-to-Earnings



Price-to-Earnings



Room to Re-rate Higher

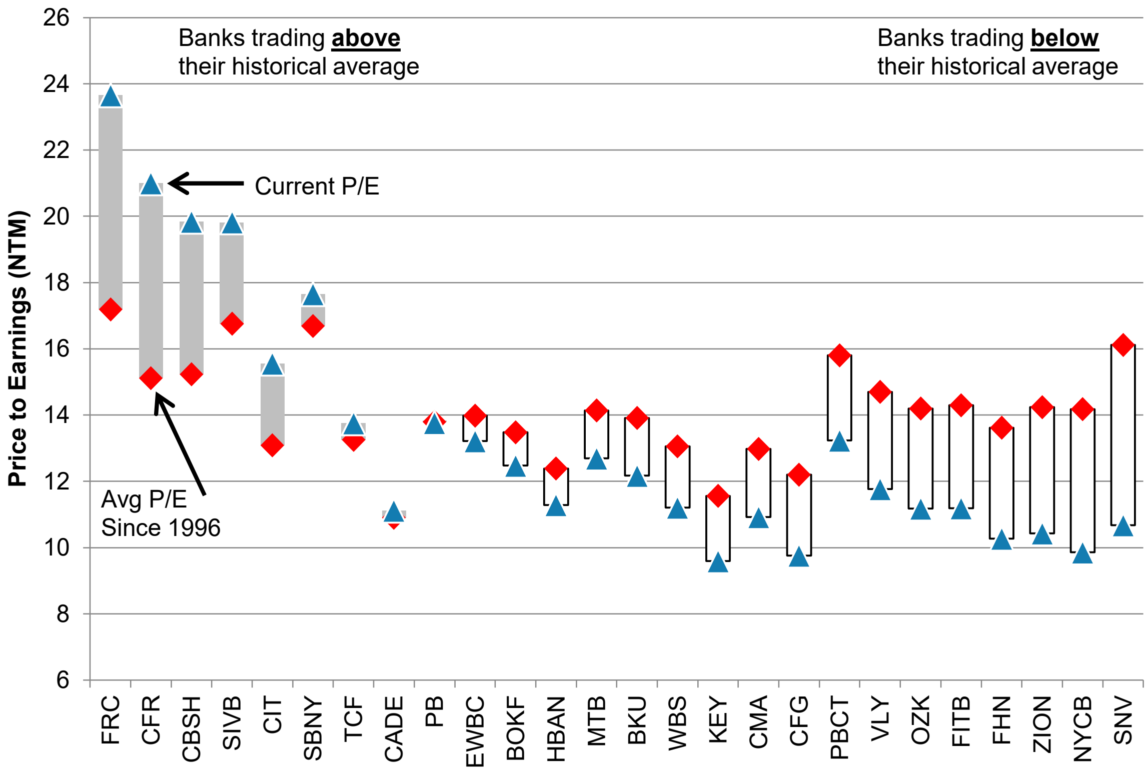
- The banks are trading at 12.0x earnings per share, which is below their long term average of 14.1x.
- Despite their sizable outperformance versus the S&P 500 so far in 2021, the midcap banks are still trading below their long term average valuation, suggesting that they could still have room to re-rate higher as the economy re-opens, interest rates increase, and fear around credit deterioration continues to abate.

Source: Thomson Reuters, Company data, Morgan Stanley Research.

Valuation

Current Bank Valuations Compared to Historical Average

While the overall group is trading at a slight discount to its historical average, four banks (FRC, CFR, CBSH, and SIVB) are trading at the largest premiums to their 25-year average multiple. Conversely, SNV is trading at the largest discount.



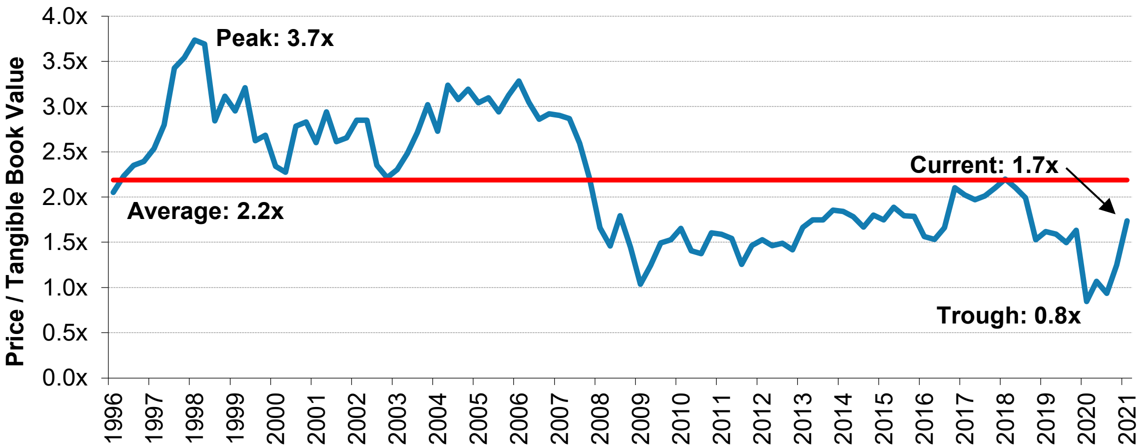
	P/E (NTM) Current	Avg P/E Since '96	Diff
FRC	23.7	17.2	6.5
CFR	21.0	15.1	5.9
CBSH	19.8	15.2	4.6
SIVB	19.8	16.8	3.1
CIT	15.6	13.1	2.5
SBNY	17.7	16.7	1.0
TCF	13.8	13.3	0.5
CADE	11.1	10.9	0.2
PB	13.8	13.8	0.0
EWBC	13.2	14.0	-0.8
BOKF	12.5	13.5	-1.0
HBAN	11.3	12.4	-1.1
MTB	12.7	14.1	-1.4
BKU	12.2	13.9	-1.7
WBS	11.2	13.1	-1.9
KEY	9.6	11.6	-2.0
CMA	10.9	13.0	-2.1
CFG	9.8	12.2	-2.4
PBCT	13.2	15.8	-2.6
VLY	11.8	14.7	-2.9
OZK	11.2	14.2	-3.0
FITB	11.2	14.3	-3.1
FHN	10.3	13.6	-3.4
ZION	10.4	14.2	-3.8
NYCB	9.9	14.2	-4.3
SNV	10.7	16.1	-5.4
Median	**12.0**	**14.1**	**-2.1**

Source: Thomson Reuters, Morgan Stanley Research

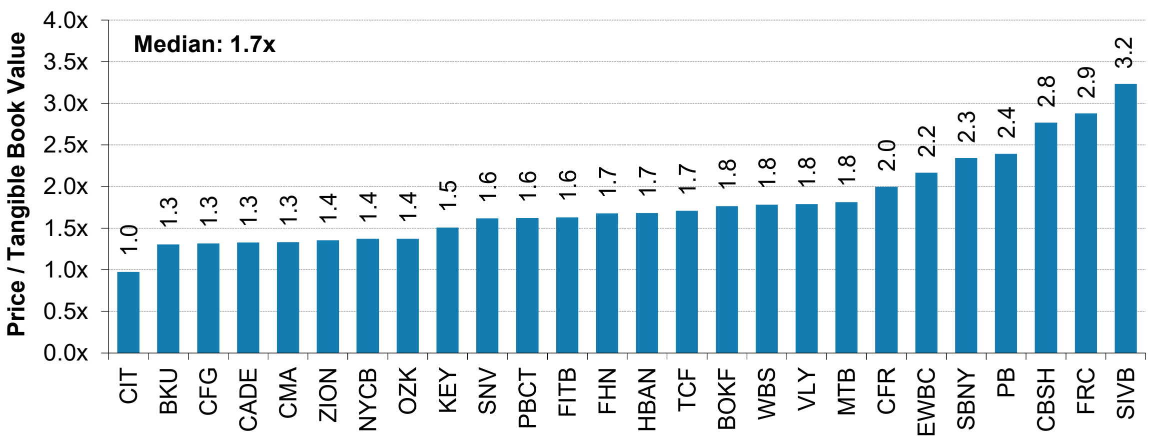
Valuation

Price-to-Tangible Book

Median Ratio of Price-to-Tangible Book Value



Price-to-Tangible Book Value



Price-to-Tangible Book

- The banks are trading at 1.7x tangible book value, below their long term average of 2.2x.
- There is a high correlation between tangible book value multiples and ROTCE, and there is no question that 2020 was a difficult year for bank profitability given significant reserve build early in the year given CECL accounting and the pandemic.
- But the market is not giving banks enough credit for the improvement in ROTCE that we expect over the next several quarters (improving to 13.9% for the midcap banks in 2021e vs. 10.4% in 2020), which would justify a higher P/TBV multiple.

Source: Thomson Reuters, Company data, Morgan Stanley Research

Midcap Banks Comps Table

				Pricing				Earnings & Book Value					Valuation (Price to)					Capital & Profitability		
Company	**Ticker**	**Rating**	**Price Target**	**Price 4/22/21**	**% Upside**	**Mkt Cap**	**Div Yield**	**2021E EPS**	**2022E EPS**	**2023E EPS**	**BVPS**	**Tang. BVPS**	**2021E EPS**	**2022E EPS**	**2023E EPS**	**BVPS**	**Tang. BVPS**	**Tier 1 Comm**	**2021E ROTCE**	**2021E ROA**
Bank OZK	OZK	EW	50	39.28	27%	5,081	2.7%	3.38	3.70	3.95	33.58	28.60	11.6x	10.6x	9.9x	1.17x	1.37x	13.4%	11.8%	1.6%
BankUnited	BKU	EW	50	42.87	17%	3,990	2.0%	3.35	3.92	3.94	32.65	32.83	12.8x	10.9x	10.9x	1.31x	1.31x	12.6%	10.0%	0.9%
BOK Financial	BOKF	EW	100	85.91	16%	5,983	2.3%	7.66	7.07	7.33	77.03	48.75	11.2x	12.2x	11.7x	1.12x	1.76x	12.0%	12.5%	1.1%
Cadence Bancorp	CADE	EW	23	20.97	10%	2,642	2.7%	2.02	1.79	1.67	17.17	15.80	10.4x	11.7x	12.6x	1.22x	1.33x	14.0%	13.0%	1.3%
Citizens Financial Group	CFG	OW	56	43.18	30%	18,447	3.5%	4.85	4.11	4.32	48.57	32.78	8.9x	10.5x	10.0x	0.89x	1.32x	10.0%	14.6%	1.2%
Comerica	CMA	EW	73	67.88	8%	9,449	3.9%	5.56	5.47	5.14	58.62	50.93	12.2x	12.4x	13.2x	1.16x	1.33x	10.3%	10.2%	0.9%
Commerce Bancshares	CBSH	UW	67	74.88	-11%	8,771	1.4%	4.22	3.89	3.97	28.34	27.04	17.7x	19.2x	18.9x	2.64x	2.77x	13.7%	15.1%	1.5%
Cullen/Frost Bankers	CFR	UW	90	111.94	-20%	7,053	2.5%	6.03	5.89	5.85	66.50	56.06	18.6x	19.0x	19.1x	1.68x	2.00x	12.9%	10.7%	0.9%
East West Bancorp	EWBC	OW	85	73.42	16%	10,394	1.7%	4.92	5.43	5.75	38.19	33.90	14.9x	13.5x	12.8x	1.92x	2.17x	12.7%	16.2%	1.2%
Fifth Third Bancorp	FITB	OW	45	36.86	22%	26,272	2.8%	3.10	3.37	3.39	29.83	22.62	11.9x	10.9x	10.9x	1.24x	1.63x	10.3%	13.3%	1.1%
First Horizon National	FHN	EW	19.5	17.28	13%	9,590	3.3%	1.59	1.49	1.46	13.77	10.31	10.9x	11.6x	11.8x	1.25x	1.68x	9.7%	15.3%	1.1%
First Republic Bank	FRC	EW	175	172.66	1%	30,064	0.5%	7.19	7.96	9.35	61.26	59.98	24.0x	21.7x	18.5x	2.82x	2.88x	9.7%	12.9%	0.9%
Huntington Bancshares	HBAN	EW	18.5	14.46	28%	14,706	4.0%	1.36	1.51	1.60	10.82	8.60	10.6x	9.6x	9.0x	1.34x	1.68x	10.0%	16.8%	1.2%
KeyCorp	KEY	EW	24	20.01	20%	19,525	3.6%	1.90	2.01	2.07	16.73	13.30	10.5x	10.0x	9.7x	1.20x	1.50x	9.8%	14.3%	1.2%
M&T Bank Corp	MTB	EW	175	149.09	17%	19,133	2.9%	12.70	14.13	14.45	118.41	82.35	11.7x	10.6x	10.3x	1.26x	1.81x	10.0%	21.1%	1.2%
New York Comm Bancorp	NYCB	++	++	11.71	NM	5,432	5.7%	1.15	1.24	1.29	13.77	8.32	10.2x	9.4x	9.1x	0.85x	1.41x	9.7%	13.3%	1.0%
People's United Financial	PBCT	EW	20.5	17.35	18%	7,366	4.1%	1.34	1.45	1.39	18.44	10.70	12.9x	12.0x	12.5x	0.94x	1.62x	10.5%	12.9%	0.9%
Prosperity Bancshares	PB	EW	81	74.39	9%	6,886	2.6%	5.66	5.55	5.63	67.09	31.08	13.1x	13.4x	13.2x	1.11x	2.39x	13.7%	19.6%	1.5%
Signature Bank	SBNY	OW	280	240.89	16%	12,903	0.9%	12.49	15.01	16.82	103.64	102.83	19.3x	16.0x	14.3x	2.32x	2.34x	9.9%	16.7%	0.9%
SVB Financial Group	SIVB	EW	510	518.99	-2%	26,930	0.0%	25.64	22.95	24.74	171.32	160.60	20.2x	22.6x	21.0x	3.03x	3.23x	11.0%	14.4%	1.0%
Synovus Financial Corp	SNV	OW	56	44.84	25%	6,638	2.8%	3.94	4.31	4.27	31.84	27.74	11.4x	10.4x	10.5x	1.41x	1.62x	9.7%	13.9%	1.1%
TCF Financial	TCF	EW	52	43.19	20%	6,589	3.2%	3.32	3.55	3.44	37.09	25.31	13.0x	12.2x	12.6x	1.16x	1.71x	11.5%	12.2%	1.1%
Valley National Bancorp	VLY	EW	14.75	13.37	10%	5,400	3.1%	1.20	1.23	1.26	11.05	7.47	11.1x	10.9x	10.6x	1.21x	1.79x	9.9%	16.4%	1.2%
Webster Financial	WBS	EW	63	50.58	25%	4,562	3.0%	5.04	5.07	5.29	34.60	28.41	10.0x	10.0x	9.6x	1.46x	1.78x	11.3%	22.7%	1.1%
Zions Bancorp	ZION	EW	59	52.56	12%	8,624	2.5%	4.94	4.74	4.11	45.38	38.77	10.6x	11.1x	12.8x	1.16x	1.36x	10.8%	12.4%	1.0%
Median					**16%**		**2.8%**						**11.7x**	**11.6x**	**11.8x**	**1.24x**	**1.68x**	**10.5%**	**13.9%**	**1.1%**

Source: Company data, Thomson Reuters, Morgan Stanley Research E = Morgan Stanley Research Estimates Stock Ratings: OW = Overweight EW = Equal-weight UW = Underweight
++ Stock Rating and Price Target for this company have been removed from consideration in this report because, under applicable law and/or Morgan Stanley policy, Morgan Stanley may be precluded from issuing such information with respect to this company at this time.

Morgan Stanley

FOUNDATION

May 2021

Financials Spring Training Teach-In

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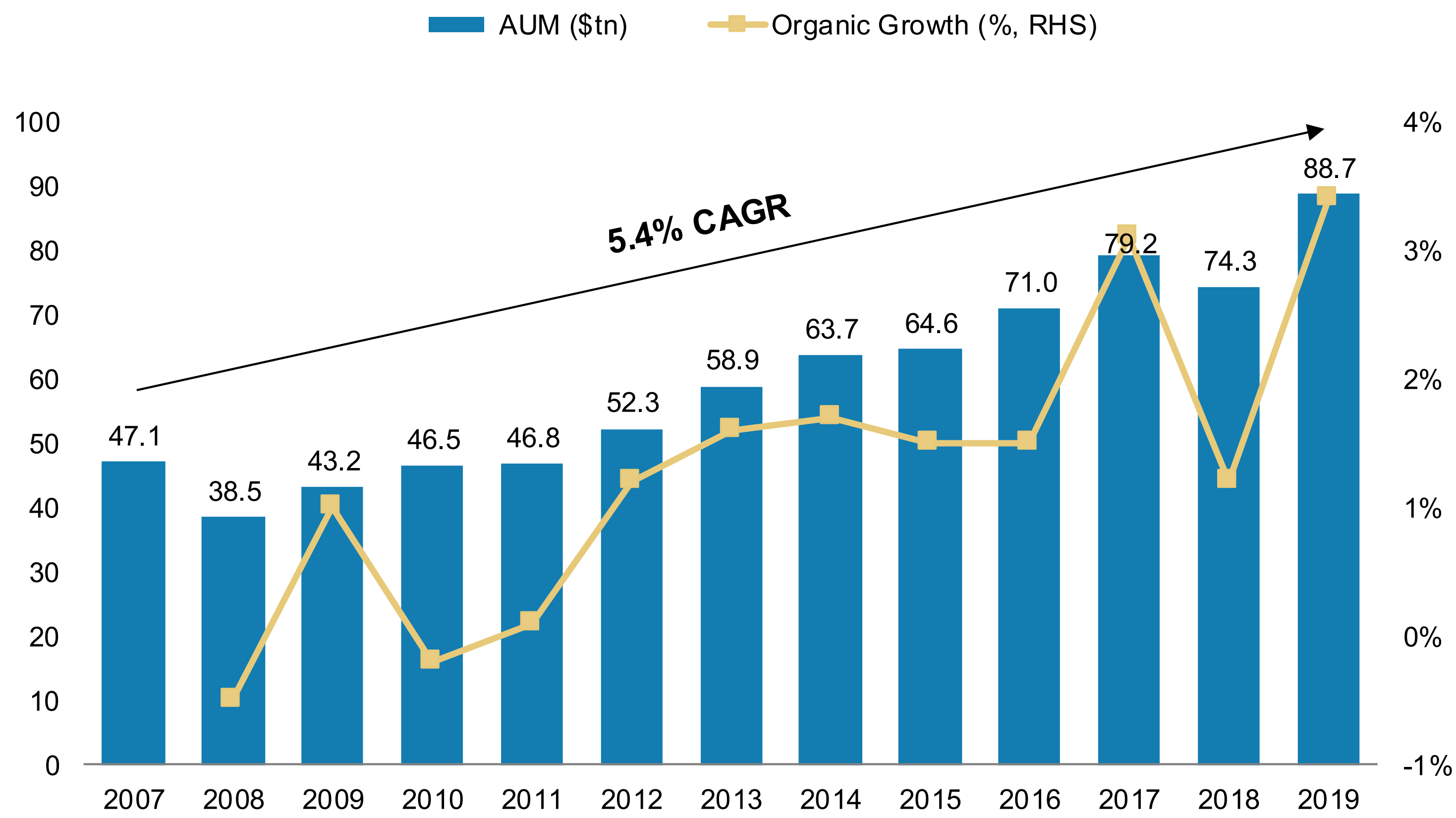
Industry Backdrop

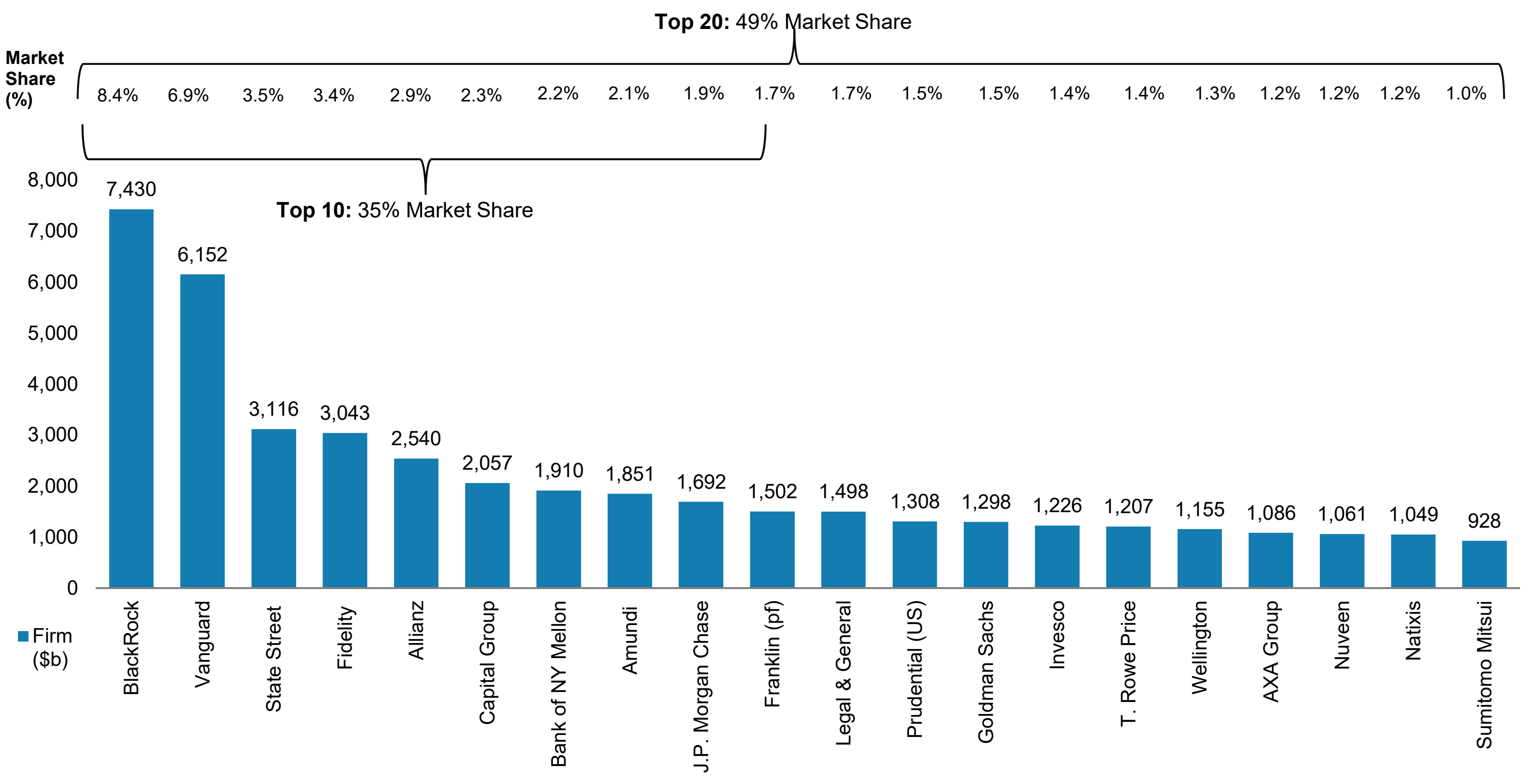
Global Asset Management Industry AuM Has Grown Steadily since the GFC

Global AuM and Organic Growth



Source: BCG, Boston Consulting Group – Global Asset Management Report: 2019

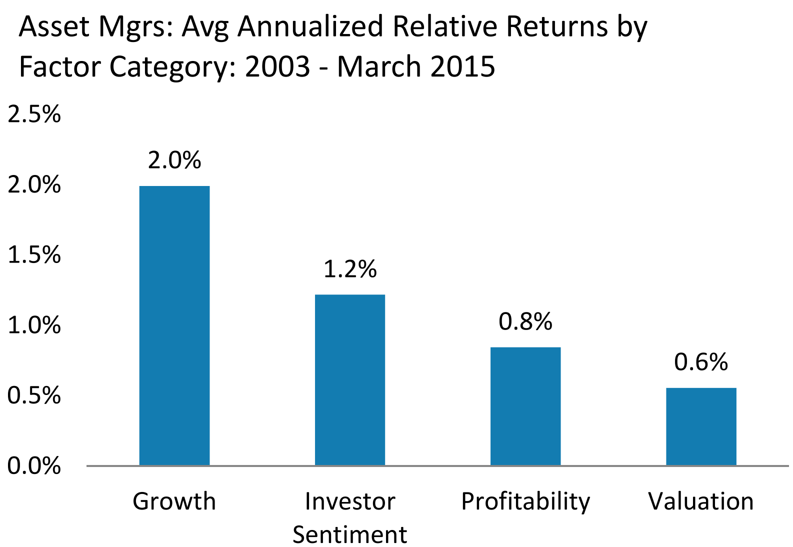
Asset Management – A highly fragmented industry where combined market share of Top 20 Managers is only 49%



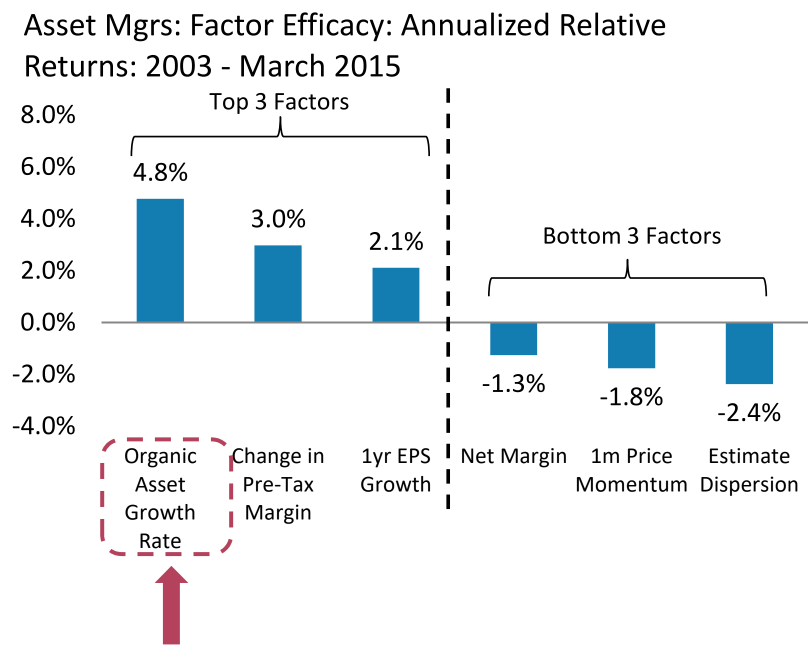
Source: Company data, Willis Towers Watson, BCG, Morgan Stanley Research, data as of Dec 31, 2019, Prudential US (i.e., PGIM) AuM is third-party, excludes General Accounts and affiliated Prudential businesses, Allianz AuM is third party and consists of PIMCO/AGI, Franklin reflects pro forma for acquisition of Legg Mason

Growth Is the Key Driver of Asset Manager Stock Performance

Growth Metrics Are Most Effective at Predicting Stock Returns for Asset Managers



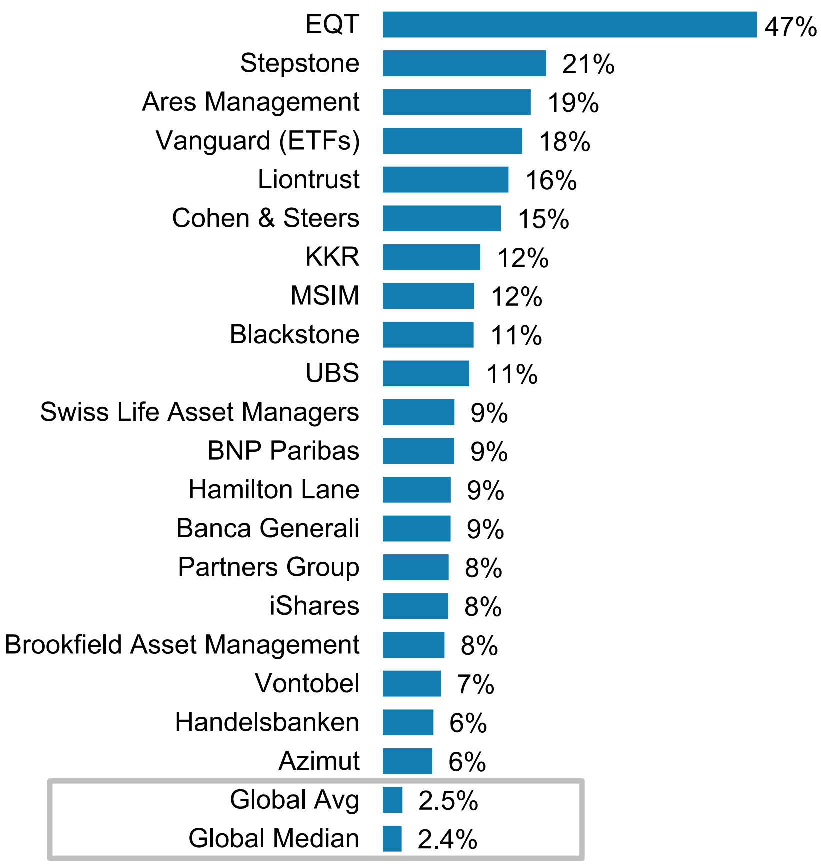
… Particularly Flows, and to a Lesser Extent EPS Growth



Source: Morgan Stanley Research Equity Strategy Team

Private markets players dominate leaderboard, with solid growth for ETF/Passives, active equity improving with Sustainable/Thematic product

Global Traditional Asset Managers 2020 NNM% – Top 20



- We assess net flows across global asset managers - traditional, and alternative players, listed, captive and non-listed managing >$53trn of AUM. Overall industry flows saw substantial 2H20 recovery leading to ~2% NNM growth for 2020 overall.
- Some of strongest growth amongst best of breed private market players – EQT, Stepstone, Ares, Blackstone, Partners, Brookfield, and KKR – all featuring in the top 20 for growth, evidencing the enduring demand for private markets asset strategies as institutional and increasingly private client investors search for returns. RE and infrastructure product demand also behind the strength of Cohen & Steers and Swiss Life.
- Demand for low-cost beta also evident in the growth for ETF/Passive providers Vanguard and iShares (including for ESG/Sustainable offering).
- Demand for ESG/Sustainable and broader thematic and global product offering combined with improved active performance clear from the growth momentum at MSIM, UBS, BNP, Handelsbanken, Liontrust.

Global average: +2.5% (Trads: +1.7%, Alts 10.5%); median +2.4%

US average: +1.7% (Trads: +1.3%, Alts: +9.8%); median: +2.9%

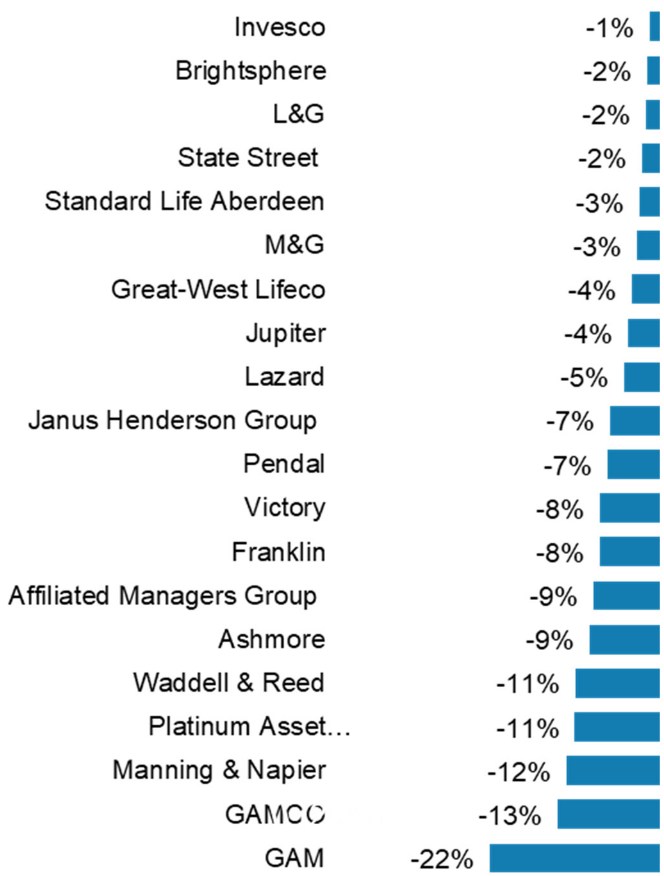
EU average: +2.5% (Trads: +2.5%, Alts: +13.9%); median +2.4%

Source: Company Data, Morgan Stanley Research, data as of Dec 31, 2020

Note: analysis covers ~90 asset managers globally with ~$53tn of AuM including listed, unlisted and captive names. Represents the annualized net new money growth rate. Note these averages were calculated using a AuM-weighted average. We include Long Term flows ex Money Markets where disclosure allows. NNM % ex-Money markets shown where disclosure allows, for BNP NNM includes MM and long term asset flows. We exclude HSBC at ~7% NNM growth as this is principally due to money markets and passive flows.

Global outflows linked to passive pressure, those with poor performance and/or lack of diversification, and reflects challenges in fixed income markets in 1H20

Global Traditional Asset Managers 2020 NNM% – Bottom 20



Weaker flows for those with poor performance and / or lack of diversification, or skewed to fixed income

- GAM (opportunistic credit and EM debt)
- GAMCO (performance-driven equity outflow)
- Manning & Napier (separate managed accounts, sub-advisory losses)
- Platinum Asset Management (soft performance & lack of diversification)
- Waddell & Reed (int'l core, science and tech)
- Ashmore (EM fixed income challenges)
- Affiliated Managers Group (quant strategies/AQR)
- Franklin (global bond, total return, mutual disc.)
- Victory (acquisition-related, fixed income challenges)
- Janus Henderson (quant equities and institutional client rebalancing)

Global average: +2.5% (Trads: +1.7%, Alts 10.5%); median +2.4%

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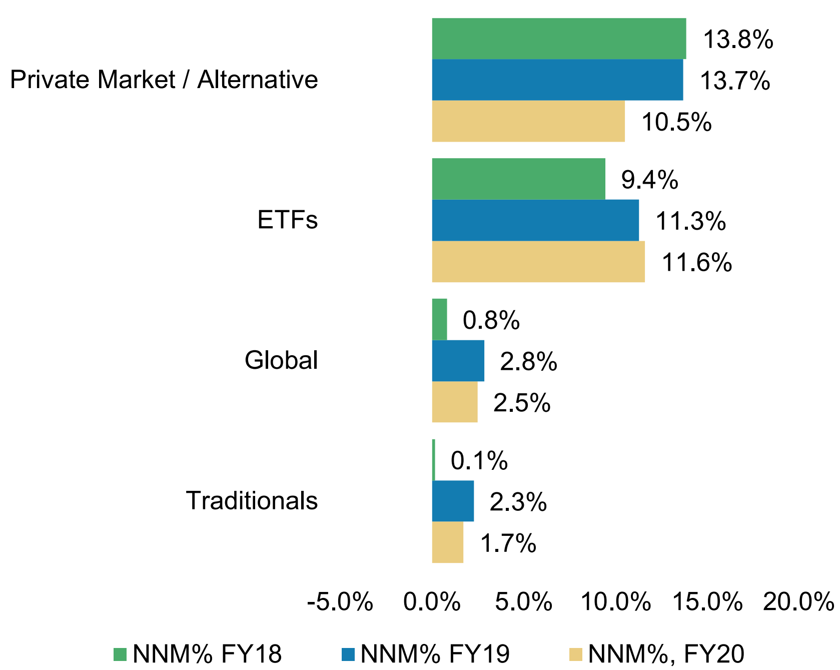
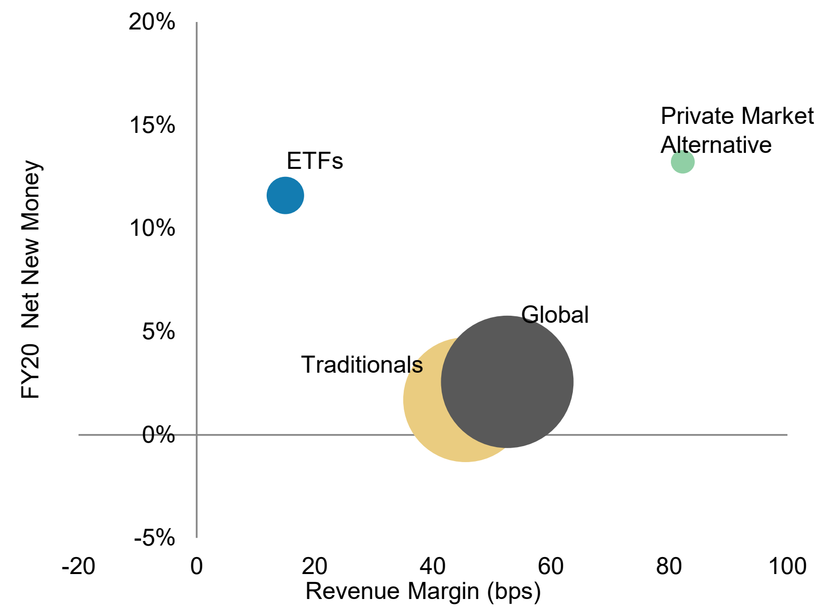
The barbell lives on – private markets sustain leadership, ETFs moderating to high-single-digit % growth, Global flows broadly stable at ~2% given 2H20 recovery

Alternatives and ETFs continued to attract higher inflows in 2020

2020 Net New Money growth (%)



Net New Money vs. revenue margin



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Note: analysis covers ~90 asset managers globally with ~$53tn of AuM including listed, unlisted and captive names. Represents the annualized net new money growth rate. Note these averages were calculated using a AuM-weighted average.

How Do Asset Managers Make Money?

1. **Net Flows**
2. **Market Appreciation**
3. **Fee Rate**
4. **Performance Fees**
5. **Expenses**
6. **Preferred Dividends**
7. **Sharecount**

Sample Asset Manager Income Statement

	Beginning of Period AuM
+	**Net Flows**
+	**Market Appreciation / FX**
	End of Period AuM
	Average AuM
x	**Fee Rate (bps)**
	Management Fees
+	Performance Fees
	Total Revenues
–	Expenses
	Operating Income
+	Non-Operating Income/(Expense)
	Pre-Tax Income
–	Tax
–	Preferred Dividends
	Net Income to Common
÷	Shares Outstanding
	EPS

Source: Morgan Stanley Research

Asset Management Industry Outlook

- **A “Better” Crisis for Asset Managers.** We see a more encouraging outlook for active managers and hedge funds than for some time given a relatively “better” crisis in terms of investment performance. A cyclical lift in markets and flows since late 2020 is likely to support high-single-digit to low-double-digit top-line growth across our coverage names in 2021. But with >50% of active equity funds still underperforming benchmark, secular challenges are likely to remain intense for many, accelerating strategic discussions around optimal scale and capability.

- **Leveraging Sustainability and Thematic capability key to success in active** – continued share shifts in favour of ESG ($118bn inflows to active ESG equity product vs. $186bn outflow from active equity in 2020) suggest this as a critical battle ground for competition in active. We see growing divergence between those able to pick up market share here and through a strong thematic offering, with demand for thematic products (often intersecting with ESG) evident in the leading flows enjoyed by prominent technology, healthcare, consumer mutual fund product in 2020.

- **Growth zones’ opportunities remain pivotal through the recovery** – we expect 3 key revenue pools to grow at an average 7% CAGR over the next 5 years (ahead of our ~1% industry revenue growth forecast) to an aggregate 55% of industry share. Success in capitalizing on these opportunities will require investments through the recovery, which some managers are already making.
  1. **EM/China onshore as markets liberalize** – we see a ~9% revenue CAGR 2019-2024 here, with a number of players re-emphasising commitments in 2020
  2. **Private markets assets** – driven by increasing allocations from existing and newer investor categories, offering ~7% revenue CAGR 2019-24, on our estimates, with near record deal activity supporting near-term investment/exit activity
  3. **Solutions** – we see a ~3.5% revenue CAGR 2019-24, supported by structural and demographic shifts in pension markets.

- **Consolidation set to accelerate as gap between leaders and laggards widens, driving strategic reassessment** – as active-to-active churn increases in favour of strong alpha generators and those with scale/distribution access, plus those with and ESG/thematic edge, we see a growing divergence between leaders and laggards. We see the best deals improving access to critical growth zones via strengthened product and distribution; scale alone is unlikely to provide a panacea for industry challenges.

- **We see 5 focus areas as key to market share gain as competition intensifies: (1) innovate with ESG/thematics** to further client engagement; **(2) enhance distribution;**;**(3) embrace strategic M&A** to access new customers, improve scale, and expand product offerings; **(4) address the cost base** to compete on price and free up resources for growth; **(5) evolve the investment process** to embrace quant/alt/systematic processes.

- **Globally** across our coverage, **Amundi, EQT, Man Group, Apollo, BlackRock, Blackstone, Stepstone, and Perpetual Ltd** stand out as best positioned to unlock growth - based on their diversified and global franchises, broad product sets, distribution prowess, and positioning in growth zones including alts. Our least preferred stocks, **SLA, Franklin, and Platinum,** face challenges in core businesses that are likely to persist. (Amundi, EQT, Man Group, and SLA are covered by Bruce Hamilton; Perpetual and Platinum, by Andrei Stadnik.)

Disruptive Threats and Challenges

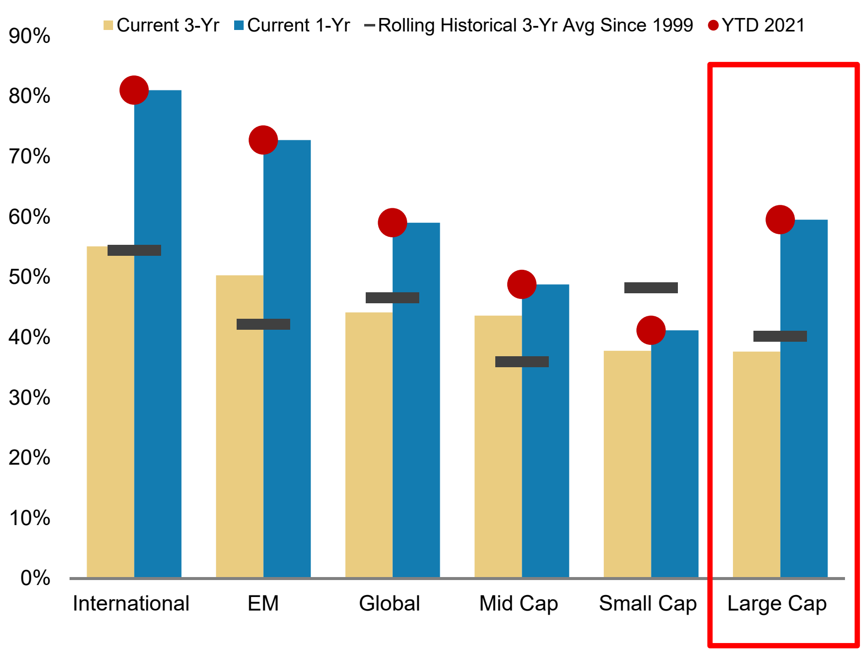
Challenge 1: Poor Performance for Active Managers … although improved recently, still facing challenges from low rates, low growth, and competition

If active managers can outperform through the current crisis that could help drive flows back into active management.

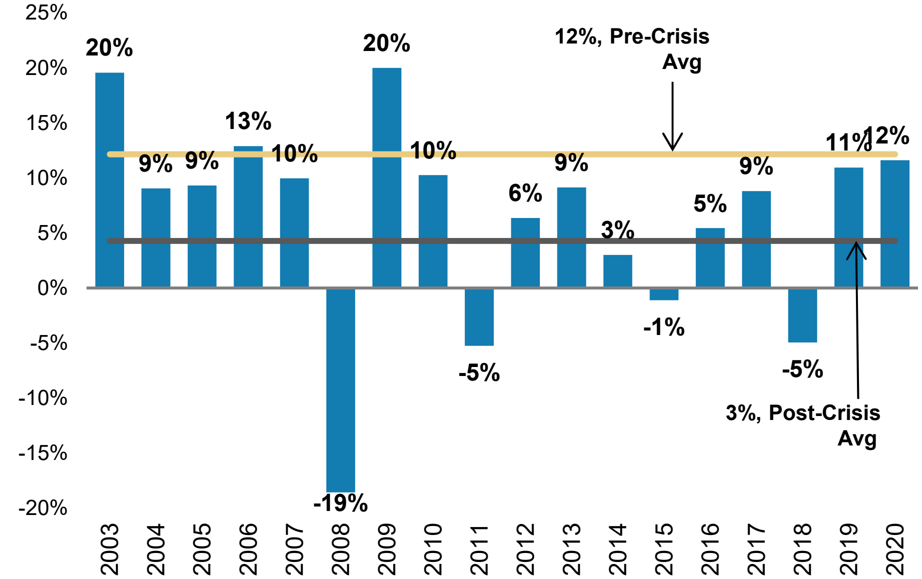
59% of large-cap US managers beating the benchmark, above the 40% rolling 3-year average

Hedge funds showing signs of improvement with 6% returns over the last five years vs. 3% post-crisis avg.

Active Equity Managers Performance



Hedge Fund Industry Performance



Source: for left chart: Morningstar, Morgan Stanley Research. Data through 3/31/2021. * Note: Benchmarks we use to evaluate performance are S&P 500 (large cap), Russell Mid Cap (mid cap), Russell 2000 (small cap), MSCI EM (diversified), MSCI ACWI (global/world), MSCI EAFE (international); for right chart: HFRI All HF Index, Morgan Stanley Research as of Dec 31, 2020

Performance bar rising for active management with only 5-star Funds Inflowing (US Active Equity MFs)

Only top decile of funds see inflows (on median basis) recently, a stark contrast to trends over last two decades. Since 2010, only 5-star funds have captured inflows. Our in-depth quant analysis found that Morningstar rating is the most important driver for US Active Equity MF flows, and that performance bar is rising in order to see inflows.

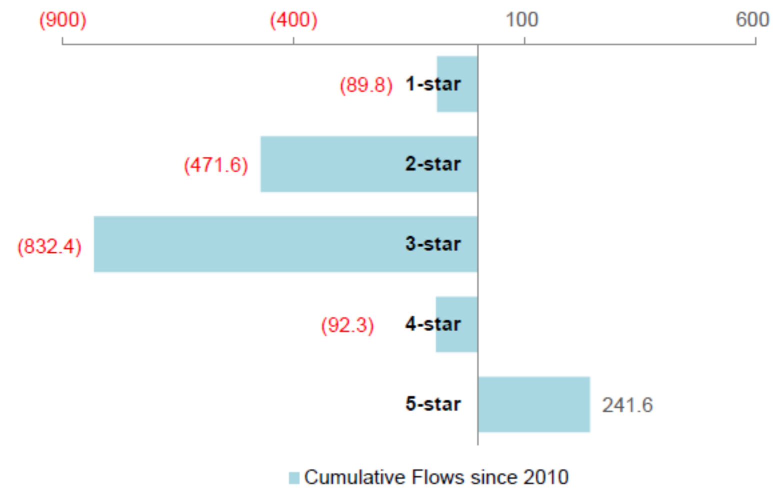
Organic Growth Rates by Decile of Performance

Time Period	1st Decile	2nd Decile	3rd Decile	4th Decile	5th Decile	6th Decile	7th Decile	8th Decile	9th Decile	10th Decile
1991-1999	5.7%	3.2%	2.5%	1.6%	1.1%	0.1%	-0.1%	-1.2%	-1.9%	-3.2%
2000-2009	2.1%	1.1%	0.3%	-0.3%	-0.8%	-1.2%	-1.6%	-2.4%	-2.9%	-4.4%
2010-2017	0.5%	-0.5%	-0.8%	-1.1%	-1.5%	-1.6%	-1.9%	-2.5%	-3.4%	-4.3%
2018	0.4%	-0.8%	-1.4%	-1.2%	-1.5%	-2.1%	-2.3%	-2.9%	-3.2%	-4.4%
2019*	-0.1%	-0.7%	-1.7%	-1.5%	-1.9%	-2.0%	-2.3%	-2.8%	-2.9%	-3.9%

*Median quarterly organic growth rates based on decile of performance returns
*2019 YTD thru Sep 30, 2019

US Active Equity Mutual Funds

Cumulative Net Flows (2010-2019YTD), $B



Source: Morningstar, Morgan Stanley Research

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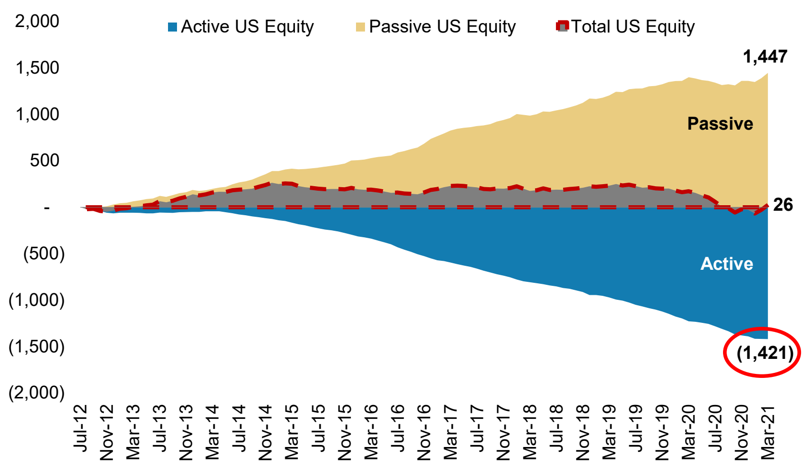
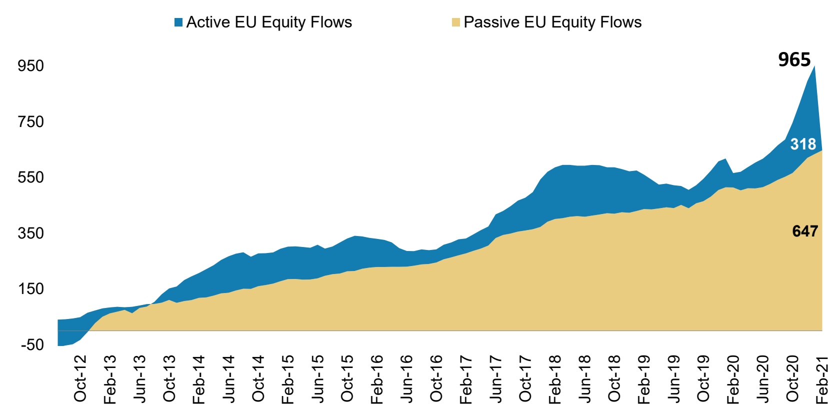
Challenge 2: Passives/ETFs have taken nearly $1.5trn of inflows since 2012 in Domestic US equities, while active has seen outflows of over $1.4trn

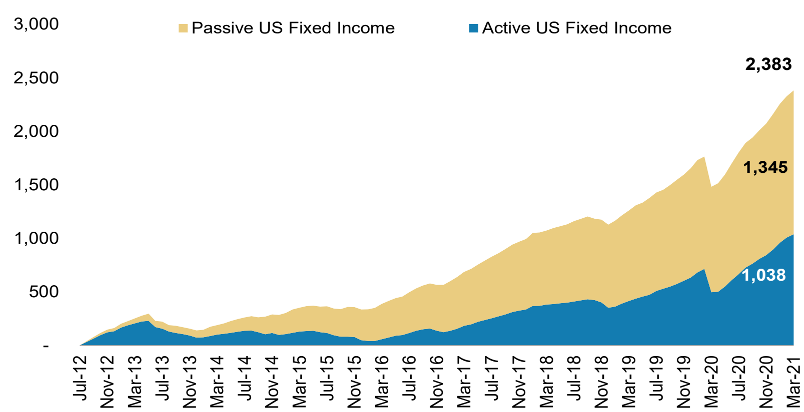
Domestic US Equity Cumulative Flows ($B)



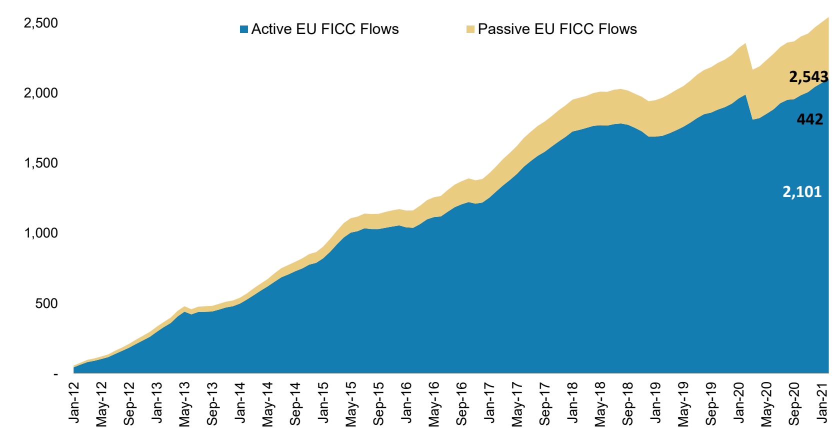
European Equity Cumulative Flows (€B)



Domestic US Fixed Income Cumulative Flows ($B)



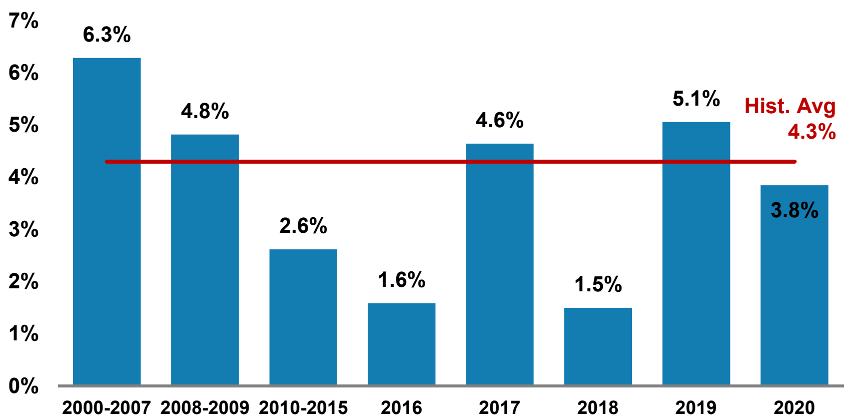
European Fixed Income Cumulative Flows (€B)



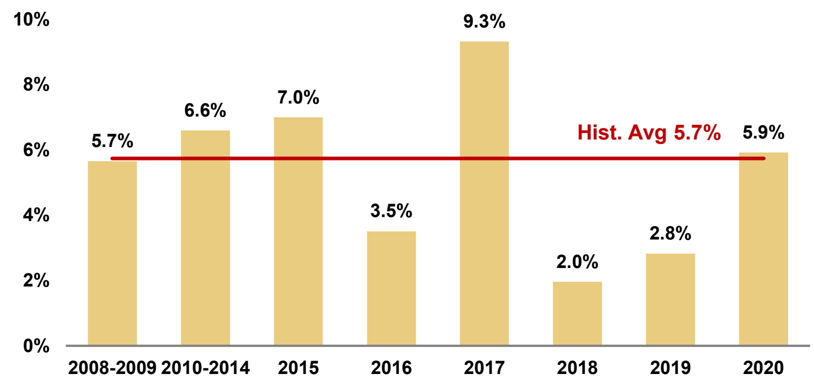
Source: Morningstar Direct, Morgan Stanley Research; Note: left US charts as of Mar 2021, right Europe charts as of Feb 2021

Industry flows steady in 2020 and Passive market share continues to rise in the US… Equity at 50% currently, up from 30% in 2010

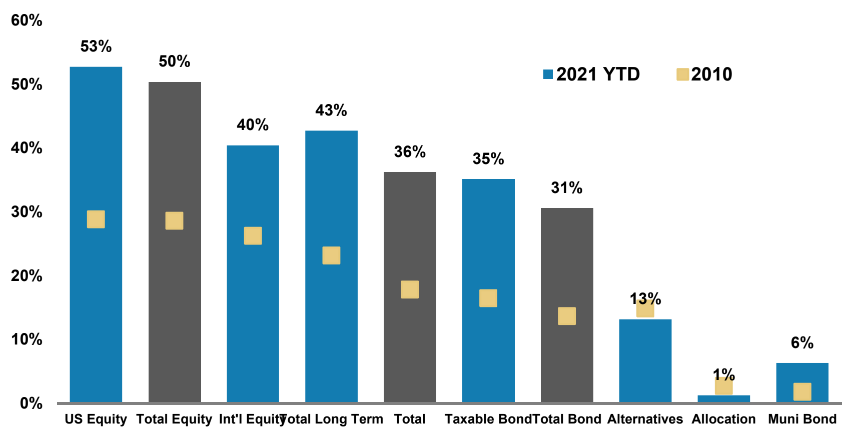
US MF + ETF Organic Growth (%)



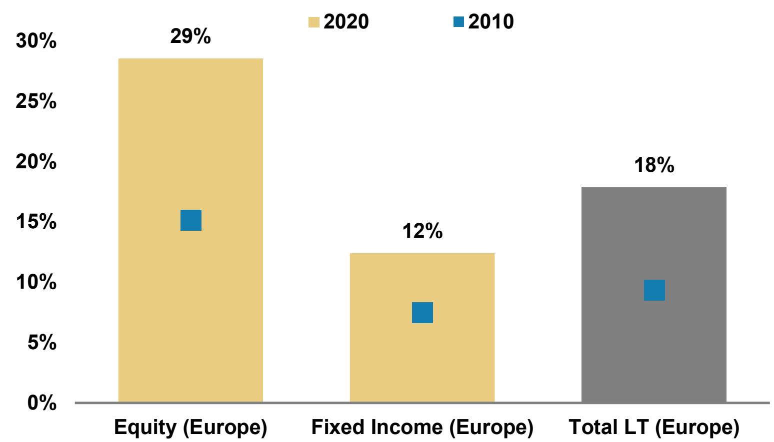
Europe MF + ETF Organic Growth (%)



US Market Passive Market Share as a % of Total MF + ETF AuM (%)



Europe Market Passive Market Share as a % of Total MF + ETF AuM (%)



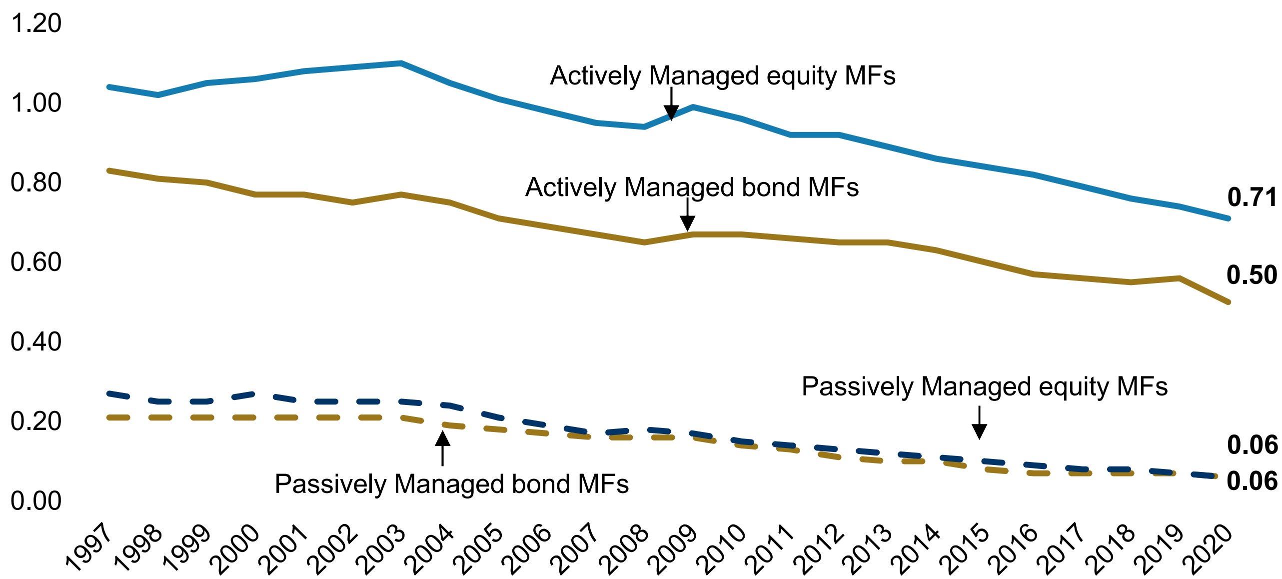
Source: Morningstar Direct, Morgan Stanley Research; Note: Historical average since 2000 for US and since 2008 for Europe; Data through March 2021 for US, Dec 2020 for Europe. Includes US Domiciled active and index MFs and ETFs and Europe Domiciled active and index MFs and ETFs. Note that Morningstar ETF data for Europe ETFS is as of 2008. Organic growth rates include money market flows; Note: Passive Market share data through March 2021 US, Dec 2020 for Europe

Challenge 3: Fee pressure remains a headwind for asset managers

Growth of passives, combined with lackluster active management performance have contributed to fee rate headwinds. Our collaborative work with quant team finds that mgmt fees are not the most important drivers of fund flows. Rather, strong fund performance, and 5-star funds in particular, help to defend economics.

Active equity mutual fund expense ratios have fallen more than 30 bps since 1997, 10 bps since 2015, and 5 bps since 2018

Expense Ratios of Actively Managed and Index Mutual Funds (%)



See our report here: Asset Management: What Drives Flows? Fresh Insights from Machine Learning (12 Dec 2019)

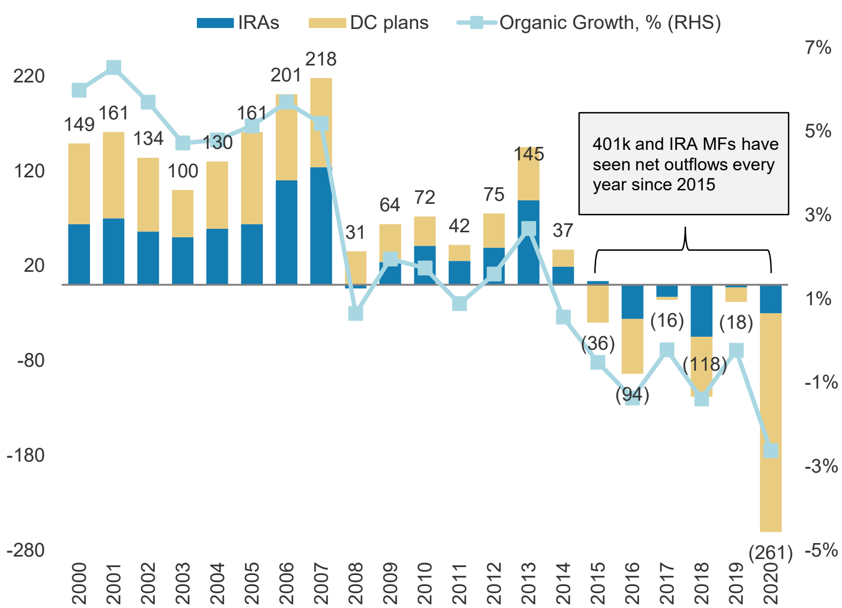
Source: ICI, Lipper, Morningstar, Morgan Stanley Research
Note: Expense ratios are measured as asset-weighted averages,

Challenge 4: Demographics – Baby boomers

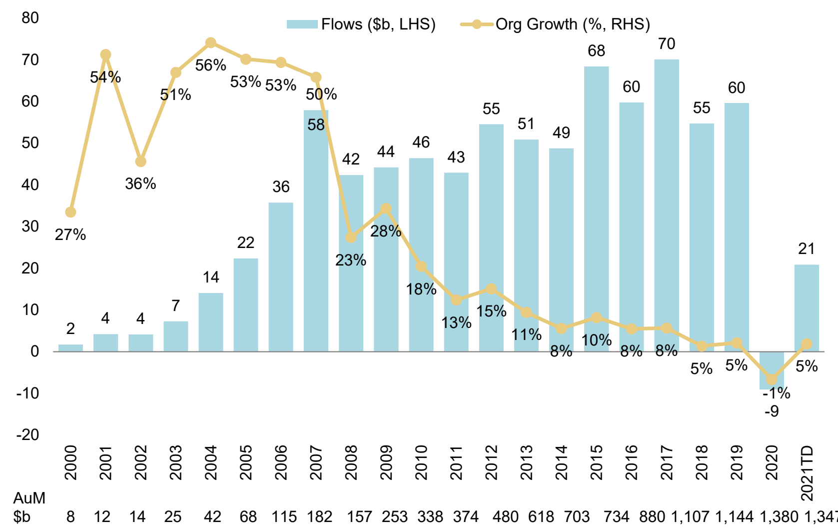
Ageing demographics mean >65 age group increasing from 16% of population in 2010 to 26% 2050 for DM – headwind to retirement asset growth and increasing focus on solutions based products

Baby boomer distributions could weigh on retirement asset growth

DC and IRA net flows in Mutual Funds ($10 Trillion Market)



US target date flows

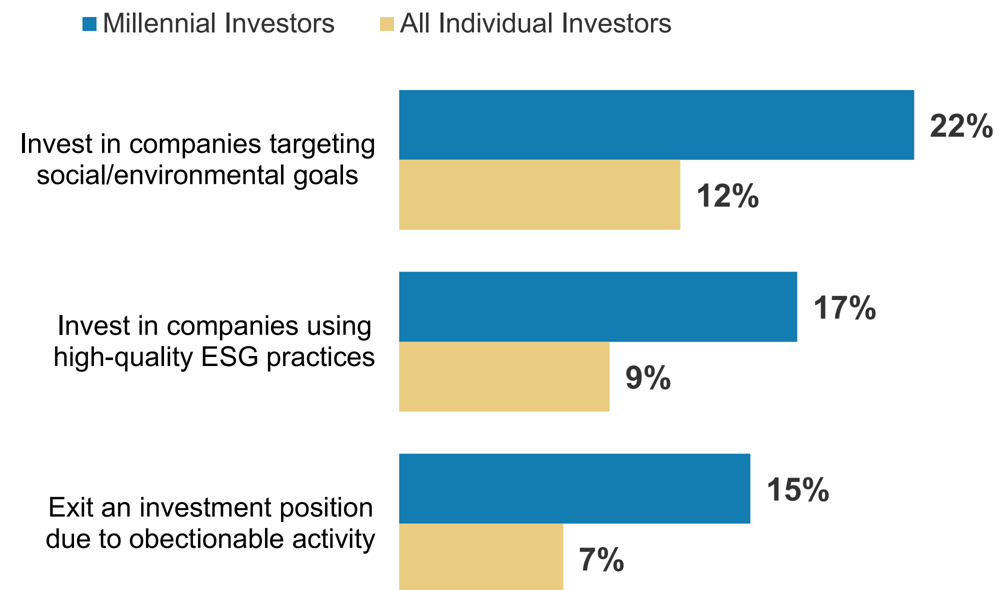


Source: (for left chart) ICI, Morgan Stanley Research, data as of Dec 2020; (for right chart) Morningstar Direct, Morgan Stanley Research, data as of Mar 2021

Challenge 4 (*continued*): Demographics – Millennials tend to focus more on sustainability than previous generations

- **Greater chance for disruption across value chain:** 67% of millennials say they would try financial services from brands they trust, e.g. Nike, Google, Apple according to a LinkedIn survey
- **Company ESG policies top of mind for Millennial consumers:** Millennials are twice as likely to purchase from a brand because of the company's social and/or environmental impact
- **Millennials show strong interest in sustainable investing:** 84% of Millennial investors are interested in sustainable investing, according to a Morgan Stanley report

Millennials are 2x more likely to invest in companies or funds that target specific social or environmental outcomes



See report from Morgan Stanley's Institute for Sustainable Investing: **Sustainable Signals: The Individual Investors Perspective**

Source: Morgan Stanley Institute for Sustainable Investing, "Sustainable Signals: The Individual Investor Perspective"

Challenge 5: Technology
Software-driven disruptors (Robo Advisors) undercutting incumbents' fees

- **Robos deliver mass customization,** essentially a separately managed account that historically was only available to HNW clients with tax loss harvesting and direct index replication strategies
- **Opportunity:** expands universe of consumers that can be served by the industry
- **Risks:** disintermediates active managers and provides new distribution channel for ETFs

See Morgan Stanley report: **Robo-Evolution, One Year Later**

Name:	**Type, Account Minimum, and Typical Fees**	
Vanguard	**Access to Team of FAs**	$50,000 I 30bps
	Dedicated FA	$500,000 I 20bps
Schwab	**Digital**	$5,000 I 0bps
	+ Human FA	$25,000 I $300 + $30/mo
Betterment	**Digital**	$0 - $2M I 25bps
	+ Human FA	$100,000 I 40bps
Personal Capital	**Digital**	$0 I 0bps
	+ Human FA	$100,000 I 79bps

Leading Robo Advisors have a long runway for growth

Largest Robo Advisors					
Name	**AuM ($B)**	**Mkt Share**	**Typical Fee (bps)**	**Account Minimum**	**Human Advisor**
Vanguard	161.0	16%	30	$50,000	$50,000
Charles Schwab	41.0	4%	0	$5,000	$25,000
Betterment	22.0	2%	25	$0	none
Wealthfront	21.0	2%	25	$500	$25,000
AMTD Essential Portfolios	19.9	2%	30	$0	$10,000
Personal Capital	12.3	1%	69-89	$100,000	included
Core Portfolio (ETFC)	6.2	1%	30	$5,000	
Wealthsimple	5.0	1%	0-50	$0	
Ally Invest	4.7	0%	0-30	$100	
Blooom	3.5	0%	$10/mo	$0	
Future Advisor (BLK)	1.1	0%	0-50	$10,000	
M1 Finance	1.0	0%	0	$100	
United Income	0.7	0%	50	$10,000	
Asset Builder	0.7	0%	25-48	$50,000	
Rebalance IRA	0.5	0%	50	$100,000	
Acorns	0.5	0%	$1/mo+	$0	
Ellevest	0.4	0%	25	$0	
Fidelity Go	0.2	0%	35	$0	
WiseBanyan	0.2	0%	25	$1	
Liftoff	0.2	0%	40	$5,000	
SigFig	0.1	0%	25	$2,000	
Zacks Advantage	0.1	0%	35-70	$25,000	
Top 22 Subtotal	**302.4**	**30.6%**			
US Industry Total	**987.5**				
EU Robo Advisors					
Nutmeg	£1.5bn		45-75	£500	
Scalable Capital	€1.5bn		75	£10,000	
Moneyfarm	£400m		70	£500	
Money on Toast	£350m		NA	NA	
Wealth Horizon	NA		~122	£1,000	

Source: Multiple Sources, Morgan Stanley Research; data as of August 2020 or latest available; US industry total sourced from https://www.investopedia.com/robo-advisors-2019-where-have-all-the-assets-gone-4767826

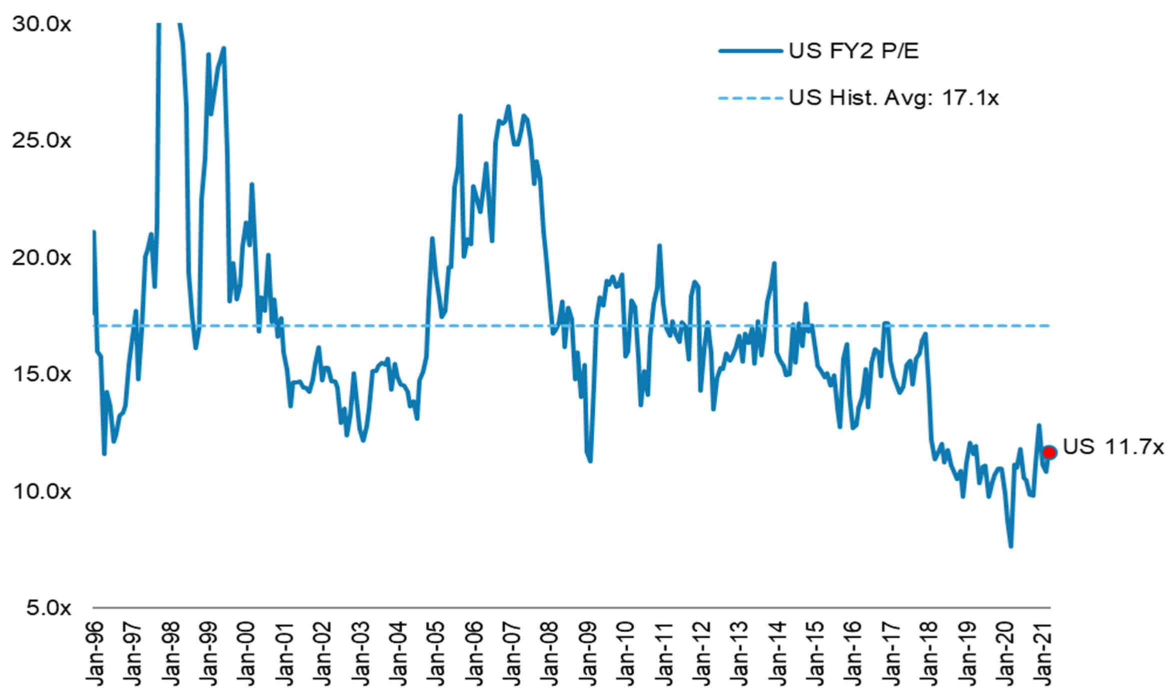
Charting a Course to Growth

Asset Managers: What's on Your Growth Agenda?

The problem: Valuations have made new recent lows. Perceptions have shifted such that asset managers are no longer viewed as growth companies. Further, we expect core active revenue pools to shrink over the next five years. In a number of cases we view the ex-growth label as merited; accessing growth pockets is key.

Forward PE valuations suggest global asset managers are no longer perceived as growth stocks…

US Forward P/E Multiples (Absolute)



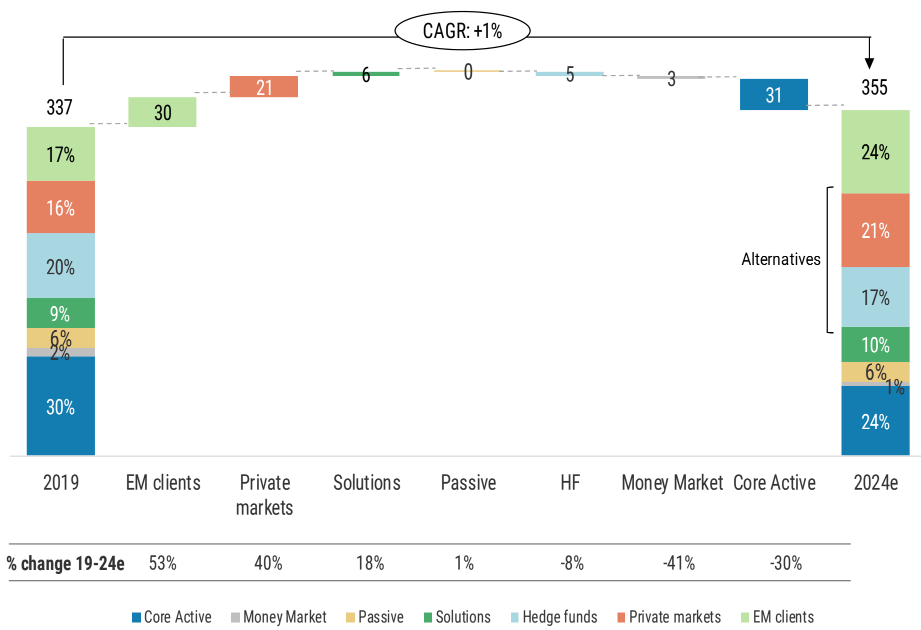
Source: Morgan Stanley Research as of Mar 31, 2021
Note: US covered traditionals exclude WETF and VCTR

Overall industry revenue growth a modest 1% CAGR, though pockets such as EM and private markets developing faster, and active resurgence encouraging

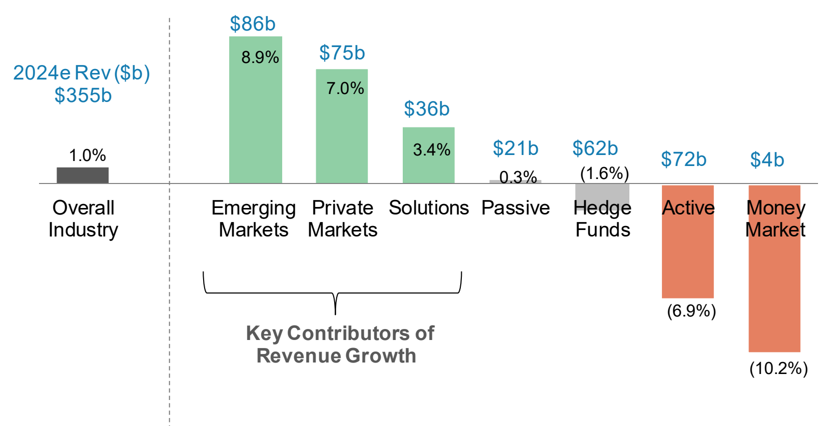
Our 5-year view sees asset management revenues growing at a modest ~1% CAGR; however, we expect three areas to see strong growth, comprising >55% of total industry revenues by 2024. **We look to: 1) EM/China, 2) Private Markets and 3) Solutions for a revenue CAGR of 3-10% in 2019-24.**

We see core Active under fee pressure, though a path to growth for players able to leverage ESG/Thematics and compelling performance.

Global Revenue Composition - base case, 2019 – 2024e, USD BN



Revenue CAGR (2019-2024e)



Source: Oliver Wyman analysis, Morgan Stanley Research estimates (e)

1) Onshore EM/China remains key growth opportunity – we see a 9% revenue CAGR growing to $86bn revenue pool by 2024

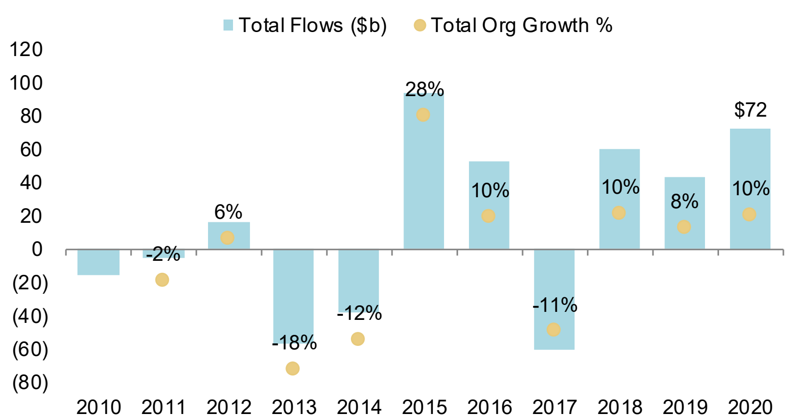
Despite some uncertainty on timeframe for success and on the ability of Western firms (particularly US firms) to access markets given geopolitical/trade tensions, firms view China as too big an opportunity to ignore. We see ~9% CAGR in revenues to 2024.

Recent progress: 4Q20 operational launch of **Amundi** 55%-owned JV with Bank of China Wealth Management, targeting €60bn AuM and €50m net income by 2025; **Schroders'** 51%-owned Schroders BOCOM Wealth Management established Feb 21, with business activities to commence 4Q21; **BlackRock** received approval in Aug 20 to launch a wholly-owned mutual fund business in China; **T. Rowe** opened an investment research office in Shanghai in Mar 21, after establishing a wholly-foreign owned enterprise in Dec 20.

Growth is accelerating in onshore China, with $72bn of net inflows in 2020 (excl. money market funds). Overall China-domiciled mutual funds are growing at 28% CAGR (2017-20), which we believe is sustainable. 2020 has been a breakout year, with AUMs up +70% y/y and now at $1.2Tr. Despite trade tensions and geopolitical risks, we would still expect to see a number of large Western firms moving forward to increase their stakes in local JVs and launch new products.

$72bn of Inflows in 2020 to China MFs (excl. Money Market) … Strongest Year of Inflows Since 2015

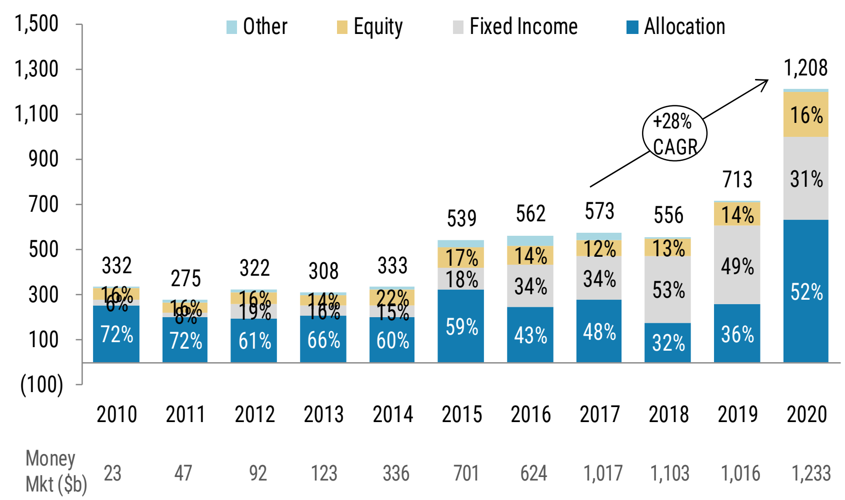
China Open-End Funds - Total (excl. Money Market) Flows ($b)
AUM tracked: $1.2Tr



Source: Morningstar, Morgan Stanley Research; Note: Data as of Dec 31, 2020

China Open-End Funds Growing at 14% CAGR: AuM Composition (excl. Money Market Funds)

China Open-End Funds - Total (excl. Money Market) AUM Composition ($b)
AUM tracked: $1.2Tr



2) Private Markets growth persists, underpinned by durable allocations story and low rates. We see a 7% revenue CAGR growing to $75bn rev pool by 2024

We expect currently 'under-allocated' segments to increase their allocations to private markets and drive the majority of private market AuM growth.

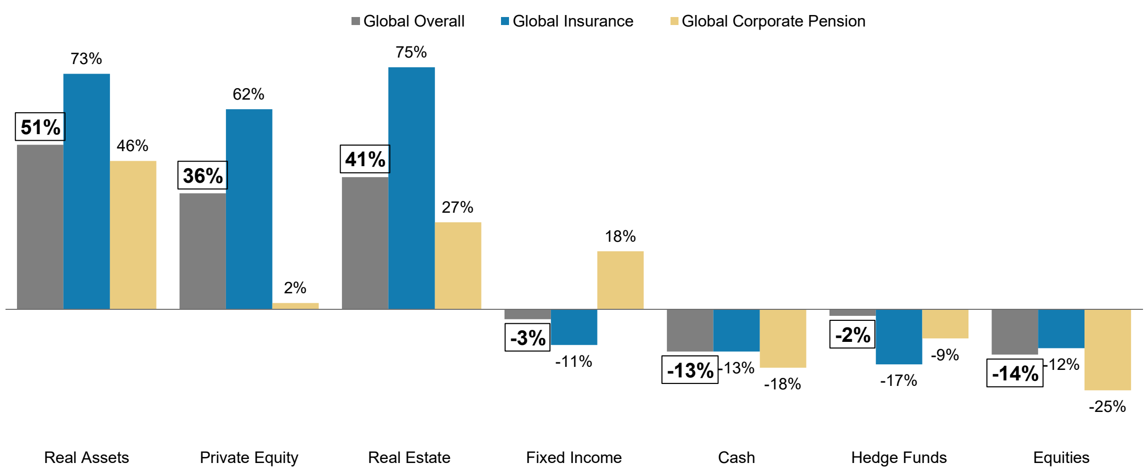
Global economic recovery is most supportive for private markets as portfolio risks moderate, and given the flexibility provided by dry powder (to address portfolio issues, take advantage of new investment opportunities. We see ongoing allocations supported by persistent low rates. Thus, we expect a private market revenue CAGR of 7% in 2019-24.

Growth Drivers

- **Low interest rates** incentivizing longer-duration investing to achieve targeted returns
- **Outperformance** vs public markets
- **Smoother ride** with lack of mark-to-mark accounting risk than public market investing, which results in less volatility
- **Diversification** with lower correlation to public markets
- **Access** to small enterprise value companies

35-50% of global institutional investors anticipate increasing allocations to real assets, private equity, and real estate, and 14% expect to decrease allocations to equities

Institutional Investor Survey: In 2020, How Do You Anticipate Changing Your Allocations to the Following?



Net %'s represent a net percentage intending to increase or decrease allocations to each asset class. (Calc: % of firms intending to increase - % of firms intending to decrease).

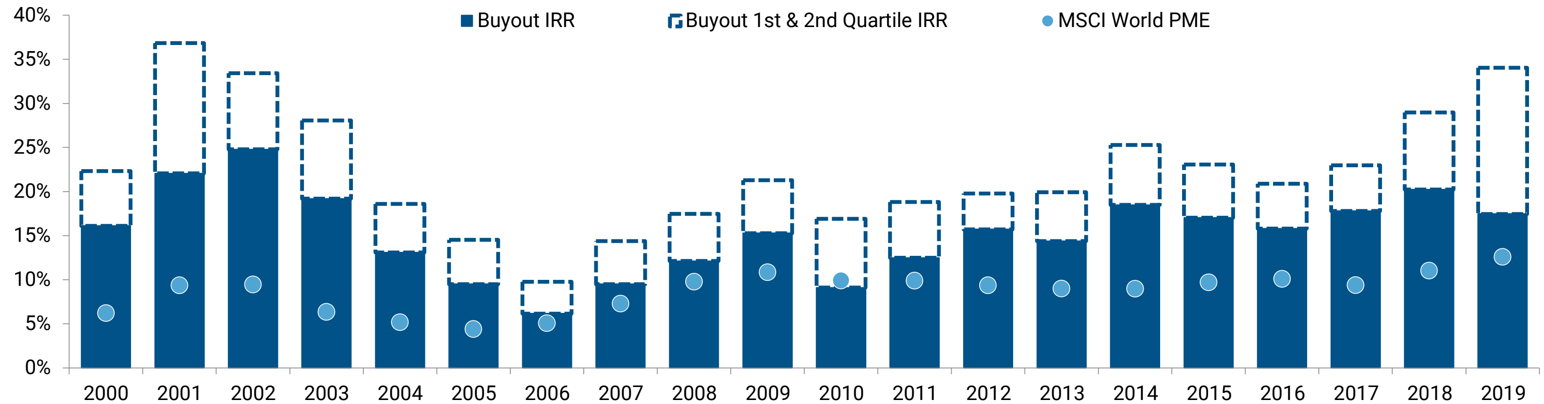
Source: BlackRock's 2020 and 2019 Institutional Survey Results. Clients were surveyed over a 4-week period from Nov to early Dec; 2020 survey comprises of over 271 institutional clients representing over $9.8tn investible assets; Note: Net percentages represent a net percentage intending to increase or decrease allocations to each asset class. (Calculation: % of firms intending to increase - % of firms intending to decrease).

2) … Significant customer demand driven by outperformance vs public markets

With good manager selection, investors could significantly outperform average private market returns. Private equity has outperformed public markets on average by 662bps, and private credit by 480bps

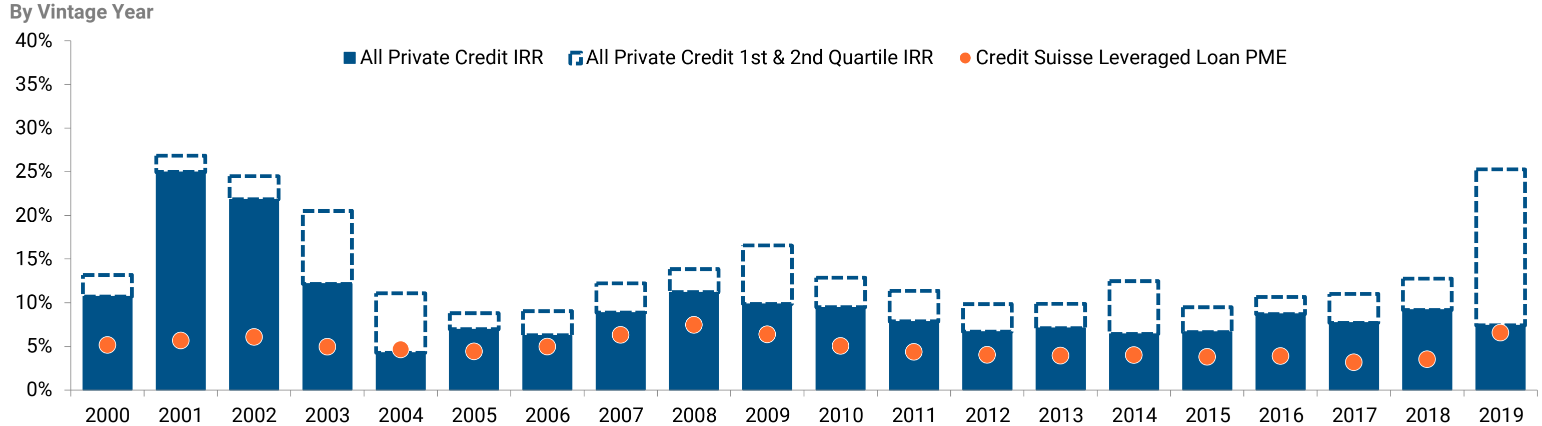
Buyout IRR vs. PME

By Vintage Year



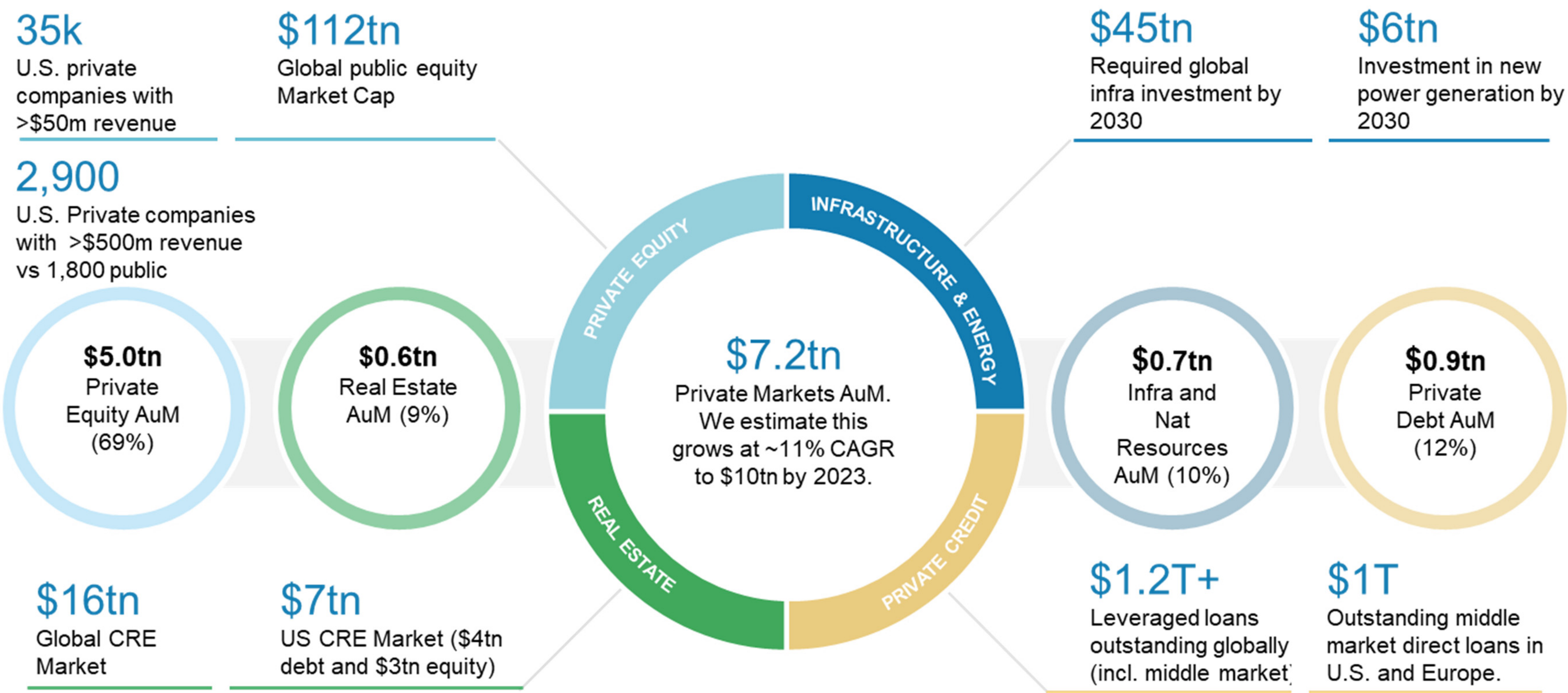
Private Credit IRR vs. PME

By Vintage Year



Note: Each year represents performance of a specific vintage year. Source: Hamilton Lane data as of 9/30/2020,Bloomberg, Morgan Stanley Research

2) Private market deployment with room to run: significant opportunities in addressable markets



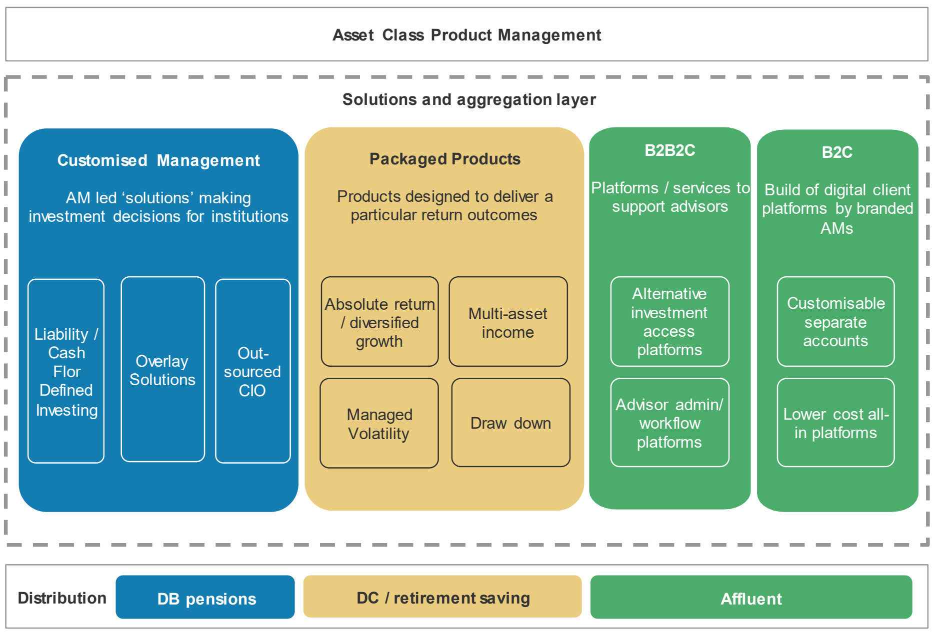
Note: Private equity and private markets aggregate AUM includes $777B AuM from Fund of Funds, Secondaries, and Co-investment strategies. Source: Ares Investor Presentation, Bloomberg, REIT.com, Brookfield Operating Briefing (2018), Ares Direct Lending White Paper (2018), Ares Alternative Credit White Paper (2018), PWC, LSTA, McKinsey Bridging Global Funding Gaps (2016), Cobalt, Pitchbook, Cobalt as of 9/30/20, Morgan Stanley Research estimates

3) We expect Solutions to grow at ~3.5% CAGR to a $36bn revenue pool by 2024, supported by structural and demographic shifts in pension markets.

Near-zero rates, a major challenge for investor returns, are supporting demand for a broader range of risk premiums and solutions that can facilitate access to them. To capitalize on the solutions opportunity, investment in technology and data will be key to delivering value-added analytics and packaged products.

A fought-over 'aggregation' layer has emerged, blurring the line between manufacturing and distribution, offering new areas for managers to compete in

Example of services in the emerging solutions layer



Source: Oliver Wyman analysis, Morgan Stanley Research estimates (f)

5 Keys to Expanding Market Share

Focus on Taking Market Share as Competition Intensifies

Key focus areas for market share expansion

- Innovate with **ESG/Thematics –** redefine the active manager's value proposition
- Enhance **Distribution** – from distribution to client acquisition
- Embrace **Strategic M&A** – to access new customers/channels, and expand the product toolkit and improve scale
- Address the **Cost Base** to unlock resources for growth
- Evolve the investment process using **Quant / Alternative data**

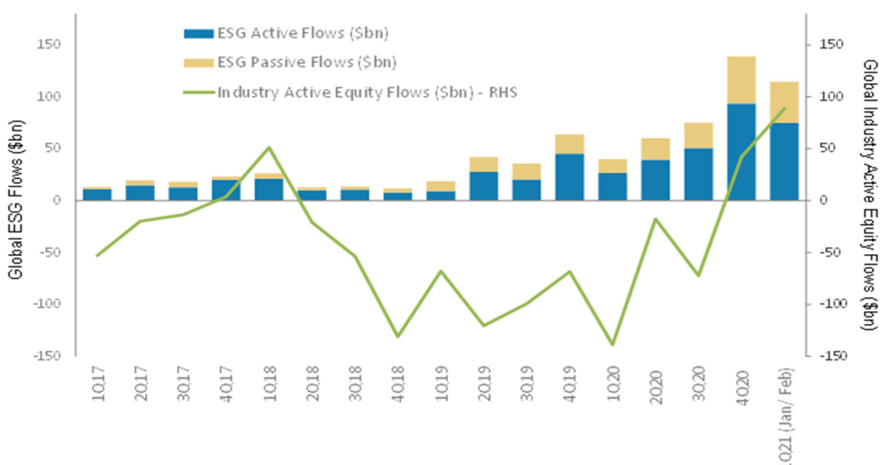
Source: Morgan Stanley Research

1) Innovate with ESG – redefine the active manager's value proposition

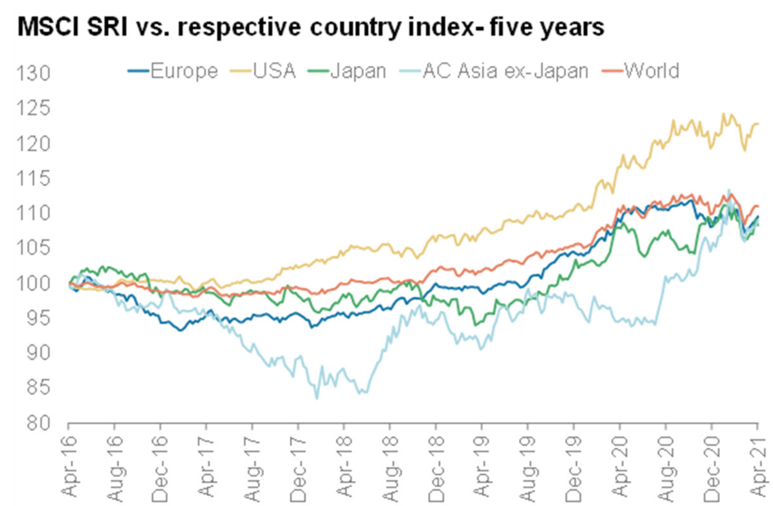
Greater focus on stewardship could prove a winning strategy to combat relentless pressure from ETFs/Passives – we see an opportunity for active managers to redefine their value proposition:

- **Pursue the stewardship role** more effectively and more energetically by embracing ESG/SRI;
- **Target millennials with ESG/SRI,** communicating the importance of stewardship and governance, including the positive impact this has on society;
- **Analysts can boost or stabilize financial performance of the fund;**
- **Trend in favor of full ESG integration –** screening and exclusion approaches falling out of favor vs more comprehensive integration into investment process as a way to consider as many risk factors as possible – though asset managers need a spectrum of approaches/products to accommodate different preferences of the client base.

ESG mutual funds have seen 28% NNM growth 2020 and active equity ESG funds ~23% vs active equities -2% redemption rate



MSCI SRI has generally outperformed mainstream indices, particularly over the past year



Source: (for left chart) Morningstar, Morgan Stanley Research; (for right chart) MSCI, Datastream, pricing as of Apr 9, 2021

1) Thematics – often at the intersection with Sustainability, we see active players looking to evolve their offerings as they seek to redefine the value proposition

We see scope for active managers to benefit from a growing client focus on investing to access a range of themes vs legacy product wedded more to geographical/regional delineation. In many cases at the intersection of thematic and sustainable, we expect to see continuing product development focus in this area.

Thematic product features heavily in the 2020 European domiciled active equity leaders table - representing half of the top 20, with Global and China product also well represented….

Branding Name	Fund Name	Global Category	* Rating	AUM Dec-20 (€B)	2020 Net flows (€B)	Org Grw Ann.
Allianz Global Investors	Allianz China A Shares AT USD	Greater China Equity	5	8.9	5.2	400%
BlackRock	BGF World Technology A2	Technology Sector Equity	5	8.8	4.3	231%
Morgan Stanley	MS INVF Global Opportunity Z	Global Equity Large Cap	5	17.1	4.3	50%
BlackRock	BGF World Healthscience A2	Healthcare Sector Equity	4	9.0	3.8	78%
Morgan Stanley	MS INVF Asia Opportunity Z	Asia ex-Japan Equity	5	5.8	3.5	264%
Pictet	Pictet - Global Envir Opps I USD	Global Equity Large Cap	5	6.1	3.3	176%
JPMorgan	JPM China A-Share Opps C (acc) EUR	Greater China Equity	4	4.1	3.1	990%
UBS	UBS (Lux) ES All China (USD) P acc	Greater China Equity	n.r.	3.5	2.7	588%
Link Group	LF ACCESS Global Alpha Equity A Inc	Global Equity Large Cap	n.r.	2.6	2.6	na
Capital Group	Capital Group New Pers (LUX) ZL	Global Equity Large Cap	5	9.5	2.6	50%
Allianz Global Investors	Allianz Global Artfcl Intlgc W EUR	Technology Sector Equity	5	6.3	2.6	158%
Robeco	Robeco Global Consumer Trends D €	Global Equity Large Cap	5	7.4	2.6	81%
Nordea	Nordea 1 - Global Climate & Envir BI EUR	Global Equity Mid/Small Cap	5	5.5	2.3	95%
UBS	UBS (Lux) EF China Oppo(USD) P USD acc	Greater China Equity	5	12.3	2.2	27%
Vontobel	Vontobel mtx Sust EmMkts Ldrs I USD	Global Emerging Markets Equity	5	7.6	2.2	46%
PHOENIX GROUP	PUTM Bothwell UK All Share Lstd Eq B Acc	UK Equity Large Cap	n.r.	4.0	2.1	106%
Goldman Sachs	GS Global Ftr Tech Ldr Eq I USD Acc	Technology Sector Equity	n.r.	3.0	2.1	na
Handelsbanken	Handelsbanken Hållbar Energi A1 SEK	Energy Sector Equity	5	3.5	2.0	450%
Polar Capital	Polar Capital Global Tech Inc	Technology Sector Equity	4	7.1	1.9	59%
Veritas Asset Management	Veritas Asian A GBP Inc	Asia ex-Japan Equity	5	6.2	1.9	72%
			Top 10	**75**	**35**	**138%**
			Top 20	**138**	**57**	**105%**
			Industry	**2651**	**158**	**7%**

….how one Europe-based player is evolving its product offering to provide a strong array of thematics…

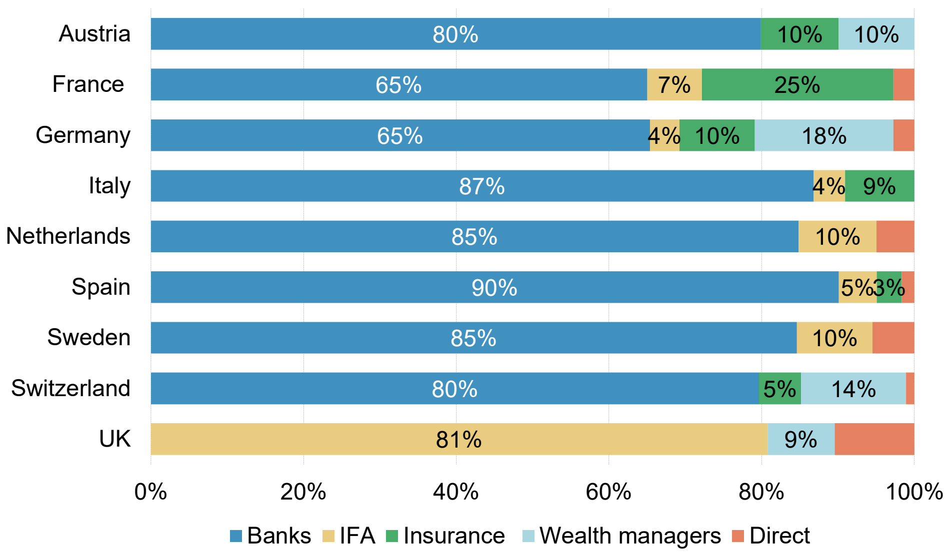
Source: (for left chart) Morningstar, Morgan Stanley Research; (for right chart) Schroders company data

2) Enhance distribution – from distribution to client acquisition

Focus more on lifetime client relationship and solutions vs. products, given that churn rates imply low lifetime value. **Changing nature of distribution**: Retail is becoming more institutional, with gate-keepers raising the bar; European market has seen gradual shift to open architecture via distribution platforms.

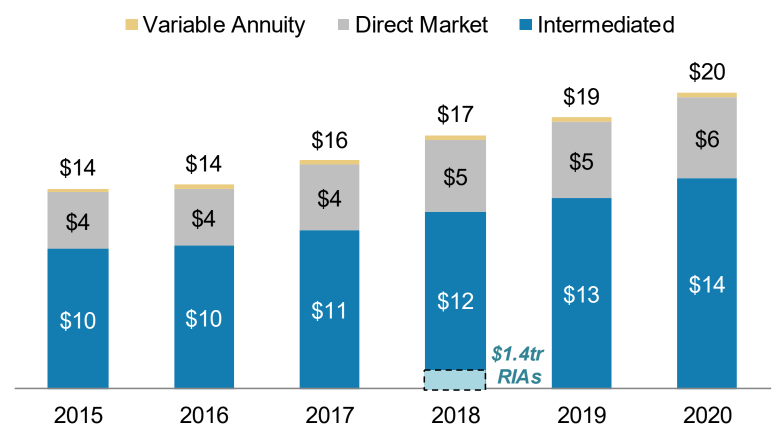
Banks' control of distribution is key difference in Europe vs UK/ US

Who controls retail fund distribution in Europe?



In the US, ~27% of retail mutual fund assets are held in direct market, while 70% are intermediated

US Mutual Fund Retail AUM by distribution channel ($Tr)



Source: (for left chart) FTFM, 2nd October 2017, Platforum (for right chart) Morningstar, Morgan Stanley Research, data as of June 30, 2020

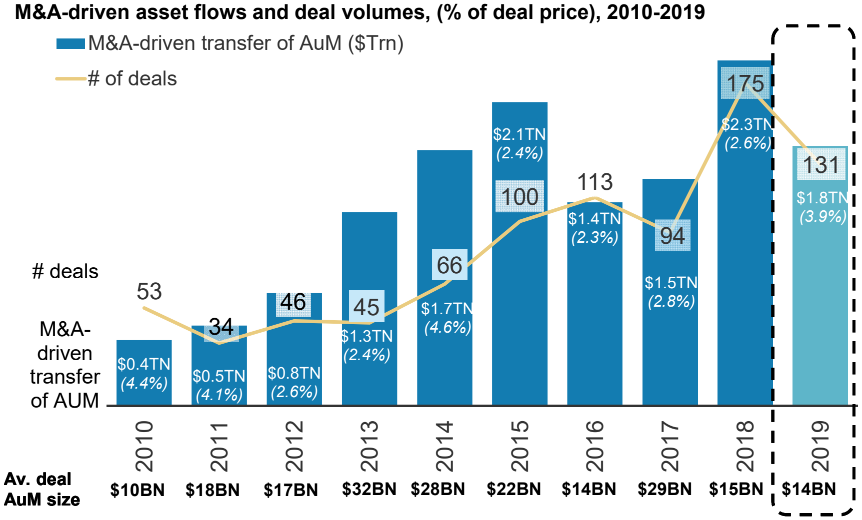
3) Embrace Strategic M&A – to access new customers/channels, expand the product toolkit and improve scale

Drivers of consolidation

1. **Extending skill set in private markets, ESG/impact investing**
    - PE (Schroders-Adveq, ARES-Landmark Partners)
    - Private credit (Brookfield-Oaktree, Franklin-Benefit Street, BlackRock-Tennenbaum)
    - Infrastructure (BlackRock-First Reserve Energy Infrastructure)
    - Real estate (Legg Mason-Clarion Partners, Schroders-Alonquin, Schroders-Blue Asset Management, SLA-Tritax)
    - Impact investing/sustainability (Schroders-BlueOrchard, Federated Investors-Hermes, Victory-THB, AMG-Boston Common)
2. **Scaling**
    - Traditional (Virtus-AGI US Retail, Macquarie-Waddell & Reed, Janus-Henderson, Standard Life-Aberdeen, Invesco-Oppenheimer, Jupiter-Merian, Natixis-La Banque Postale)
    - Passives/ETF (Invesco-Source, Invesco-Guggenheim, WisdomTree-ETF Securities, Amundi-Lyxor)
3. **Technology-driven deals to improve distribution or tune up investment engine**
    - Customization/SMAs (BlackRock-Aperio, JPM-55ip)
    - Roboadvice/Distribution (Franklin-Advisor Engine, BlackRock-FutureAdvisor, Legg Mason-FinancialGuard)
    - Machine learning (Victory Capital-Cerebellum learning)
    - Alternative solutions (BlackRock-eFront)
4. **Enhancing distribution capabilities**
    - Geographical scope (Amundi-Pioneer, BlackRock-Banamex, Virtus-AGI, Amundi-Sabadell)
    - Complementary in retail (Virtus-Ridgeworth)
    - Direct to consumer (Victory-USAA)

Post-crisis deals have typically been struck in the 8-12x EV/EBITDA range, though as low as 4x for growth impaired, and as high as 16x for strong growth

M&A-driven asset flows and deal volumes, (% of deal price), 2010-2019

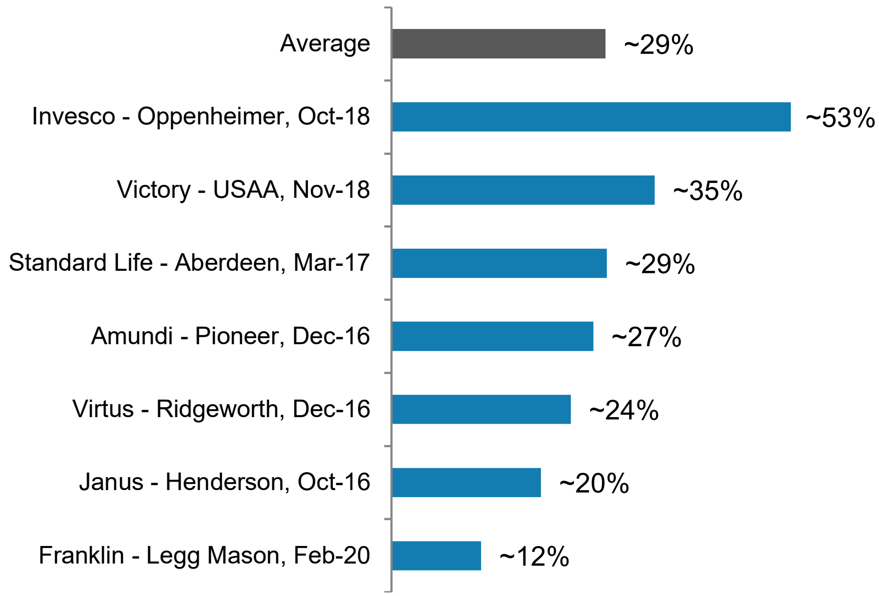


Source: Company Data, Morgan Stanley Research; data as of Dec 31, 2019

3) Scale deals can deliver substantial cost saves but overlapping capabilities, weak performance and consultant responses can drive revenue attrition

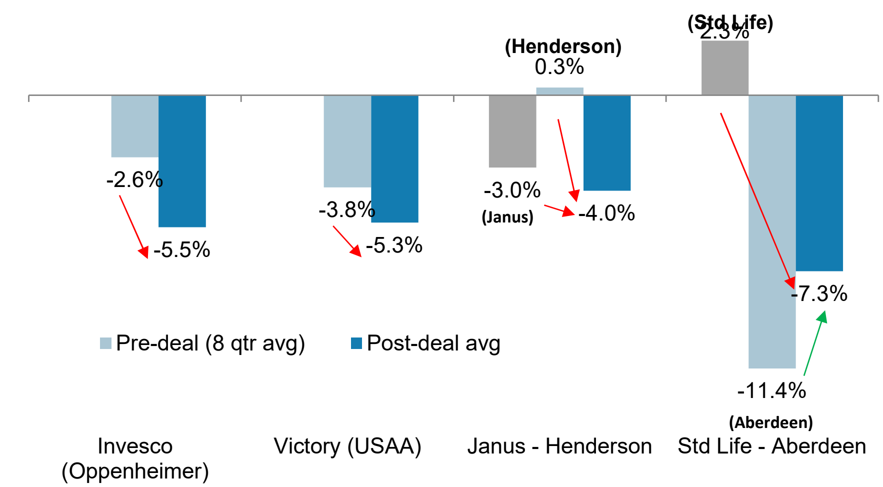
Attractive cost synergies; Nearly ~30% of acquired cost base taken out from prior deals on average

% of Acquired Costs Taken Out in Prior Deals



Revenue outcomes mixed; Comparison of Net New Money growth rates pre and post deal highlight the challenges

Organic Growth (Quarterly LT annualized, pre and post-deal avg)



Source: Company Data, Morgan Stanley Research. Note: 1) based on targeted expense synergies announced before close, 2) reflects our estimates for acquired costs base and combined costs base for the year announced, 3) Standard Life Aberdeen expense synergies target of £200M converted to USD based on historical FX rate Mar 31, 2017 4) Amundi expense synergies target €150m converted to USD based on historical FX rate Dec 31, 2016

3) The best deals expand the product set and extend distribution

In our October 25, 2020, note The Case for Consolidation, we looked at the asset management ecosystem – identifying how companies stack up; Who has excess capital to invest? Which firms have niche products or unique offerings?

Asset Managers

1 Strong Excess Capital

TROW, SDR, SLA, AMUN

2 Niche Product Providers/ Differentiated Distribution

BSIG, VRTS, VCTR, WETF, ASHM, EMG, MFG
APAM, AMG, FHI, CNS, AZM, AZIHF

3 Private Market Managers

APO, ARES, CG, BX, KKR, HLNE, STEP, EQT, PGHN, MQG, AMP, BAM, ONEXF, ICP, TKO, GCMG

4 Diversified Money Managers

BLK, IVZ, BEN, DWS, JHG, MNG, AB

Banks/Brokers/Others

Banks With Excess Capital

JPM, GS, BK, STT, NTRS, UBS, CS, MDBI

Retail Distribution/Tech

SCHW, LPLA, RYF, SJP, HGRV, SEIC,
IBKR, FOCS, AMK, ENV, AJB, QLT

Black Ticker = covered by Morgan Stanley; Purple Ticker = non-covered

Note: please see our report, The Case for Consolidation, published on October 25, 2020, for more information. In the note, we analyze regional differences, business models & merger history, and assess hypothetical strategic deals that could potentially enhance growth profiles. Note: We are not aware of any deal discussions, and to our knowledge none of these companies has commented on potential M&A. The analysis in the note is hypothetical and does not factor in any company's willingness to participate in M&A. Source: Company Data, Morgan Stanley Research

3) Precedent M&A transactions have struck in 8-13x EBITDA range, ~10x avg

Year	Date Announced	Buyer Name	Target Name	AUM ($Bn)	Purchase Price $MM	Deal Value/ AUM	EV/EBITDA Multiple Paid
2021	Apr-21	Amundi SA	Lyxor	147	981	0.67%	15.0x
2021	Mar-21	Ares Management	Landmark Partners	18	1,008	5.48%	12.0x
2021	Feb-21	GTCR, Reverence Capital Partners	Wells Fargo Asset Mgmt	603	2,100	0.35%	N/A
2020	Dec-20	Macquarie	Waddell & Reed	66	1,700	2.12%	6.5x
2020	Jul-20	Perpetual	Barrow Hanley	44	320	0.73%	8.0x
2020	Feb-20	Franklin Resources	Legg Mason	800	4,500	0.71%	9.0x
2020	Feb-20	Jupiter Fund Management	Merian	29	481	1.68%	6.0x
2020	Jan-20	Amundi SA	Sabadell Asset Management	24	477	1.95%	N/A*
2019	Mar-19	Brookfield Asset Management	Oaktree Capital Management	120	4,800	6.45%	9.7x
2018	Nov-18	Victory Capital Management	USAA Asset Management	69	1,000	1.23%	8.1x
2018	Oct-18	Franklin Resources	Benefit Street Partners	26	683	2.63%	11.8x
2018	Oct-18	Invesco	OppenheimerFunds	250	5,714	2.32%	10.2x
2018	Apr-18	Federated Investors Inc.	Hermes Investment Management	47	350	1.24%	12.8x
2018	Feb-18	Virtus Investment Partners	Sustainable Global Advisors	12	130	1.59%	10.6x
2017	Mar-17	Standard Life Plc	Aberdeen Asset Management	382	4,920	1.21%	11.0x
2017	Nov-17	WisdomTree	ETF Securities	18	611	3.47%	16.1x
2017	Sep-17	Invesco	Guggenheim	38	1,200	3.16%	19.6x
2016	Dec-16	Virtus Investment Partners	RidgeWorth Holdings	40	513	1.28%	10.8x
2016	Dec-16	Amundi SA	Pioneer Global Asset Mgmt	234	3,737	1.51%	11.4x
2016	Oct-16	Henderson Group	Janus Capital	190	2,600	1.37%	8.3x
2016	Jun-16	Brightsphere (OMAM)	Landmark Partners	9	465	8.81%	9.0x
2016	Jan-16	Legg Mason	Clarion Partners	42	585	1.76%	10.0x
					Average:	**2.35%**	**10.8x**
					Median:	**1.64%**	**10.4x**

Source: Company Data, Morgan Stanley Research estimates; Note: 1) Consideration for Standard Life/Aberdeen deal based on share price of Standard Life as detailed in Prospectus dated 9 May 2017 implying value of Aberdeen at £3.8bn and converted to USD at hist FX 2) Amundi-Sabadell AM consideration (€430m) and target AUM (€22bn) converted to USD at historical FX at 21/02/2020. EV/ EBITDA multiple N/A, PE multiple ~13x 2020 (without synergies)and ~9x with synergies. 3) Jupiter-Merian consideration (£370m) and target AUM (£22bn) converted to USD at historical FX as of date of announcement 17/02/2020, 4)Brightsphere/Landmark reflects company disclosed purchase multiple of 8-10x which is based on forward EBITDA estimates, 5) Ares/Landmark reflects MS estimated forward EBITDA contribution from Landmark, 6) Macquarie/WDR multiples based on implied sale of asset mgmt business, 7) Amundi/Lyxor deal converted to USD at 4/7/21, 8) transactions reflect company disclosed multiples where available, or MS estimates

4) Address the cost base to compete on price and free up resources for growth… via ‘Build Back Stronger,’ adopting lessons learned from remote working through the pandemic could release 10-15% in savings

The proven viability of operating in a remote working environment is likely to push managers to reimagine their operating model more structurally. Those who choose to permanently adopt operating models that have proven to work through the pandemic will be able to realize 10-15% in costs savings over 3- to 4-year horizon, on Oliver Wyman’s analysis. This includes flexible work arrangements, smaller physical footprint, more virtual touchpoints in sales/marketing, and review of support functions.

According to Oliver Wyman analysis, greater cost savings are possible with a ‘virtual’ asset manager model that could potentially unlock 40% of the cost base. This operating model would envision nearly all staff working remotely, greater use of outsourcing, smaller distribution force, and a lighter human touch investment engine that relies on more automation.

Virtual Asset Manager and potential cost savings

~30% of cost base	~35% of cost base	~35% of cost base
Distribution Sales, marketing/brand and product development	**Investment Management** Research, Portfolio Construction, Trading & Execution	**Middle and Back Office** Administration, risk mgmt. and processing
•API-based connectivity with distributors allowing for personalized managed accounts instead of expensive fund wrappers •Travel and entertainment closed to zero, with brand/marketing loosing importance and allocated budget •Innovation in products/solutions co-sourced through API-developer community	•Research co-owned with data scientists with wide adoption of deep NLP techniques (e.g. BERT) and machine learning •Portfolio management informed by machines, but remains human •Trading and execution outsourced and co-financed through sec lending and liquidity sponsoring / market making	•API-based connectivity with custodians /admins eliminating reconciliation efforts •Operations widely outsourced with regulatory obligations (e.g. reporting) delivery by third party •Performance and risk management through SaaS solutions •Clients with 100% look-through on portfolio with self-service, minimizing client service and communication efforts
→ ~60% cost reduction	→ ~30% cost reduction	→ ~60% cost reduction

→ ~40% lower cost base of virtual AM vs. traditional operating model

Source: Oliver Wyman analysis

5) Evolve the investment process using Quant/Alternative data

Harnessing data and analytics to generate alpha

1. **We see convergence of fundamental and quantitative processes over the next decade** – boosting returns with quantamental approach incorporating vast amounts of new data
   - ~2/3 of investors evolving their investment process to incorporate factors and quantamental

2. **Growing availability of data, including unstructured data can yield insights for those able to process/harness.** Machine learning and AI can help identify reliable patterns
   - >80% of investors identify positive impacts of AI, big data and automation in improving productivity (48%), reducing middle/back office costs (25%), enhancing efficiency or boosting alpha.

3. **Proprietary private market data can improve process & drive alpha** – e.g., by creating customized and real time tracking of macro data points, generating multi-dimensional insights across sectors, geographies, asset classes
   - >2/3 of investors evolving are focused on using big data, with clear intention to increase testing of new data sets, including alternative data.

4. **Opportunity to better monetize proprietary data to clients**

Build (develop/ integrate / invest)

- **BlackRock (Feb-18)** established a BLK **Lab for Artificial Intelligence** in Palo Alto to analyse big data for alpha generation
- **T Rowe (Apr-17)** opened a **Technology Development Centre**, where investment teams partner with data scientists to explore AI, machine learning in investment decision making
- **Man Group (May-16)** financed **centre for machine learning at Oxford University**, accessing quant research/talent pipeline
- **BlackRock integrates data & systematic methods** into fundamental investing under its unified Active Equities Platform
- **Hamilton Lane** initiative to build out a **data management team**, and hiring next generation of talent to build start-up culture

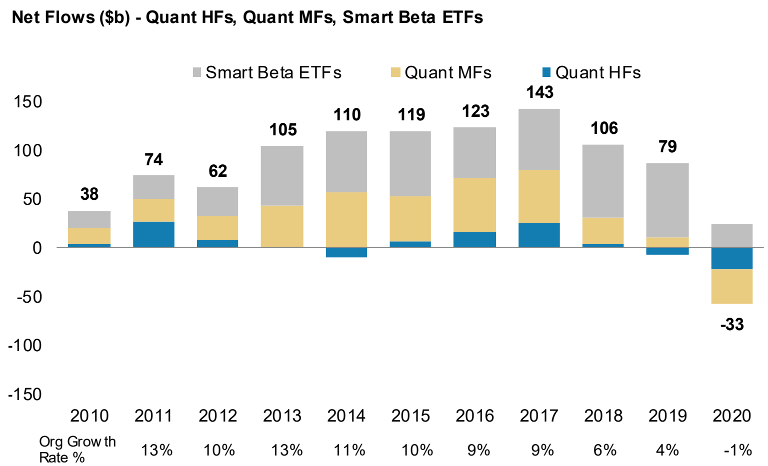
Buy (acquire / partner / onboard)

- **Alliance Bernstein (Jun-20)** acquired **AnchorPath**, adding proprietary, pro-active risk control strategies
- **Prudential PGIM (Nov-18)** quant arm QMA acquired **Wadhwani Asset Management** to build out existing quant
- **Neuberger-Berman (Mar-18)** onboarded **Bretton Hill Capital Team**, focuses on alternative risk premia and multi-factor solutions.
- **Franklin Templeton (Feb-17)** onboarded an **AlphaParity team to run risk premia strategies** for large institutional clients
- **Victory (Dec-16)** acquired **Cerebellum**, an investment management firm specialising in machine learning and AI
- **Alliance Bernstein (Aug-16)** acquired **Ramius Alternative Solutions** adding factor-based and alternative risk premia solutions
- **Man Group (June-14)** acquires **Numeric** adding a range of fundamentally based quantitative strategies

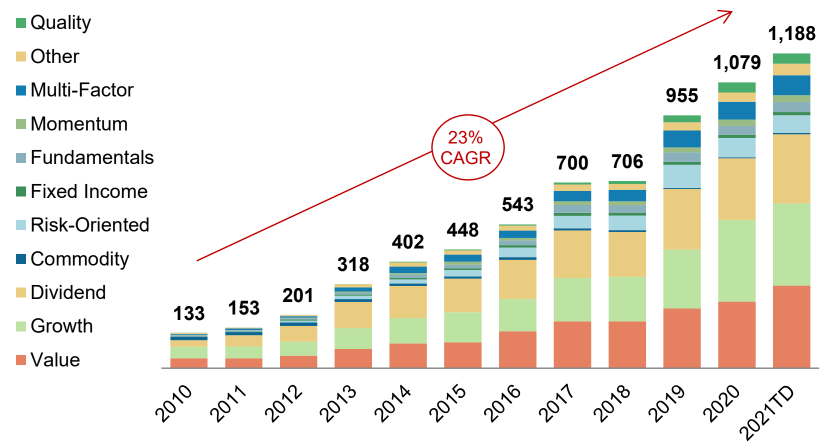
Source: Company Data, Press Releases, Morgan Stanley Research

5) Quant/factor strategies' inflows demonstrated strong growth 2010-17, though there has been some moderation of late, and inflection to outflows in 2020….

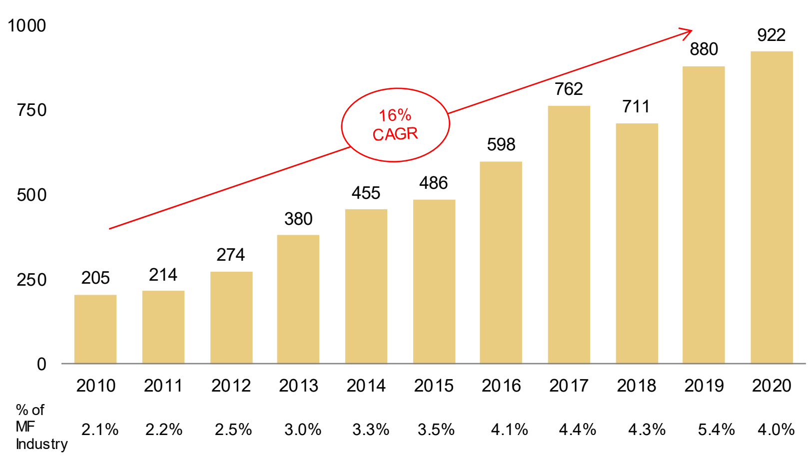
Factor funds inflect to outflows in 2020



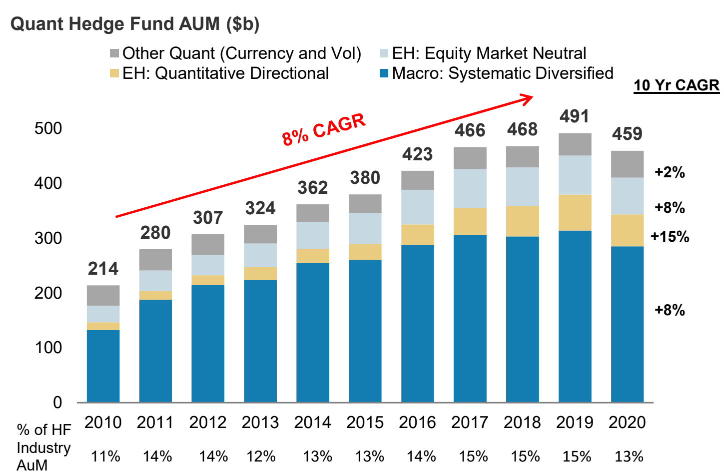
Smart Beta ETF AuM: 2010 – 1Q21 ($bn)



Quant Mutual Fund AuM: 2010 – 1H20 ($bn)



Quant Hedge Fund AuM: 2010 – 2020 ($bn)

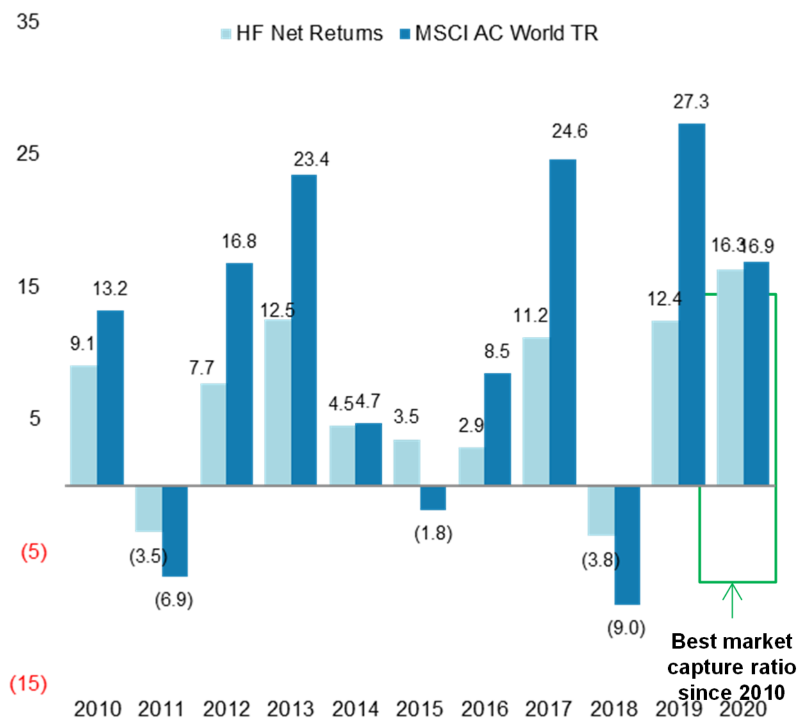


Source: HFR Industry Reports © HFR, Inc. Morgan Stanley Research, Morningstar data as of Dec 31, 2020

5) …though the hedge fund industry appears to have shown relative resilience through the crisis with perf generally healthy in 2020 leading to recovery in flows

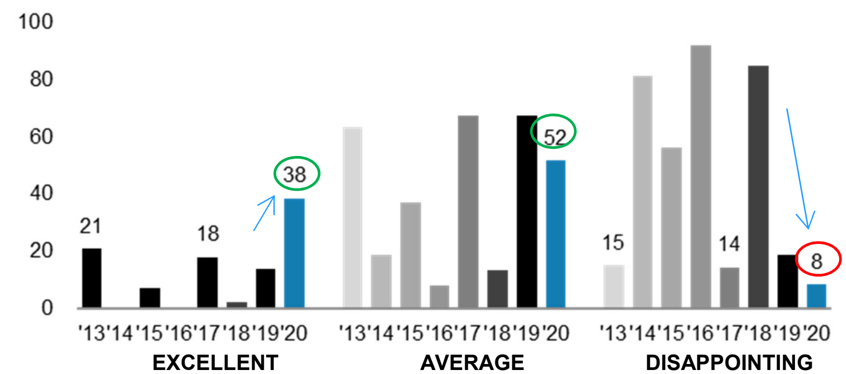
Hedge Funds ended 2020 on high note, capturing almost all of market upside. Investors are also generally happy with 2020 performance, with rise of overall satisfaction sentiment. Flows inflected to positive in 3Q and 4Q 20.

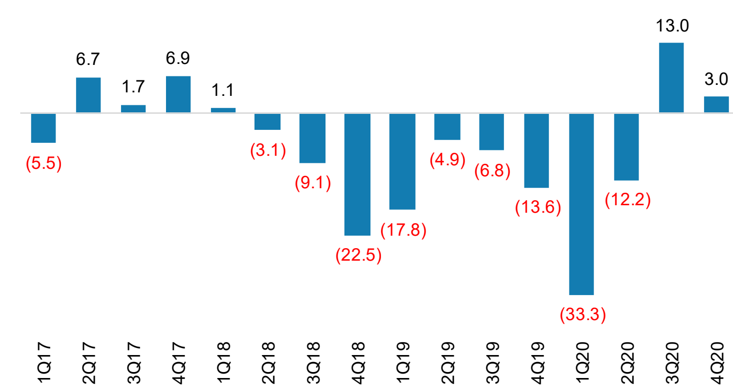
HF's Perform in Line with Broader Market, Representing Best Capture Ratio since 2010



Investors' Assessment of Total HF Industry Perf.[(1)]

% of Investor Survey Respondents By Year





Source: HFR Industry Reports © HFR, Inc. data as of 4Q 2020, (www.hedgefundresearch.com); Bloomberg, Morgan Stanley Prime Brokerage, Investor Surveys 1.Investors surveyed at the end of each year, to determine how they evaluated total HF industry performance through Nov '13, '14, '15, '16, '17, '18, '19, '20 respectively.

Stock Calls

BrightSphere Investment Group Inc. (BSIG, Overweight)

Strong Execution on Strategic Alternatives with Capital Return Approaching

Source: Thomson Reuters, Company data, Morgan Stanley Research.

Price Target — **US$30**

Derived from a 12.0x Base 2022e ENI (and 7.6x target EV/EBITDA), backed by a sum-of-the-parts approach, a premium to historical given accelerating execution on strategic pivot to return capital to shareholders through asset sales and strategic alternatives to unlock value.

Bull — **US$37**

Stronger Inflows in 2022 (+1%). Modest inflows to liquid alpha, strong inflows to Quant/Solutions; sale of two smaller franchises with larger cash pile used to repurchase ~53% of sharecount. Equity mkts +12% NTM, 29% pre-tax margin.

Base — **US$30**

-1% net flows in 2022. Slight outflows from Liquid Alpha and Quant/Solutions strategies. Substantial share repurchases given large $1b cash pile reduces sharecount by ~40%. Equity markets return +6%; pre-tax margin 26%.

Bear — **US$14.50**

-4% net flows in 2022. Outflows across most segments but substantial share repurchases (given large cash pile) at a lower share price for ~50% reduction in sharecount. Equity markets down 20% NTM. Pre-tax margin falls to 18%.

Why Overweight

- Recently announced asset sales give us increased confidence in the bull case and see less downside in the bear case with a substantial (~$1b) cash pile (pro forma for recent Landmark and ICM sales) representing the majority of the market cap.
- Current valuation discount is driven by lack of clarity on intended use of cash and uncertainty on the next step of management's strategy.
- We expect greater clarity on how the company can unlock value from strategic alternatives and a substantial share repurchase plan.

Investment Drivers

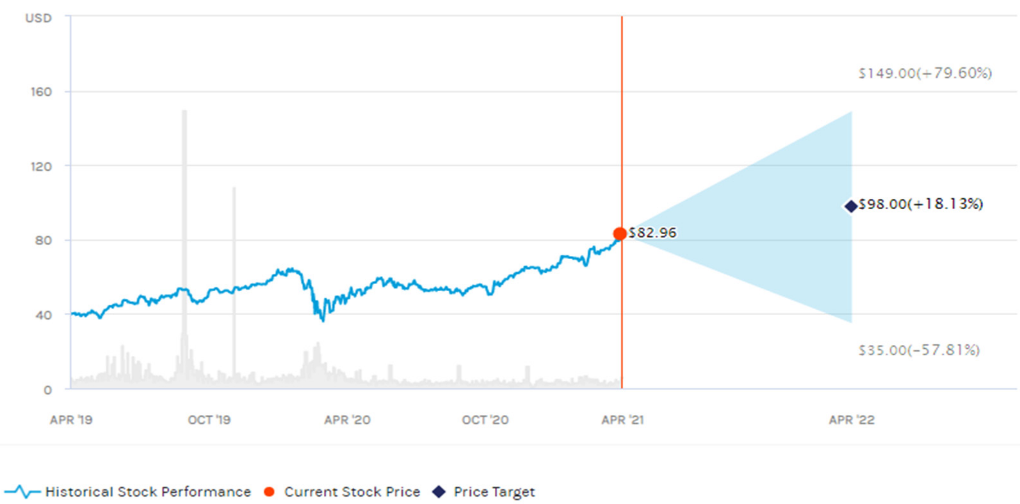
- Management's ability to execute effectively on strategic alternatives to drive value for shareholders
- Investment performance and flow trajectory at Acadian (Quant/Solutions affiliate)
- Timing and magnitude of capital returns to shareholders

Risks to PT/Rating

- Upside: Management executes better than expected on strategic alternatives; Improved flow trajectory at Acadian; Clarity on intended use of cash and timing of capital returns
- Downside: Less attractive pro-forma segments could decrease or extend the timing for strategic alternatives; Deteriorating performance at Acadian could weigh on organic growth; Uncertainty around capital returns or changes in management's direction

The Blackstone Group Inc (BX, Overweight)

Durability of Fee-Related Earnings Growth Should Push Multiples Higher



Source: Thomson Reuters, Company data, Morgan Stanley Research.

Price Target — **US$98**
Based on 23.8x 2023e EPS incl. SBC, discounted 1-yr for a 2022 valuation (implied 24.0x 2022e P/E); supported by SOTP approach

Bull — **US$149**
Faster/Strong global growth: fundraising and deployment accelerates; returns in-line with historical realized returns

Base — **US$98**
Below historical returns, increased harvesting of investments: fundraising accelerates, driving 3-yr fee-paying AuM CAGR of 16%; ramp to full corp. tax rate 2024-27

Bear — **US$35**
Challenging exit and investing environment: delayed exits; returns well below historical average; slower capital deployment; and weaker fundraising environment

Why Overweight

- Best-in-class private markets franchise with significant brand power, $148b of dry powder and strong mgmt company balance sheet uniquely position BX to capitalize on the current environment, drive above peer growth and benefit from the secular growth in Alts
- Fundraising machine that could raise over $275b in 2021-22, supported by newer initiatives (i.e., Growth Equity, Life Sciences, Core+ RE, Tac Opps, Secondaries, Asian PE etc.) and existing strategies. This should propel fee-paying AUM at a mid-teens CAGR and fee-related earnings at high teens 3-yr CAGR
- Ramping permanent capital initiatives should transform BX's earnings base into higher quality recurring fee streams

Investment Drivers

- Rising investor allocations to alternatives and consolidation of GP relationships key for driving AUM growth
- Innovative new solutions and platform build outs/acquisitions (permanent capital vehicles, infrastructure, etc.)

Risks to PT/Rating

- Upside: Ramping cash performance fees in newer funds/strategies incl: BCP VI,VII, BREP VIII; Growth in FRE from fee activation of newly raised funds and perpetual capital vehicles; Index Inclusion (Russell, S&P)
- Downside: Deeper recession that delays harvesting of investments and dampens returns which lowers cash earnings. Regulatory risk: Increased political and regulatory scrutiny of private equity business model

Charles Schwab Corp (SCHW, Overweight)

More Levers to Drive Upside to Earnings

Source: Company data, Morgan Stanley Research.

Price Target

US$86

Based on fully synergized pro forma 2023e EPS of $4.09 capitalized at 22.0x, and then discounted back one year for a 2022 valuation; 22.0x reflects the lower-end of SCHW's historical valuation range of 20x-30x when rates were zero.

Bull

US$125

Greater asset gathering (+8.0% organic growth), 1.89% NIM, long-term rates increase faster, 5,427K daily avg trades, 49.5% margin.

Base

US$86

+6.4% organic client asset growth, 1.49% NIM, equities return 6%, rates reflect the forward curve, 5,328K daily avg trades, 49.3% margin.

Bear

US$36

Client growth slows (3.8% client asset growth), 1.33% NIM, rates don't rise, 5,702K daily avg trades, and margin to 48.6%.

Note: SCHW price targets as of April 26, 2021, pricing as of April 23, 2021.

Why Overweight

- Steepening yield curve, prospects for rising rates in 2023, and better AMTD acquisition accretion should drive upside to estimates and drive multiple expansion
- Best positioned among the brokers to navigate today's zero interest rate and hyper-competitive backdrop given SCHW's scale, balance sheet strength and brand/franchise strength.
- SCHW's leadership position within the institutional channel (RIA custodian) should benefit from the secular shift toward independent financial advice.
- Unique retail servicing offering should outpace peers, catering to the mass affluent at scale via omni channel distribution and low cost should grow faster than peers.

Investment Drivers

- 25 bps change in Fed Funds rate worth ~$700-900m to revenues or $0.26-0.34 (8%-11%) to EPS (if no funding offset).
- 25 bps change in 5-year treasury worth ~$188m to revenues or $0.08 (2%) to EPS (If no funding offset).

Risks to PT/Rating

- Upside: Client risk-off leads to significant deposit inflows; Fee-based product growth accelerates (incl. robo-advisor); Steepening yield curve for better NIM; Better merger synergies; tighter cost control
- Downside: Negative interest rates and decline in long end of curve more severe; Cash balances decline; Slowdown in new clients and assets; Higher deposit beta amid competitive pressure; Payment for order flow regulation

May 2021

BlackRock Inc. (BLK, Overweight)

Compelling Growth Prospects to Debunk "Too Big to Grow" Fears

Source: Company data, Morgan Stanley Research.

Price Target

US$944

Derived from a 22.5x P/E multiple on 2022e EPS, a premium to the group, due to BLK's unrivaled product breadth as well as their ability to generate positive organic asset growth in most environments.

Bull — **US$1,313**

Stronger flow pipeline (+10% in 2022). Flows substantially higher y/y as risk-taking brings flows to high fee products (active equity & alts) & bonds benefit from money in motion related inflows. Equity +15% NTM. Operating margin of 48%.

Base — **US$944**

+6% net inflows in 2022. Led by iShares, multi-asset & alternative products, as well as money market funds. Equity returns +6%. Operating margin of 46%.

Bear — **US$465**

+3% net inflows in 2022. Muted investor sentiment across most products, except multi-asset & iShares. Equities lose -20% NTM. Margin of 40%.

Why Overweight

- We believe BLK is best positioned on the asset mgmt barbell given leading iShares ETF platform, multi-asset & alts combined with technology/Aladdin offerings that should drive ~11% EPS CAGR (2020-22e) via ~6% avg LT organic growth.
- We see further growth ahead for Alts, iShares, international penetration, and the institutional market in the US. Recently acquired Aperio also bolsters solutions offering and organic growth.
- We expect premium to widen as BLK takes share in evolving industry and executes on improving organic revenue growth trajectory.

Investment Drivers

- We see strong organic growth in higher fee products (alts, multi-asset) where BLK is a leader, and margin expansion driven by growth in scalable iShares ETF platform.
- Shift towards recurring technology based revenue through Aladdin and other bolt-ons

Risks to PT/Rating

- Upside: Growth in highly scalable iShares franchise driving margin expansion and strong EPS growth Further growth in tech & high fee products such as alts, active equities, and multi-asset
- Downside: Mrkt share loss in ETFs; lack of positive op leverage in declining mkts; Worse than expected base fee pressure through pricing initiatives or mix shift; Greater regulatory scrutiny; liquidity challenges in products

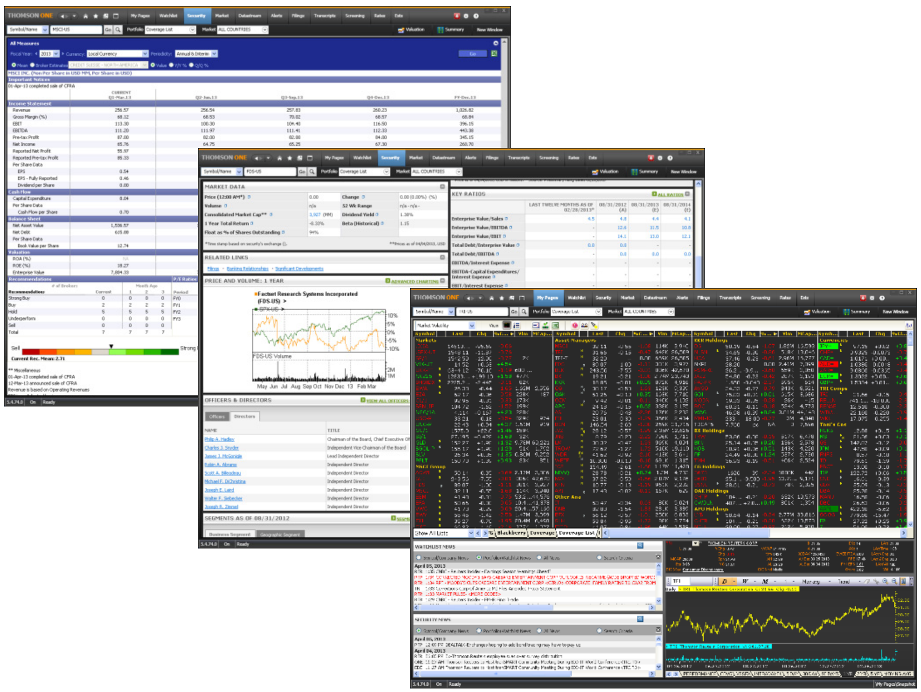
Morgan Stanley

May 2021

FOUNDATION

Financials Spring Training Teach-In

Business Services



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Information Services

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CINTAS READY FOR THE WORKDAY
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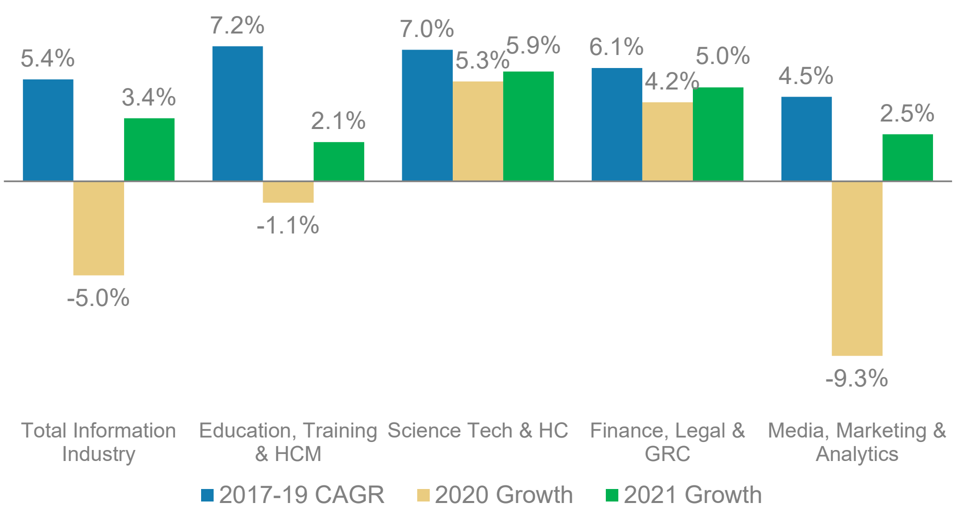
REPUBLIC SERVICES
H&R BLOCK
WASTE CONNECTIONS Connect with the Future
WM

Business Services

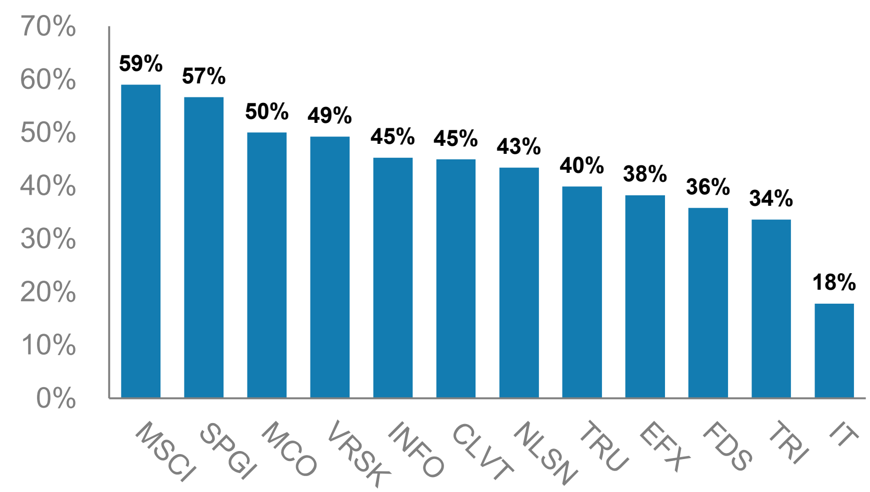
Info Services Have Growth and Defensive Characteristics

- Secular Growth Drivers
- Quality Business Models
- Recurring Revenue
- High Valuations, but Can Find Outperformance

Industry Growth by Vertical



MSe Adj. EBITDA Margins, 2022E



Source: Outsell, Morgan Stanley Research estimates

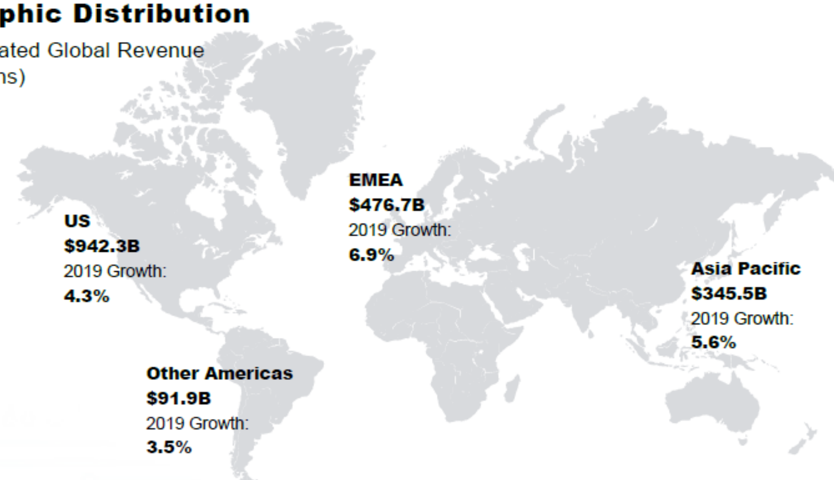
Information Services Industry

Overall Info Services Industry Size: $1.8T

2019 Growth: 5.1%

Geographic Distribution

2019 Estimated Global Revenue (USD Billions)



Information Services Industry Segment	Market Size ($B)	'17-'19 CAGR	'20 Growth	'21 Growth	Key Competitors		
Financial Information & Solutions	$88.3B	7.2%	5.8%	7.0%	Bloomberg	Refinitv	Factset
Marketing Research	$37.0B	3.5%	(16.2%)	2.2%	Nielsen	Comscore	Kantar
Legal & Regulatory Solutions	$24.8B	3.7%	(0.8%)	(2.0%)	Thomson Reuters	Relx	Wolders Kluwer
Governance, Risk & Compliance Solutions	$22.8B	4.8%	3.8%	3.2%	Relx	Verisk	
Tax & Accounting Solutions	$21.3B	8.5%	5.4%	8.7%	Intuit	Thomson Reuters	H&R Block
Credit Information & Solutions	$16.1B	4.2%	3.3%	3.2%	Experian	Equifax	TRU
Science & Technical Information & Solutions	$14.9B	3.6%	0.7%	0.0%	Relx	Clarivate	Informa
Medical Information	$13.7B	4.5%	3.1%	2.2%	RELX	Wolters Kluwer	
IT Research	$5.5B	12.0%	(9.4%)	(5.2%)	Gartner	IDC	Forrester

Source: Outsell, Morgan Stanley Research

Evolution of Information Services / Analytics

Analytics Key Trends

Key Trends

Growth Drivers

Big Data / New Analytics Products

- AI and machine learning has allowed for the development of new tools, solutions, and analytics offerings
- Driven higher volume and pricing
- Usage of data-driven decisions increasing

Increased Adoption of Analytics

- Scale and cloud technology has allowed usage by longer tail clients
- Increased number of use cases
- Rise of alternative data applications

Increasing Budget for Analytics/Usage

- Companies are spending more on data and analytics
- 3%+ price increases annually w/ high retention rates

Embedded Solutions

- Shift toward higher growth workflow solutions
- Embedded deeper within clients
- Stickier products

Information Services Has High-Quality Business Models

Revenue Growth from Market Expansion and Share Gains

- Vast addressable markets
- Leading providers in respective industries with strong position to gain share

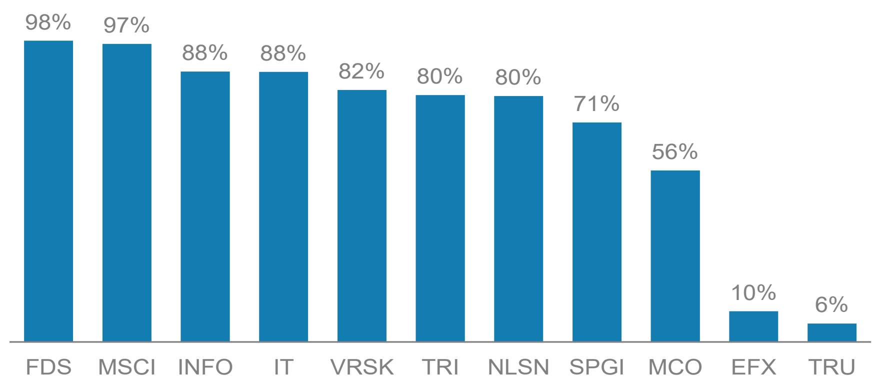
Attractive Business Models

- Top line visibility due to subscription-based models
- Scalable and inexpensive to add new customers – primarily only sales expenses after development is complete
- Typically low capital requirements once the infrastructure has been built
- High levels of free cash flow generation

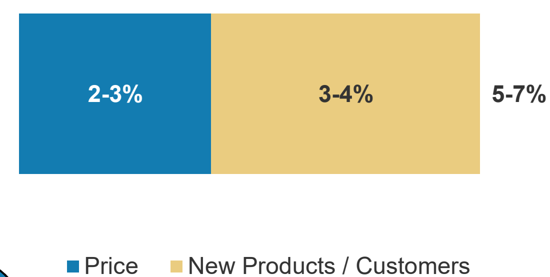
High Barriers to Entry for New Competitors

- Trusted brands lead to increased customer demand
- Significant investment required to replicate current products
- High switching costs lead to customer retention

Recurring Revenue as % of Total Revenue



Organic Revenue Growth Algorithm



Org Rev Growth: ~MSD%

Adj. EBITDA Margin: ~40%

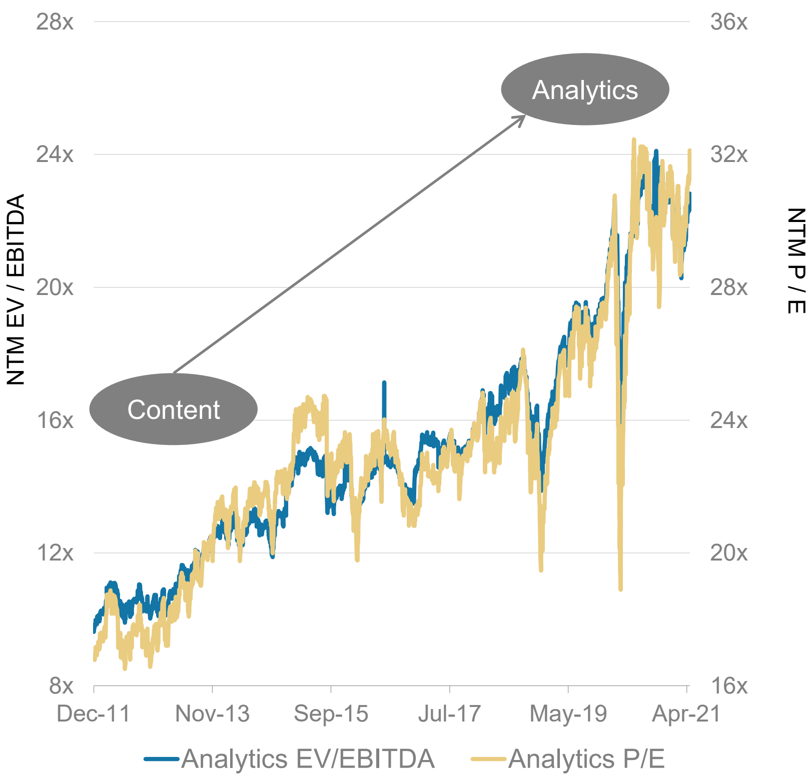
Recurring Rev: ~70%

CapEx % of Rev: 6%

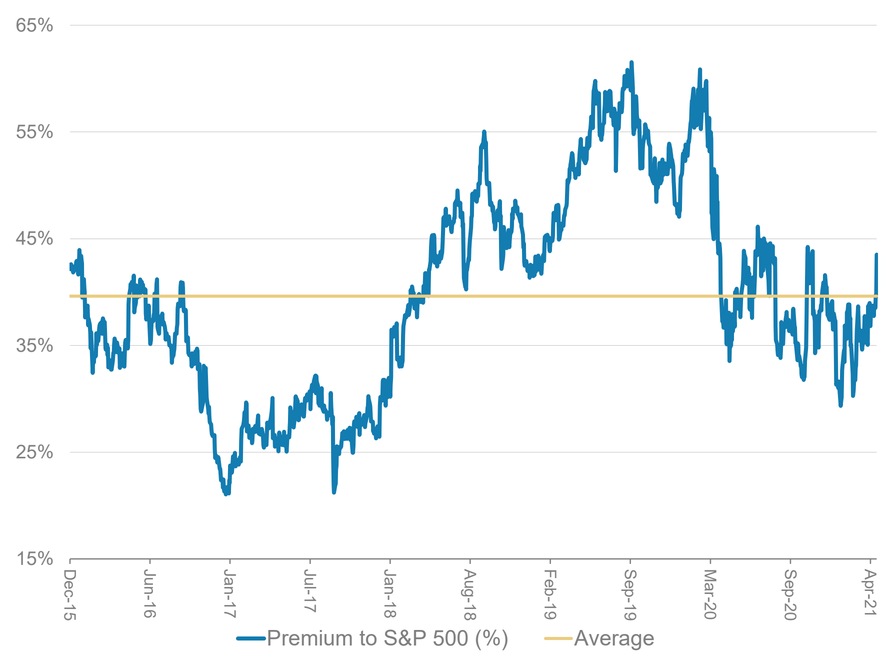
Source: Company data, Morgan Stanley Research

Evolution Has Resulted in Higher Valuation Levels; Relative Valuation In-Line with 5-Year Average

Analytics Valuation Over Time



Analytics P/E Premium to S&P 500 (%)



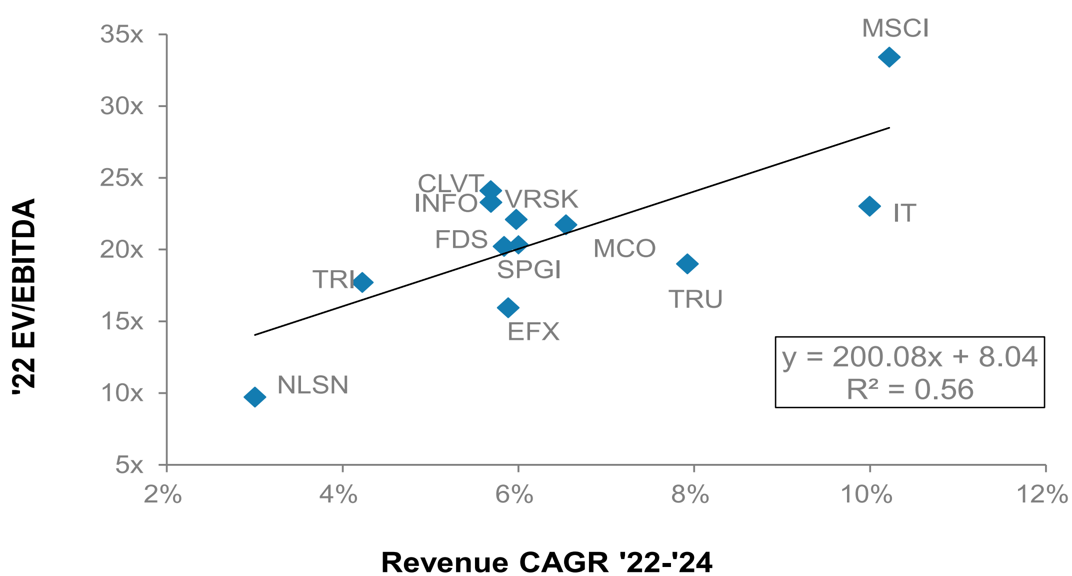
Source: Refinitiv, Morgan Stanley Research

Valuation Reflects High-Quality Business Models, Themes

Market is assigning higher valuation due to:

- Growing secular data/analytics trends
- Leading market positions
- Scalability typically results in margin expansion
- Defensiveness / high revenue visibility

'22 Std EV/EBITDA vs. '22-'24 Revenue CAGR



Source: Company data, Refinitiv, Morgan Stanley Research estimates.

		Fundamental						Valuation	
Ticker	Overall Rank	Organic Rev Growth NTM	2022 EBITDA Margin	2022 EPS Growth	Moat	Net Levg (TTM)	Perform-ance in Downturn	Upside to PT	Implied prem/disc from Scatter
TRU	1	6	8	6	8	9	*	7	2
IT	2	2	12	3	8	5	9	6	4
SPGI	3	8	2	11	3	2	5	4	5
INFO	4	3	6	8	6	10	*	2	8
VRSK	5	4	4	9	1	8	2	1	9
CLVT	6	5	5	7	6	12	*	3	12
NLSN	7	10	7	4	8	11	8	5	1
MSCI	8	1	1	5	1	7	4	10	11
EFX	9	9	9	2	8	6	6	9	3
TRI	10	11	11	1	5	3	1	8	7
MCO	11	12	3	10	3	4	*	11	6
FDS	12	7	10	12	12	1	3	12	10

Source: Company data, Refinitiv, Morgan Stanley Research estimates.

Business Services Risk/Reward

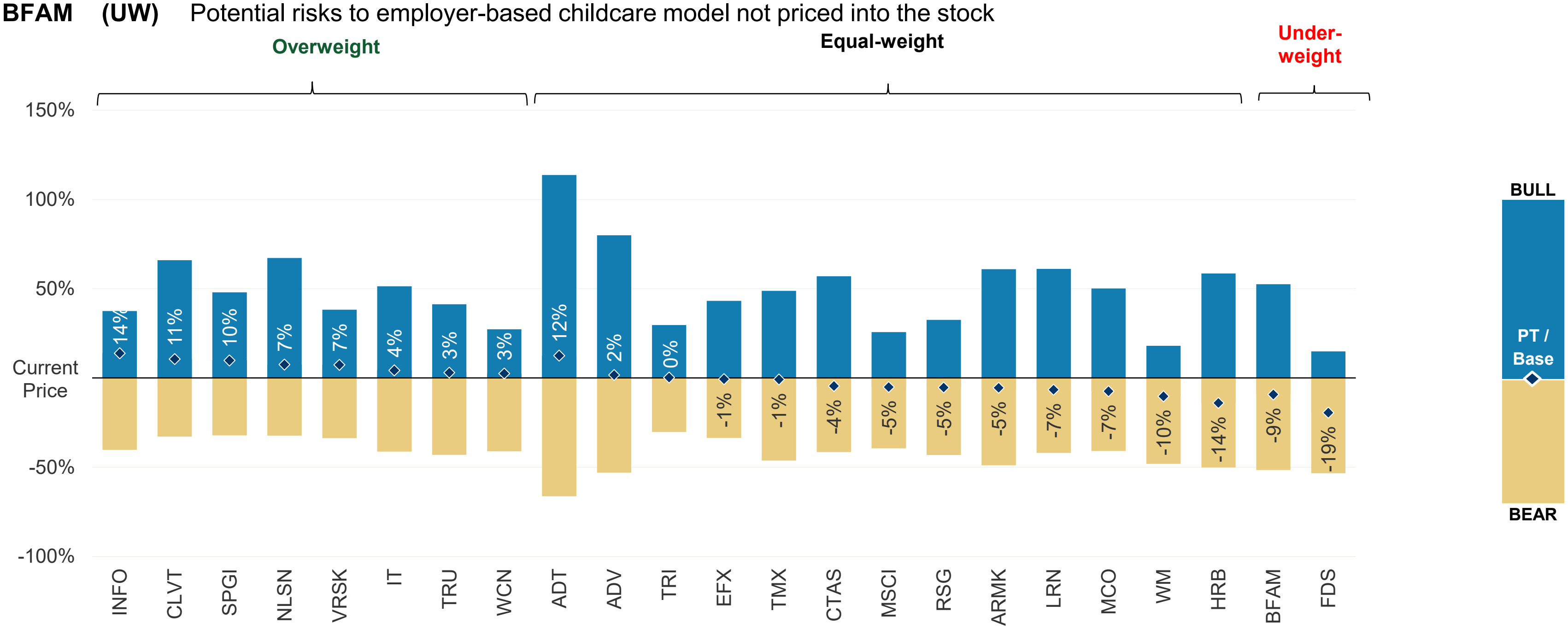
Key Stock Calls

Overweight

- **TRU** (OW) Long-term growth runway driven by new products, verticals, and geographies with attractive valuation vs. peers
- **SPGI** (OW) Strong growth tailwinds across segments with a strong balance sheet, capital return, and attractive valuation vs. peers
- **IT** (OW) Long-term double-digit grower that should benefit from reopening with attractive valuation vs. peers and history
- **VRSK** (OW) Strong moat, must-have data sets, pricing power, and high operational leverage with most defensiveness in group
- **CLVT** (OW) Accelerating organic revenue growth and margin expansion with attractive end markets; ’21 growth target very achievable
- **NLSN** (OW) Separation of Connect business will result in higher growth level that can drive multiple expansion
- **WCN** (OW) Favor WCN’s best in class price led growth and M&A opportunity, growth adjusted valuation compelling vs. comps

Underweight

- **FDS** (UW) We see shares as fully valued in light of slower organic top-line growth and decelerating EPS growth in 2021
- **BFAM** (UW) Potential risks to employer-based childcare model not priced into the stock

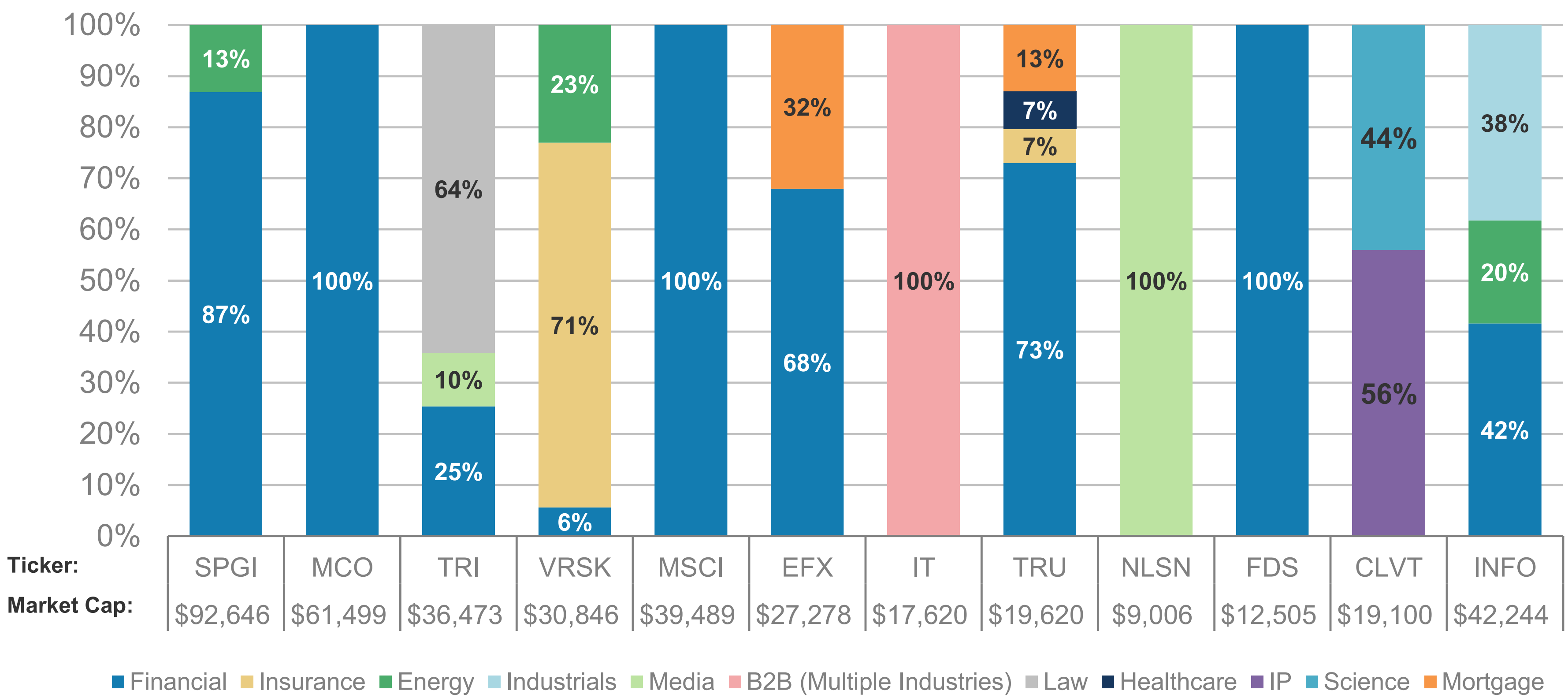


Source: Refinitiv, Morgan Stanley Research estimates

Analytics: Companies Spanning Multiple Sectors...

(% of Revenue FY20)

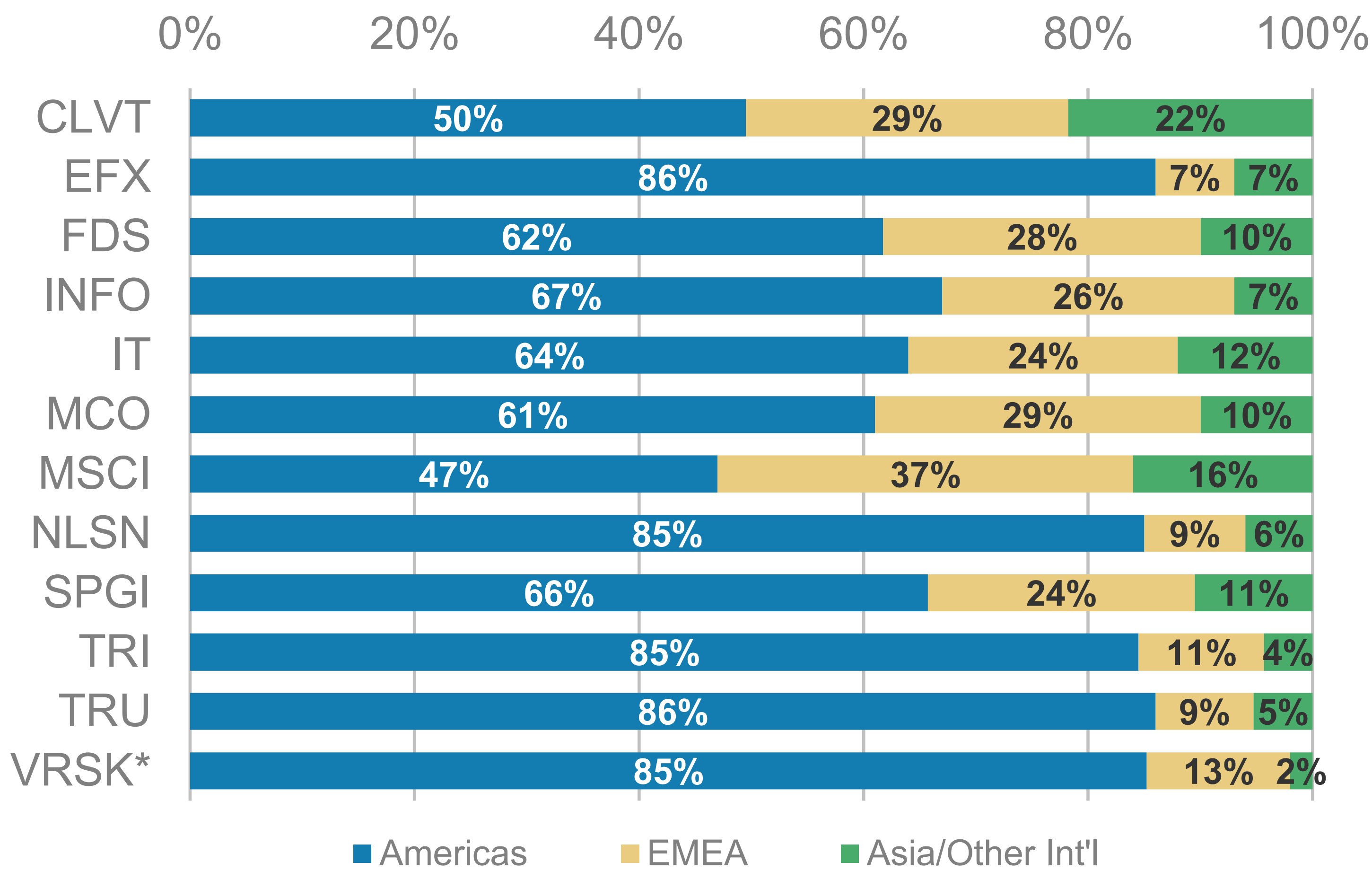
($ in millions, except per share data)



Note: VRSK energy includes other specialized markets, INFO industrials includes Transportation and CMS, TRI financial includes T&A and Corporates, market cap data as of 4/22/2021;
Source: Company data, Morgan Stanley Research

... Geographies

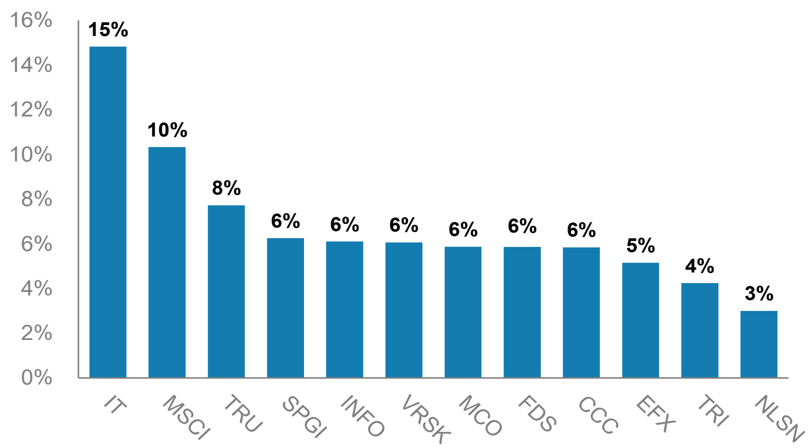
(% of Revenue FY20)



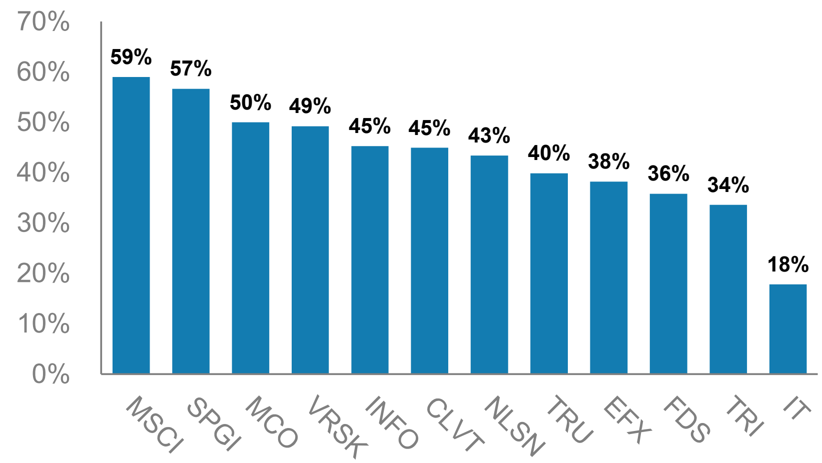
*VRSK estimated
Source: Company data, Morgan Stanley Research

Analytics: Key Metrics

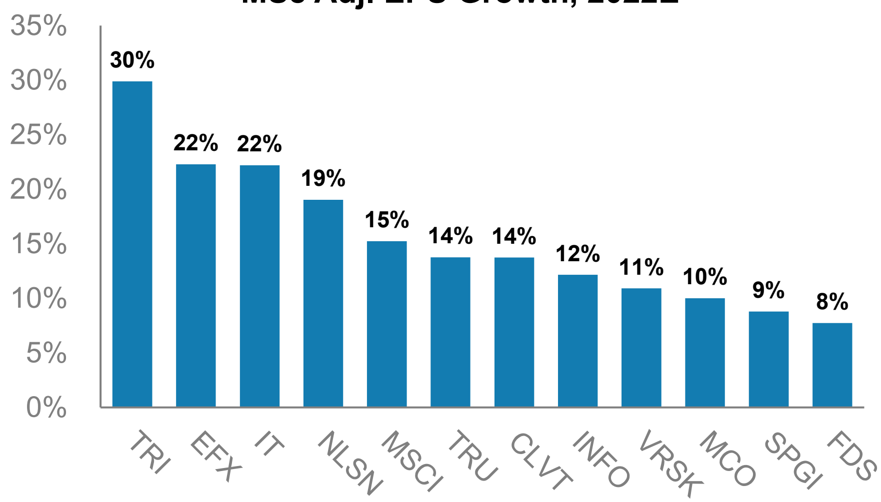
MSe Organic Revenue Growth, 2022E



MSe Adj. EBITDA Margins, 2022E

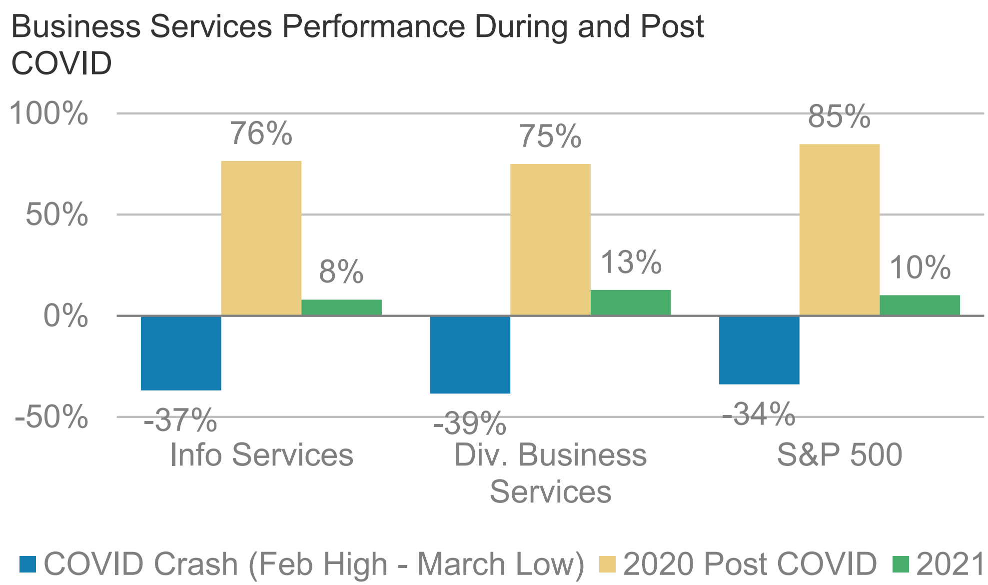


MSe Adj. EPS Growth, 2022E



Source: Company data, Refinitiv, Morgan Stanley Research estimates

COVID-19 Performance



Diversified Business Services Underperformed The Market During COVID

- Involve Physical Customer-Facing Services
- Potential for longer term impact if there is a shift to work from home that affects corporate dining (ARMK) or on-site childcare demand (BFAM)
- Diversified Business Services have outperformed in ’21 on reopening theme

Information Services Have Underperformed in 2021

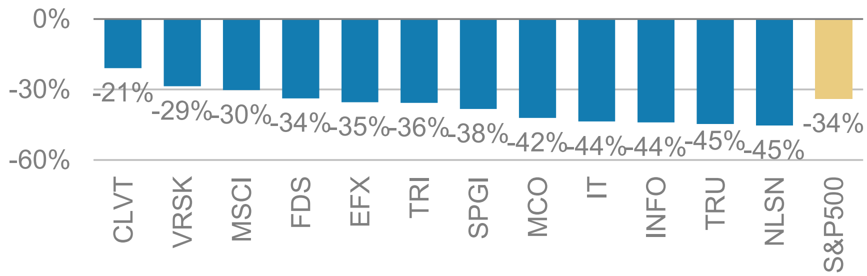
- Rising interest rates have pressured higher multiple stocks

Source: Company data, Refinitiv, Morgan Stanley Research estimates

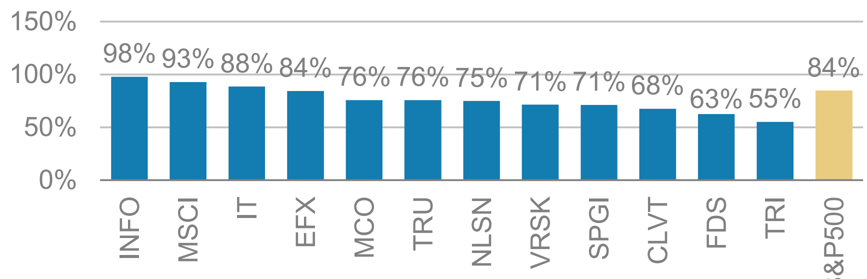
COVID-19 Performance

CLVT, MSCI, VRSK were the strongest outperformers during the COVID Crash

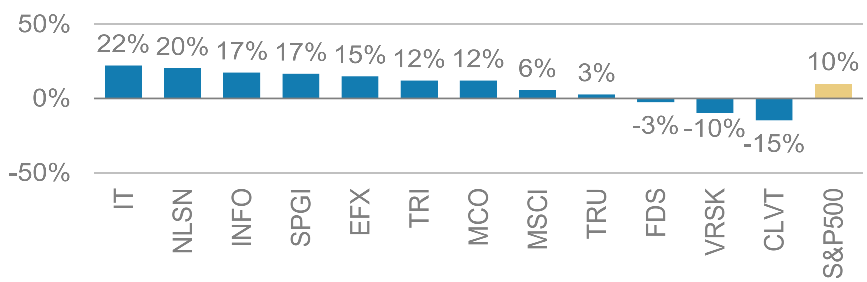
Performance During COVID Crash (2/19/20-3/23/20)



2020 Performance Post COVID Crash

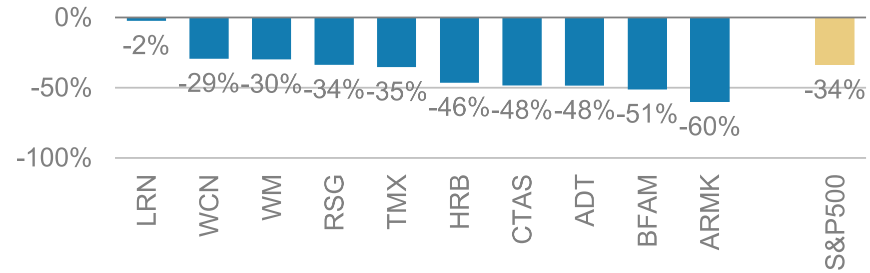


2021 Performance

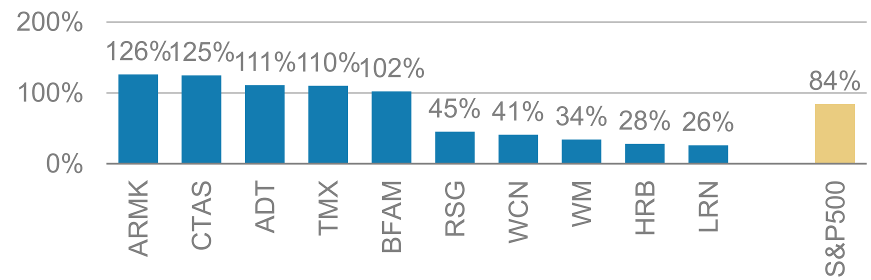


Waste Outperformed During COVID-crash, customer-facing names (ARMK, CTAS, BFAM) performed worst, which led to outperformance post COVID Crash

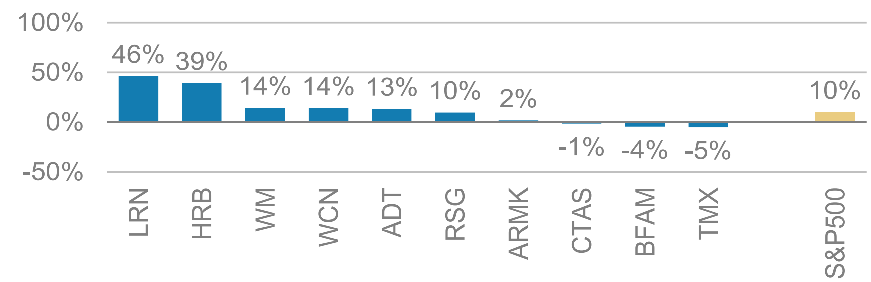
Performance During COVID Crash (2/19/20-3/23/20)



2020 Performance Post COVID Crash



2021 Performance



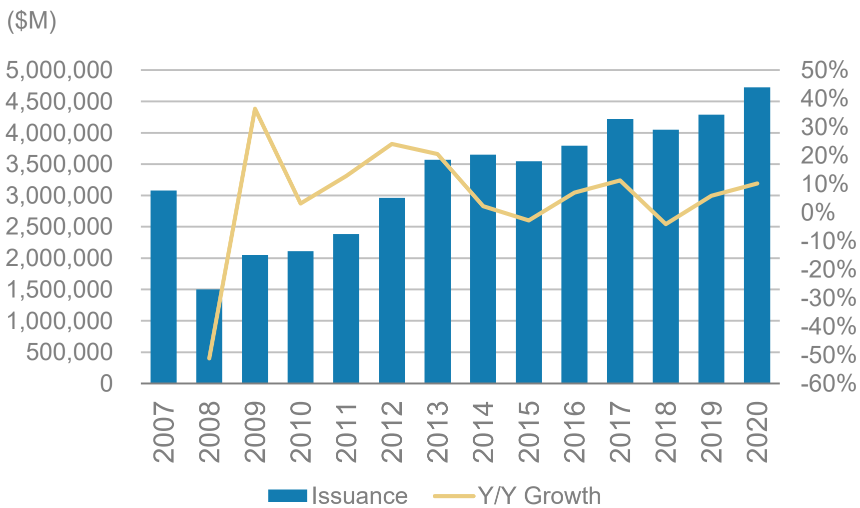
Source: Company data, Refinitiv, Morgan Stanley Research estimates

Industry Themes: Macro Recovery, Interest Rates

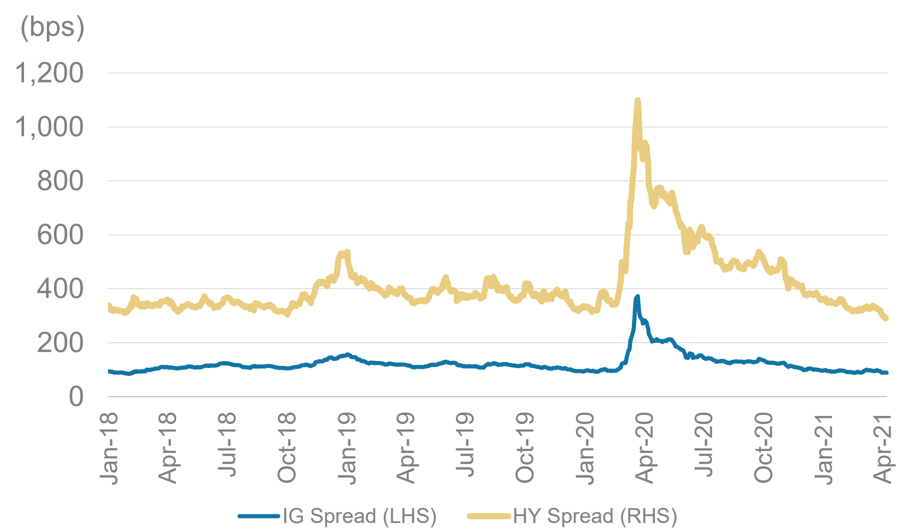
Rating Agencies

- Rating agencies historically are cyclical
- GDP typically correlated with issuance
- However, liquidity driven issuance in 2020 created tough comp/potential pull forward
- Though yields have risen in 2021, spreads remain tight, creating favorable environment for debt issuance (1Q21 +8%)

2020 Debt Issuance +10% Y/Y



IG and HY Corporate Spreads



Note: Reflects sum of IG (ex-FIG), HY (ex-FIG), Loans, ABS, RMBS, CMBS, and CLOs

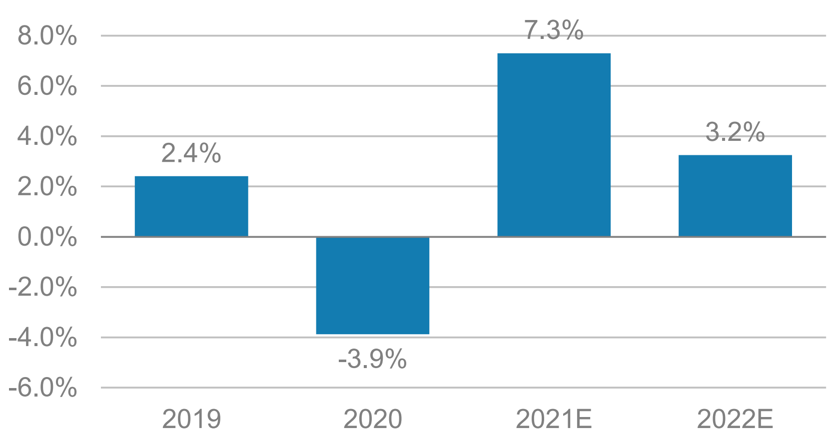
Source: Company data, Bloomberg, Dealogic, LCD, AB Alert, CM Alert, Morgan Stanley Research

Industry Themes: Macro Recovery, Interest Rates

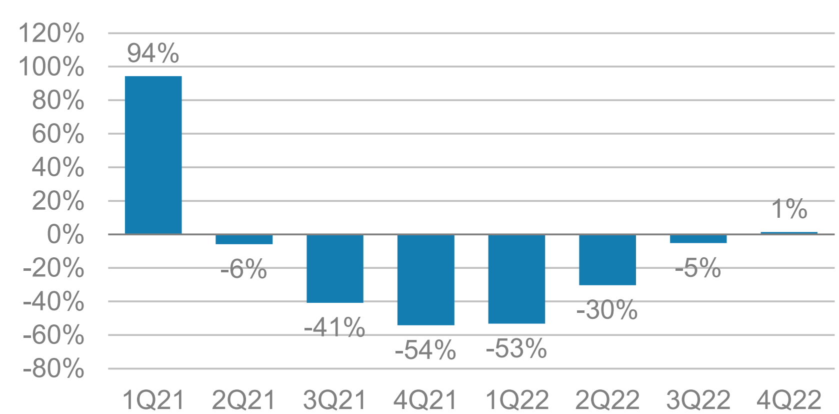
Credit Bureaus

- TRU/EFX likely to benefit from increased consumer spending
  - MSe of 7.3% in '21 vs. -3.9% in '20
- Higher rates creates mortgage headwind in 2021
  - EFX more exposed than TRU
    - 32% of mix at EFX vs. 13% at TRU
- Lower unemployment claims impacts EFX's Employer Services business, however, more job openings could lead to more employment and income verifications

Elevated Cons. Spending in '21/22



MBA Forecasts Mortgage Decline in 2H21



Source: Company data, Refinitv, Morgan Stanley Research estimates

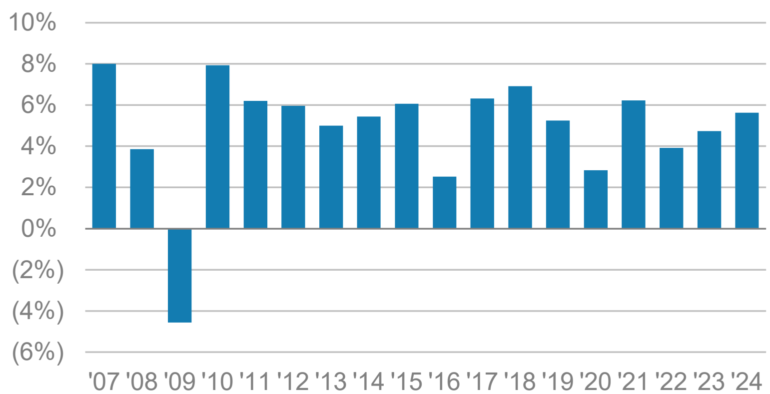
Industry Themes: Technology Spending

Gartner

- Global technology spending is expected to recover to +6.2% in 2021 from flat in 2020 per IDC estimates
- We expect Conferences will recover by 2022 as in-person events resume
  - With vaccines being rolled out globally, we expect the outlook for in-person conferences to improve and 2022 Conferences revenue to generate ~78% of its 2019 level

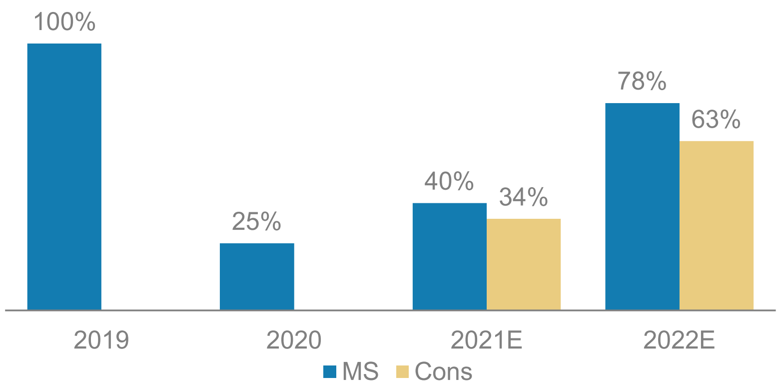
Technology Spending to Recover in 2021

Global Technology Spending



We Expect Conferences Revenue to Recover by 2022

MS vs. Consensus Conferences Revenue vs. 2019



Source: Company data, Refinitv, Morgan Stanley Research

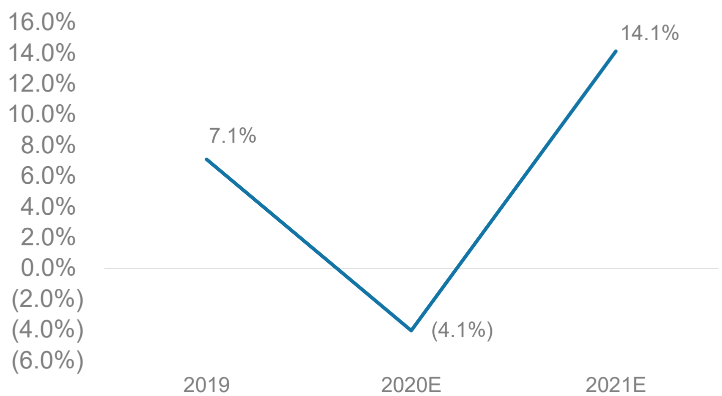
Industry Themes: Media

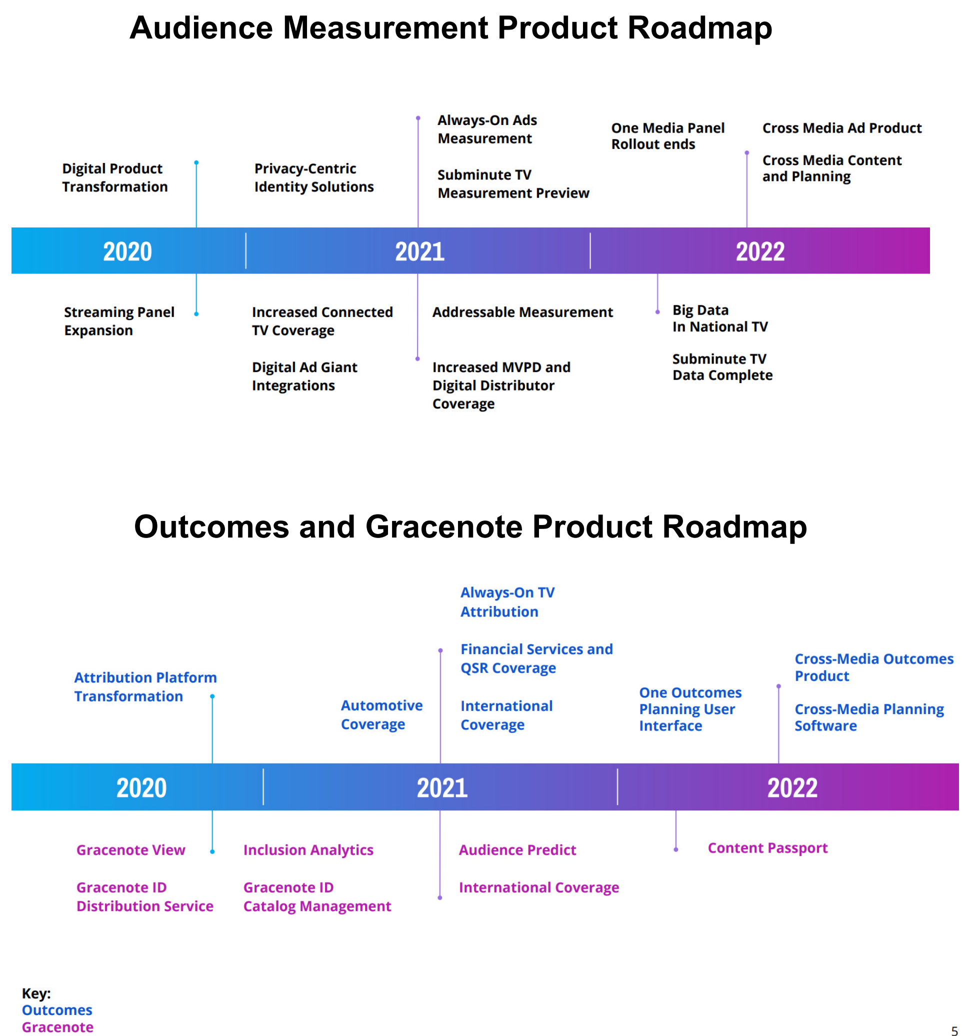
Nielsen

- 2021 expected to be a record year for ad spending with +14% YoY growth (ex. P&O) vs. -4% in 2020, led by digital advertising growth of +20%
- NLSN's core audience measurement and emphasis on digital solutions should see benefits from the strong market
  - Progress on Nielsen ONE could provide catalysts in 2021

Morgan Stanley Media Research team expects strong bounce back in the ad market in '21

MS Advertising Forecast Organic ex. P&O





Source: Company data, Refinitv, Morgan Stanley Research estimates

Industry Themes: ESG

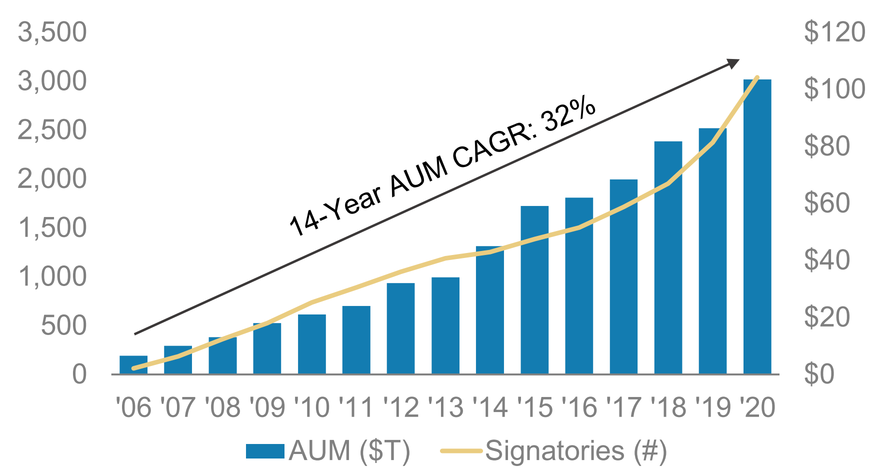
ESG is a Large, Fast Growing Market

- UN PRI (Principles for Responsible Investment) AUM growing at a 32% CAGR since '06, 28% y/y
- MSCI estimates the current market opportunity is $3.9B for existing ESG solutions
- 85% of the general population are at least somewhat interested in sustainable investing

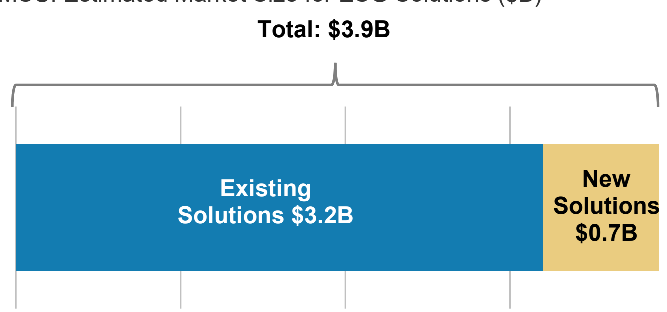
ESG White Space Growth Opportunity for Info Services

- Opportunity to capture new revenues in a growing segment by providing ESG data, content, research, and ratings
- Demand for sustainable data/new ESG products expected to remain strong as AUM shifts to sustainable funds
- Global assets invested sustainably expected to increase from 18% in 2020 to 37% in 2025, with EMEA at 47%, APAC at 22%, and AMRS at 20%

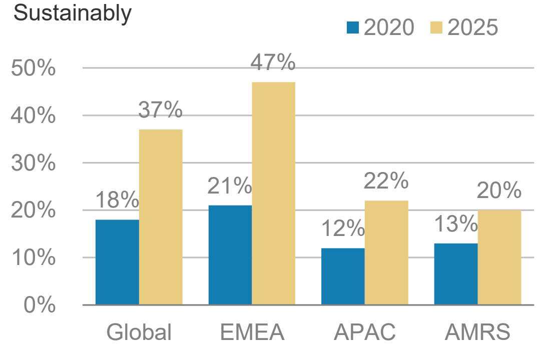
UN PRI Signatories and AUM ($T)



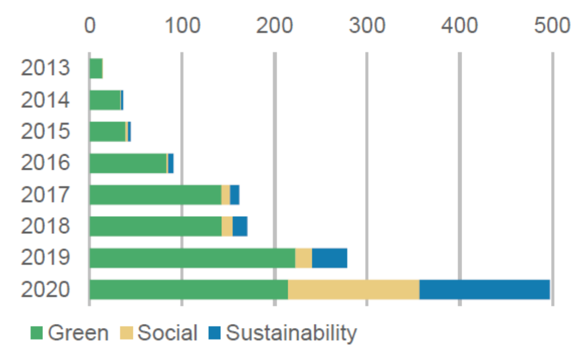
MSCI Estimated Market Size for ESG Solutions ($B)



Percentage of Assets Invested Sustainably



ESG bond issuance 2013 - 2020 ($bn)



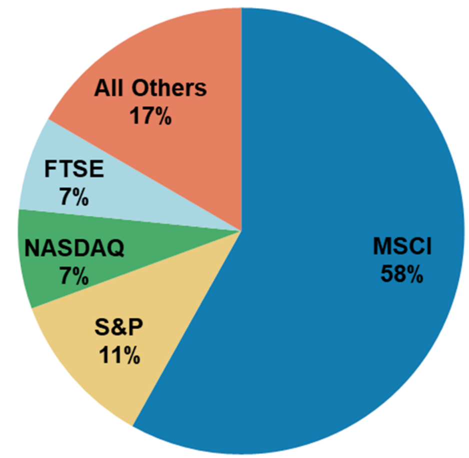
Source: Company data, UN PRI, MSCI, Moody's, Global Client Sustainability Survey July –September 2020 BlackRock, Bloomberg, Morgan Stanley Research

Industry Themes: ESG

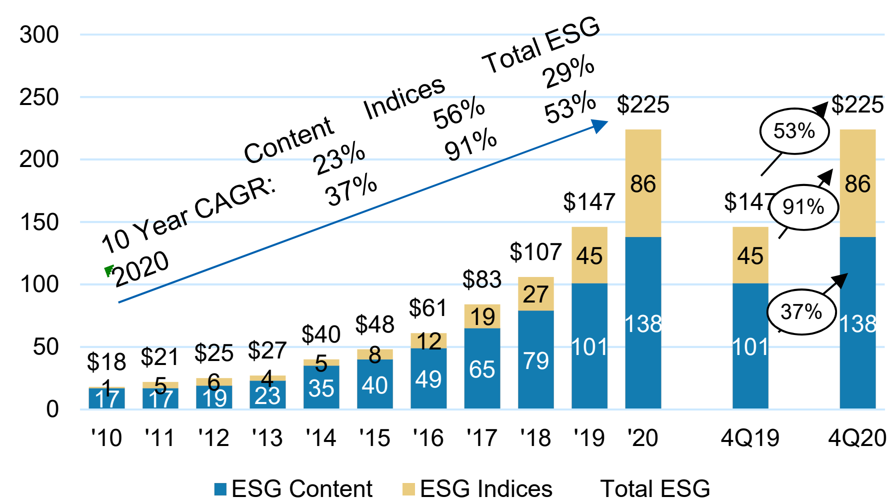
MSCI is the leader in ESG, but there can be multiple winners

- MSCI has a leading position in US ESG ETF's, content, and ratings with a total run rate of $225M as of 4Q20 and 29% annual CAGR ('10-'20). We think MSCI's ESG business will continue to grow, benefitting from its 1st mover advantage.
- SPGI's ESG revenue is now $65M and mgmt expects it to grow at a 40% CAGR over the next few years. SPGI has unique data, index capabilities, and 1400 credit analysts who can collect data from companies. We expect this will lead to SPGI ultimately being a leader in the ESG space.
- INFO has ~$70M of ESG-related rev, and partners with MSCI on ESG fixed income indexes which adds to its ESG reporting and environmental registry data. INFO provides solutions in energy transition, supply chain, ESG advisory, indices, and emissions compliance and electrification solutions.
- VRSK provides a number of climate- and ESG-related solutions, including climate analytics, energy transition practice, and cyber insurance tools.
- MCO's ESG rev is $17M. ESG acqs include Vigeo Eiris and Four Twenty Seven, and a minority stake in SynTao.
- FDS offers 3rd party ESG datasets through its data platform Open:FDS, along with its own RepRisk ESG product. FDS is also buying TruValue Labs, which uses AI-driven technology to take unstructured data and converting it to signals for evaluating positive and negative ESG behavior in companies.

US ESG ETF Market Share



MSCI ESG Content and Index Run Rate ($M)



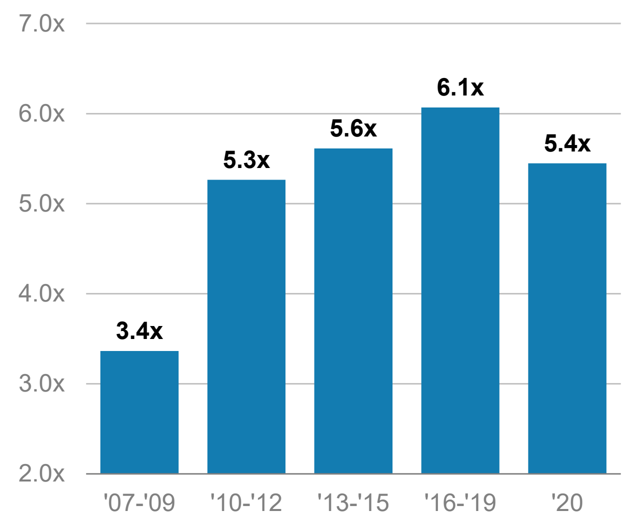
Source: Company data, Bloomberg, Morgan Stanley Research . ESG ETF market share data as of Feb 22, 2021.

Industry Themes: M&A

M&A

- M&A and consolidation within the Information Services industry has increased, including recent large combinations such as LSE/Refinitiv and SPGI/INFO.
- Combinations can result in a high level of synergies; cost synergies have averaged 17% of the target's expense base and revenue synergies have averaged 18% of the target's revenue base.
- We expect that there may be more focus on M&A (particularly tuck-ins), as companies seek to acquire differentiated content and technology assets in high-growth areas.
- However, with the group on average trading at nearly ~21x '22 EBITDA (ex-NLSN), it is difficult to make accretion math work despite high synergy potential.

Average Revenue Multiple



Target	INFO	SNL	MRKT	IPREO	Refinitiv	BvD	Callcredit	CEB	Kount
Acquirer	SPGI	SPGI	IHS	INFO	LSE	MCO	TRU	IT	EFX
Revenue	$4,288	$255	$1,113	$370	$6,250	$281	$167	$1,017	$60
Expenses	$2,451	$204	$617	$255	$4,042	$137	$110	$747	N/D
Adj. EBITDA	$1,837	$51	$497	$115	$2,208	$144	$57	$270	N/D
Run Rate Cost Synergies	$480	$35	$125	$20	$469	$40	$30	$38	N/D
Run Rate Revenue Synergies	$350	$35	$100	$35	$302	$40	$0	N/D	$50
Cost Synergies % of Target Expense Base	20%	17%	20%	8%	12%	29%	27%	5%	N/D
Revenue Synergies % of Target Revenue Base	8%	14%	9%	9%	5%	14%	0%	N/A	83%

Source: Company data, Refinitiv, Morgan Stanley Research

Information Services Comps

Morgan Stanley - Standardized Comps

Analytics						Organic Revenue Growth		EV / EBITDA Consensus Method			EV / EBITDA Unadjusted Post-SBC			Price / Earnings Consensus Method			Price / Earnings NI to Common Adj. for Amort, net		
Ticker	Company	Rating	Share Price	Equity Value	Enterprise Value	LTM (%)	NTM (%)	CY '21E (x)	CY '22E (x)	CY '23E (x)	CY '21E (x)	CY '22E (x)	CY '23E (x)	CY '21E (x)	CY '22E (x)	CY '23E (x)	CY '21E (x)	CY '22E (x)	CY '23E (x)
CLVT.N	Clarivate Plc	OW	25.31	15,871	19,100	1.5%	5.6%	24.2x	22.5x	20.8x	25.1x	23.3x	21.5x	34.7x	30.5x	27.0x	35.5x	31.1x	27.5x
FDS.N	Factset Research Systems Inc	UW	323.79	12,505	12,474	5.2%	5.0%	21.9x	20.3x	18.9x	21.9x	20.3x	18.9x	28.4x	26.4x	24.4x	29.0x	26.9x	24.8x
INFO.N	IHS Markit	OW	105.40	42,244	47,059	(1.5%)	7.9%	23.1x	21.2x	19.6x	26.2x	24.1x	22.2x	33.0x	29.4x	26.2x	38.5x	33.7x	29.9x
IT.N	Gartner Inc	OW	195.60	17,620	18,886	(2.8%)	8.1%	23.6x	20.5x	18.6x	26.4x	23.0x	23.0x	44.0x	36.0x	31.2x	44.0x	36.0x	31.2x
MSCI.N	Msci Inc	EW	471.75	39,489	41,552	8.7%	12.8%	37.3x	33.4x	30.0x	37.3x	33.4x	30.0x	51.4x	44.6x	38.6x	51.4x	44.6x	38.6x
NLSN.N	Nielsen Holdings Plc	OW	25.12	9,006	14,700	(3.1%)	4.2%	10.0x	9.5x	9.0x	10.3x	9.7x	9.2x	17.6x	14.8x	13.2x	21.1x	17.4x	15.0x
TRI	Thomson Reuters Corp	EW	91.73	36,473	38,568	1.2%	4.0%	20.4x	17.7x	15.2x	20.4x	17.7x	15.2x	42.7x	32.8x	25.0x	42.7x	32.8x	25.0x
VRSK.O	Verisk Analytics Inc	OW	187.26	30,846	33,841	4.2%	5.7%	23.7x	22.1x	20.6x	23.7x	22.1x	20.6x	35.2x	31.7x	28.6x	35.2x	31.7x	28.6x
Average - Analytics						**1.7%**	**6.7%**	**23.0x**	**20.9x**	**19.1x**	**23.9x**	**21.7x**	**20.1x**	**35.9x**	**30.8x**	**26.8x**	**37.2x**	**31.8x**	**27.6x**
Average - Analytics ex. NLSN						**2.3%**	**7.0%**	**24.9x**	**22.5x**	**20.5x**	**25.8x**	**23.4x**	**21.6x**	**38.5x**	**33.1x**	**28.7x**	**39.5x**	**33.8x**	**29.4x**
EXPN.L*	Experian Plc	OW	38.34	35,016	39,241			20.0x	18.2x	NA	20.0x	18.2x	NA	34.3x	30.8x	NA	33.5x	29.8x	NA
EFX.N	Equifax Inc	EW	221.41	27,278	30,013	19.7%	4.3%	19.1x	15.9x	14.5x	19.1x	15.9x	14.5x	31.9x	26.1x	22.1x	31.9x	26.1x	22.1x
TRU.N	Transunion	OW	101.92	19,620	22,677	3.2%	5.6%	19.9x	18.1x	16.5x	20.9x	19.0x	17.3x	30.2x	26.6x	23.7x	33.0x	28.9x	25.6x
DNB.N	Dun & Bradstreet Holdings Inc	NC	24.20	10,235	13,221			15.7x	14.6x	13.9x	16.8x	15.4x	NA	23.5x	21.0x	18.4x	25.4x	23.6x	23.6x
MCO.N	Moody's Corp	EW	325.05	61,499	65,225	11.8%	3.6%	23.2x	21.7x	20.1x	23.2x	21.7x	20.1x	30.3x	27.5x	24.8x	30.3x	27.5x	24.8x
SPGI.N	S&P Global Inc	OW	383.31	92,646	95,467	10.6%	5.1%	21.9x	20.2x	18.8x	21.9x	20.2x	18.8x	30.7x	28.2x	25.6x	30.7x	28.2x	25.6x
Average - Credit						**11.4%**	**4.6%**	**20.8x**	**18.8x**	**17.5x**	**21.0x**	**19.0x**	**17.7x**	**31.5x**	**27.8x**	**24.1x**	**31.9x**	**28.1x**	**24.5x**
Average - Information Services						**5.2%**	**6.0%**	**22.0x**	**19.9x**	**18.4x**	**22.6x**	**20.5x**	**19.1x**	**34.1x**	**29.6x**	**25.8x**	**35.1x**	**30.3x**	**26.5x**
Average - Information Services ex. NLSN						**6.0%**	**6.2%**	**22.5x**	**20.3x**	**18.8x**	**23.1x**	**20.9x**	**20.1x**	**34.6x**	**30.1x**	**26.3x**	**35.5x**	**30.8x**	**27.3x**

Legend:

Note: Experian is covered by Anvesh Agrawal with industry view in-line

Note : TRI - EV adjusted for Refinitv stake ($19 per share)

Pricing as of: Apr 22, 2021

Source: Morgan Stanley Research, Company Data, and Refinitiv

Source: Company data, Refinitiv, Morgan Stanley Research estimates NC = Not covered.

Diversified Business Services Comps

						EV/EBITDA Consensus Method		EV/EBITDA Standardized Post SBC		Price/Earnings Consensus Method		Unlevered FCF Yield		Levered FCF Yield	
Ticker	Company	Rating	Share Price	Equity Value	Enterprise Value	CY21E	CY22E	CY21E	CY22E	CY21E	CY22E	CY'21E	CY'22E	CY'21E	CY'22E
Food & Support Services															
ARMK.N	Aramark	EW	39.15	9,931	16,710	18.1x	10.7x	21.6x	12.1x	233.4x	19.8x	3.1%	4.6%	3.1%	5.4%
CPG.L	Compass Group Plc	EW	21.86	38,998	43,209	17.9x	12.7x	20.0x	13.9x	46.3x	25.2x	2.4%	2.7%	2.4%	2.8%
EXHO.PA	Sodexo Sa	OW	100.23	14,779	17,064	14.1x	10.1x	14.1x	10.1x	32.1x	18.8x	4.2%	3.8%	4.3%	4.0%
Food & Support Services						**16.7x**	**11.1x**	**18.6x**	**12.0x**	**103.9x**	**21.3x**	**3.2%**	**3.7%**	**3.3%**	**4.1%**
Uniforms															
ARMK.N	Aramark	EW	39.15	9,931	16,710	18.1x	10.7x	21.6x	12.1x	233.4x	19.8x	3.1%	4.6%	3.1%	5.4%
CTAS.O	Cintas Corp	EW	348.56	37,643	39,481	21.1x	19.4x	21.1x	19.4x	33.4x	30.8x	2.9%	2.9%	3.1%	3.1%
UNF	Unifirst Corp	NC	227.62	4,297	3,788	12.7x	12.1x	12.7x	12.1x	29.8x	28.1x	3.6%	NA	3.2%	NA
Uniforms						**17.3x**	**14.1x**	**18.5x**	**14.6x**	**98.9x**	**26.2x**	**3.2%**	**3.7%**	**3.1%**	**4.2%**
Waste															
RSG	Republic Services Inc	EW	105.61	33,785	42,612	13.2x	12.5x	13.2x	12.5x	27.5x	24.9x	3.6%	3.9%	4.0%	4.4%
WCN	Waste Connections Inc	OW	117.03	30,849	34,953	18.9x	17.5x	18.9x	17.5x	37.0x	33.2x	3.0%	3.2%	3.2%	3.5%
WM	Waste Management Inc	EW	134.75	57,282	70,541	14.2x	13.4x	14.2x	13.4x	29.1x	26.2x	3.8%	4.0%	4.2%	4.4%
GFL.TO	Gfl Environmental Inc	NC	33.13	10,815	15,788	14.3x	12.6x	14.5x	12.8x	N/M	N/M	3.9%	4.6%	3.9%	4.8%
CWST.N	Casella Waste Systems Inc	NC	67.20	3,452	3,837	20.4x	18.5x	20.4x	18.5x	N/M	N/M	2.3%	2.5%	2.1%	2.4%
Waste						**16.2x**	**14.9x**	**16.3x**	**15.0x**	**31.2x**	**28.1x**	**3.3%**	**3.6%**	**3.5%**	**3.9%**
Pest Services															
TMX.N	Terminix Global Holdings Inc	EW	48.40	6,394	6,792	18.0x	17.0x	18.8x	17.8x	35.1x	30.6x	3.3%	3.9%	3.5%	4.2%
ROL	Rollins Inc	NC	35.29	17,367	17,472	34.9x	32.1x	34.9x	32.1x	57.3x	52.7x	2.1%	2.3%	2.1%	2.3%
RTO.L	Rentokil Initial Plc	OW	7.02	13,058	14,428	16.0x	14.8x	16.0x	14.8x	31.1x	27.9x	2.7%	3.3%	2.6%	3.3%
Pest Services						**23.0x**	**21.3x**	**23.3x**	**21.6x**	**41.2x**	**37.1x**	**2.4%**	**2.8%**	**2.4%**	**2.8%**

Note: Fiscal year data used w here calendar year data w as incomplete.
Note: Unadjusted EBITDA for ARMK.K and CPG.L penalizes for client contract amortization
Note: CPG.L and EXHO.PA covered by Jamie Rollo, RTO.L by Edw ard Stanley, VVNT by Erik Woodring, CHTR, ATUS, and CMCSA by Ben Sw inburne, ADP and PAYX by James Faucette, PSON.L by Patrick Wellington
Source: Morgan Stanley Research, Company Data, and Refinitiv
Pricing as of: Apr 22, 2021

Source: Company data, Refinitiv, Morgan Stanley Research estimates NC = Not covered

Diversified Business Services Comps, ctd

Ticker	Company	Rating	Share Price	Equity Value	Enterprise Value	EV/EBITDA Consensus Method CY21E	EV/EBITDA Consensus Method CY22E	EV/EBITDA Standardized Post SBC CY21E	EV/EBITDA Standardized Post SBC CY22E	Price/Earnings Consensus Method CY21E	Price/Earnings Consensus Method CY22E	Unlevered FCF Yield CY'21E	Unlevered FCF Yield CY'22E	Levered FCF Yield CY'21E	Levered FCF Yield CY'22E
Home Security															
ADT.N	Adt Inc	EW	8.89	7,254	16,539	7.8x	7.1x	8.2x	7.4x	12.1x	9.4x	3.1%	5.8%	6.8%	7.5%
VVNT.N	Vivint Smart Home Inc	EW	12.3	2,194	4,726	7.3x	6.7x	8.1x	7.0x	N/M	N/M	6.3%	5.2%	2.6%	6.0%
Home Security						**7.6x**	**6.9x**	**8.1x**	**7.2x**	**12.1x**	**9.4x**	**4.7%**	**5.5%**	**4.7%**	**6.7%**
Cable															
CHTR.O	Charter Communications	OW	657.68	127,413	215,643	11.1x	10.1x	11.1x	10.1x	33.0x	23.3x	4.8%	5.1%	6.5%	6.4%
ATUS.N	Altice USA	EW	35.45	16,891	43,273	9.8x	9.6x	9.8x	9.6x	51.7x	15.9x	6.3%	6.6%	8.2%	8.2%
CMCSA.O	Comcast Corporation	OW	54.40	249,188	349,071	10.6x	9.0x	10.6x	9.0x	19.5x	14.9x	4.9%	6.0%	5.5%	7.2%
Cable						**10.2x**	**9.3x**	**10.2x**	**9.3x**	**35.6x**	**15.4x**	**5.6%**	**6.3%**	**6.9%**	**7.7%**
Staffing															
MAN	Manpow ergroup Inc	NC	117.05	6,431	6,002	9.8x	7.9x	9.8x	7.9x	18.9x	14.6x	9.1%	9.5%	8.2%	8.6%
RHI	Robert Half International Inc	NC	85.20	9,621	9,047	13.3x	12.2x	13.3x	12.2x	20.9x	18.8x	4.7%	5.4%	4.4%	5.1%
Staffing						**11.5x**	**10.0x**	**11.5x**	**10.0x**	**19.9x**	**16.7x**	**6.9%**	**7.4%**	**6.3%**	**6.8%**
Other															
BFAM	Bright Horizons	UW	165.21	10,117	10,763	36.7x	25.1x	38.6x	26.1x	74.2x	40.9x	2.2%	2.4%	2.3%	2.5%
HRB	H&R Block	EW	22.08	4,006	5,178	6.3x	6.9x	6.3x	6.9x	8.1x	8.6x	13.3%	12.3%	13.0%	11.6%
ADP	Automatic Data Processing Inc	EW	194.83	83,376	83,767	21.0x	19.4x	21.0x	19.4x	30.2x	27.9x	3.7%	3.7%	3.6%	3.7%
PAYX	Paychex Inc	EW	98.28	35,416	31,018	18.3x	17.9x	18.3x	17.9x	31.5x	30.7x	4.1%	4.1%	3.5%	3.6%
ABM	ABM Industries	NC	52.98	3,554	3,867	9.3x	10.1x	9.2x	10.1x	16.7x	16.8x	7.2%		7.2%	
BCO	Brinks Co	NC	76.15	3,786	5,725	8.4x	7.7x	8.8x	8.1x	15.9x	13.7x	5.9%	8.0%	6.7%	10.3%
BV	Brightview Inc.	NC	17.81	1,873	2,927	10.2x	9.4x	11.4x	10.4x	16.9x	14.6x	3.8%	4.7%	6.0%	7.3%
HCSG	Healthcare Services Group	NC	31.17	2,329	2,080	16.1x	15.5x	16.1x	15.5x	26.3x	24.8x	2.8%	3.4%	2.3%	2.9%
Other						**15.8x**	**14.0x**	**16.2x**	**14.3x**	**27.5x**	**22.2x**	**5.4%**	**5.5%**	**4.2%**	**5.1%**
Education															
LRN	Stride Inc.	EW	31.03	1,275	1,368	6.3x	6.2x	7.5x	7.3x	23.1x	22.5x	6.6%	6.8%	8.8%	7.8%
PSON.L	Pearson PLC	EW	10.99	8,280	9,050	11.1x	9.8x	11.1x	9.8x	23.9x	19.7x	4.2%	5.1%	3.7%	4.7%
ATGE	Adtalem Global Education	NC	38.80	1,946	1,776	6.8x	6.3x	6.8x	6.3x	12.2x	10.7x	NA	NA	NA	NA
LOPE	Grand Canyon Education	NC	110.27	5,169	5,020	14.6x	13.3x	15.1x	13.8x	17.8x	16.1x	5.7%	6.3%	5.5%	6.0%
HMHC	Houghton Mifflin Harcourt Co.	NC	8.41	1,069	1,432	12.1x	10.9x	13.1x	11.7x	-18.1x	-29.9x	6.3%	7.0%	3.9%	6.5%
Education						**11.1x**	**9.8x**	**11.1x**	**9.8x**	**17.8x**	**16.1x**	**6.0%**	**6.5%**	**4.7%**	**6.2%**

Note: Fiscal year data used w here calendar year data w as incomplete.
Note: Unadjusted EBITDA for ARMK.K and CPG.L penalizes for client contract amortization
Note: CPG.L and EXHO.PA covered by Jamie Rollo, RTO.L by Edw ard Stanley, VVNT by Erik Woodring, CHTR, ATUS, and CMCSA by Ben Sw inburne, ADP and PAYX by James Faucette, PSON.L by Patrick Wellington
Source: Morgan Stanley Research, Company Data, and Refinitiv
Pricing as of: Apr 22, 2021

Source: Company data, Refinitiv, Morgan Stanley Research estimates NC = Not covered

Top Picks

TRU: Long-Term Growth Runway with Attractive Valuation

Best-in-Class Bureau

- Highest industry growth over last 5 years
  - 9% at TRU (6% at EXPN, 8% at EFX)

Confident in Continued High Single Digit Long Term Growth

- TRU's diversified verticals reduce risk and drive HSD growth
- Modeling 8% organic growth in 2024, implying long runway

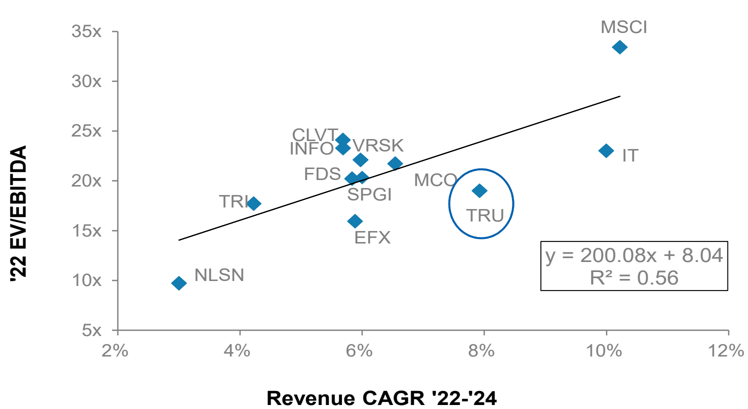
Constructive on a Consumer Lending Snap Back, Reopening

- 4% cons. spending decline in '20 returns to 7% growth in '21
- Reopening should drive recovery in healthcare and insurance

Valuation Attractive

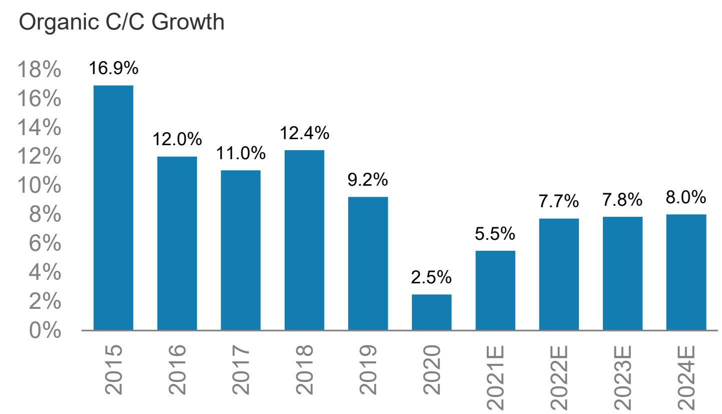
- Trades at ~2 turns discount to Info Svcs peers ex NLSN on '22 std EV/EBITDA
- Attractive on a growth adjusted basis vs. peers

'22 Std EV/EBITDA vs. '22-'24 Revenue CAGR

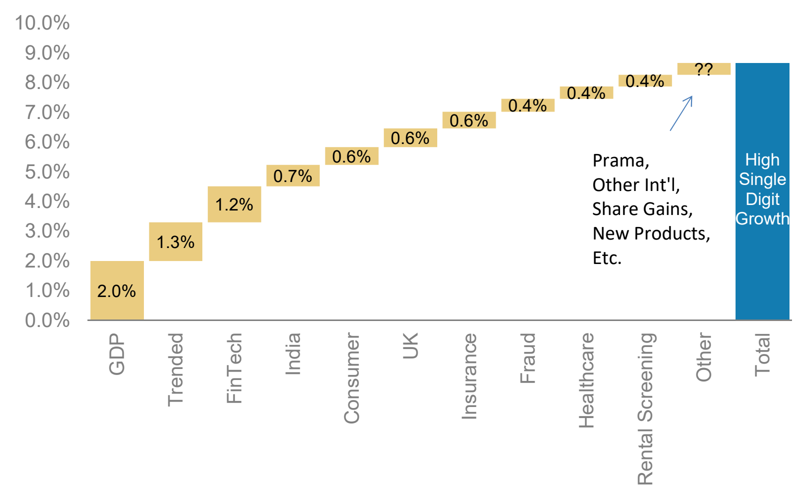


Source: Company Reports, Refinitiv, Morgan Stanley Research estimates

Forecasting a Recovering in 2021



Diversified Revenue Streams Drives HSD Growth in Normal Environment



SPGI/INFO: Combination of High-Quality Assets

Strong Growth Tailwinds Across SPGI Segments

- Ratings: Wide moat provides full capture of growth in global debt
- Index: Shift to passive
- Market Intelligence: Growing use of data
- Platts: Commodity pricing a must have for market participants

INFO Deal Supplements Existing Opportunities and Increases Distribution

- Focus on fast growing markets of ESG, climate, private assets, supply chain, and alternative data
    - Each of these areas growing low-double-digit %
- Doubles the size of SPGI's ESG business, and provides entry into FI indices

We See Sustained Low Double Digit EPS Growth through 2024

- ~6% revenue CAGR and 13% adj. EPS CAGR in 21-24E

Attractive Valuation vs. Peers

- ~5 turns discount on '22 unlevered EV/FCF vs. peers ex. NLSN

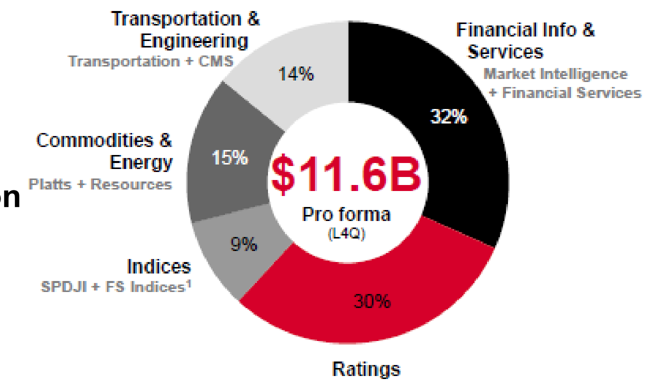
SPGI Growth Framework

Mid to High Single Digit (Rev)

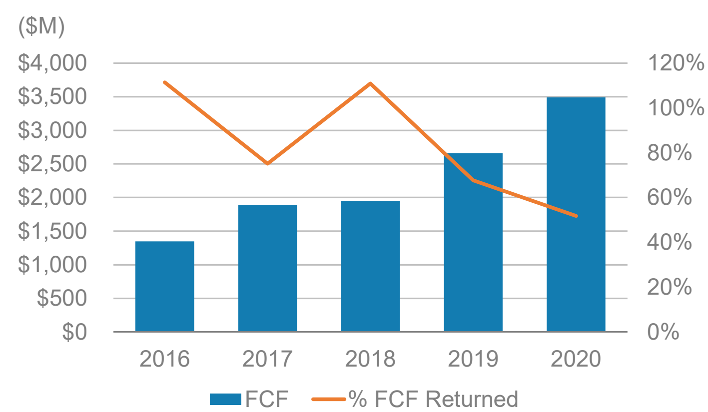
+ Adj. Operating Margin (Low-50s %)

= Low Double Digit (EPS)

Proforma Mix



83% of FCF Returned Over Last 5 Years: PF Capital Return Target of 85% of FCF



Source: Company Reports, Morgan Stanley Research estimates

VRSK: Best-in-Class Business with Attractive Risk-Reward

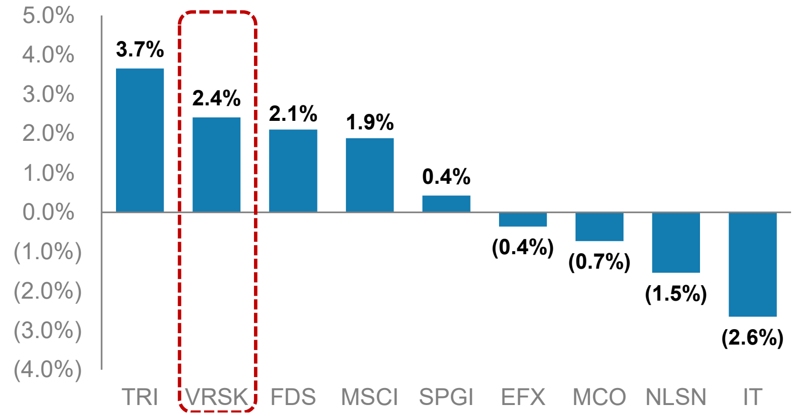
Best in Class Business Model, Sustainable Growth

- VRSK has a strong moat, must-have data sets, pricing power, and high operational leverage; it is also one of the most defensive in Info Services
- Strong P&C pricing environment supports growth in Insurance
- Energy capex recovery supports growth in Energy segment
- VRSK's opportunities lie within: 1) insurance automation, 2) international expansion, and 3) data/analytics usage in Energy

Valuation Attractive on a Risk-Adjusted Basis

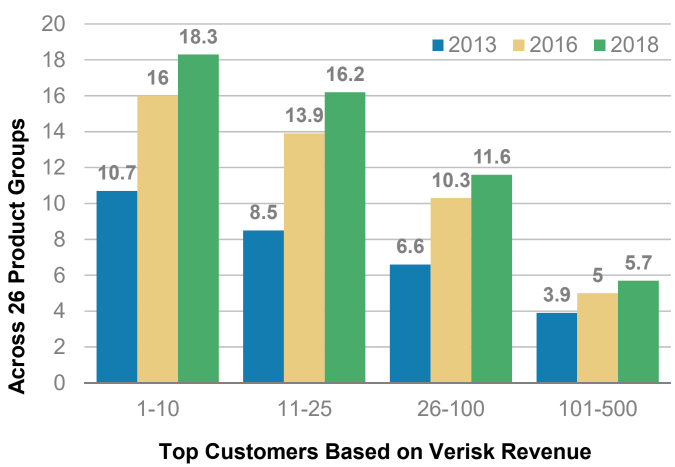
- Trading at ~1.5-turn discount to Analytics peers ex. NLSN on ’22 std. EV/EBITDA despite defensiveness, sustainable growth

#2 Defensive Rank

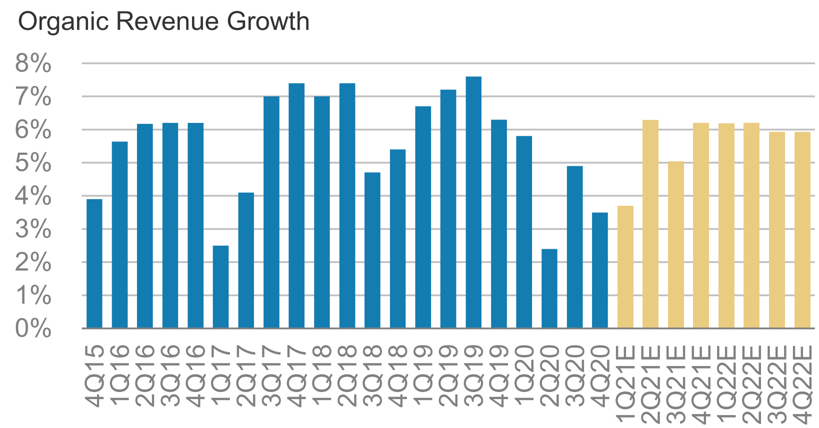


Performance reflects trailing average performance vs. S&P 500 where the S&P 500 was down 5% or more in the prior 4 week period.

Increased Digitization Could Drive Further X-Selling



Organic Growth to Recover and Stabilize



Source: Company Reports, Refinitiv, Morgan Stanley Research.

Morgan Stanley

FOUNDATION

May 2021

Financials Spring Training Teach-In

Payments & Processing

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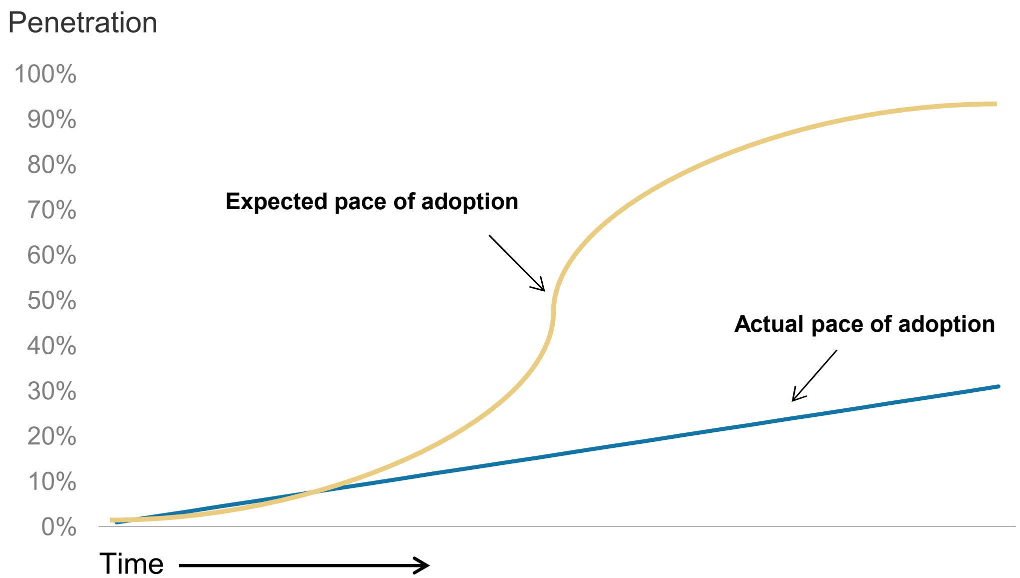
Our Overarching Thesis? The (Slow but Steady) Pace of Change Favors Incumbents



Slow behavior changes and low cost of incumbents makes outright disruption difficult

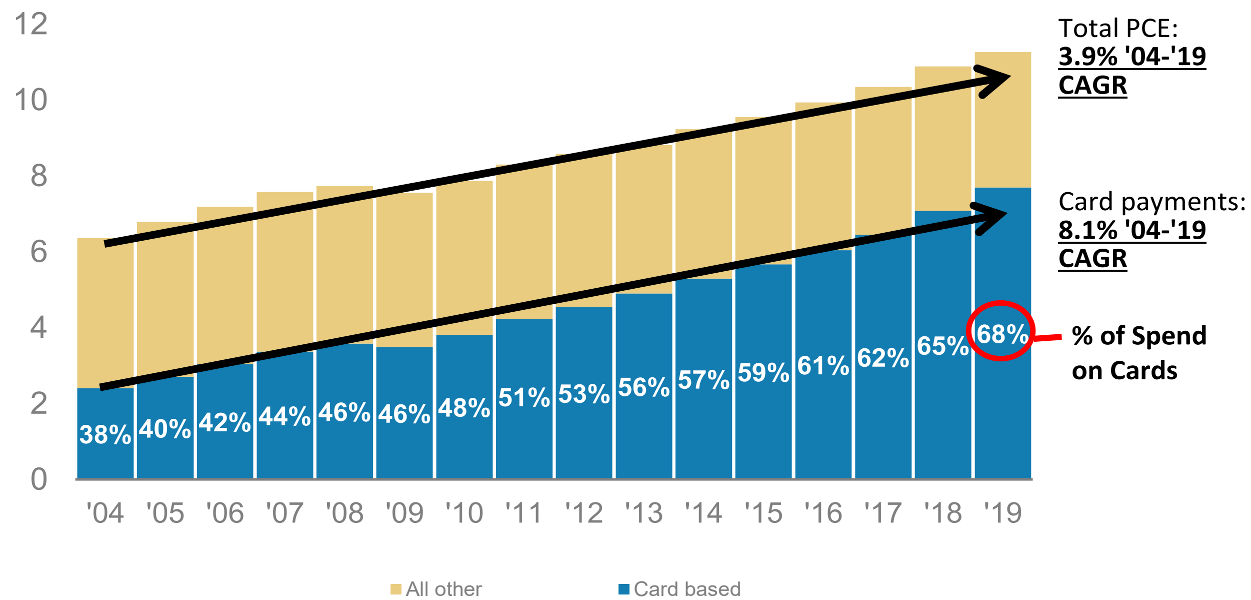
- Adoption cycles tend to be very long, making surprising disruption difficult
- Slow adoption cycles makes it difficult for disruptors to scale and benefit from cost efficiencies
- Typical efforts to disrupt current payment methods focus primarily on redistribution of fees, but incumbent networks are already low cost providers

Source: Morgan Stanley Research

Card Payments Is a Case in Point

- Consumer behavior shift decades in the making
- Linear, not "S curve" adoption
- US card payment growth has been robust 8.1% since 2004 despite relatively high card penetration even at that point

Total US Payment Volume ($tr)

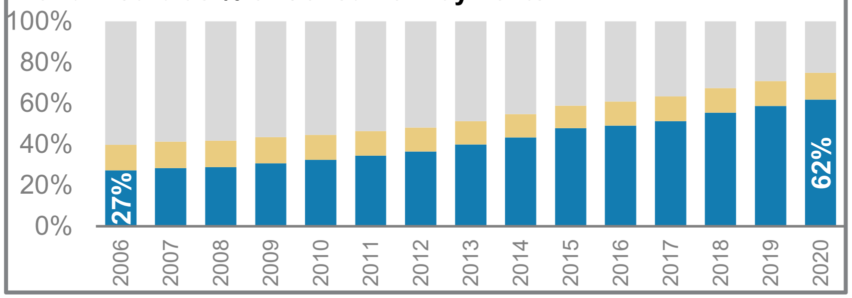


Source: The Nilson Report, Morgan Stanley Research.

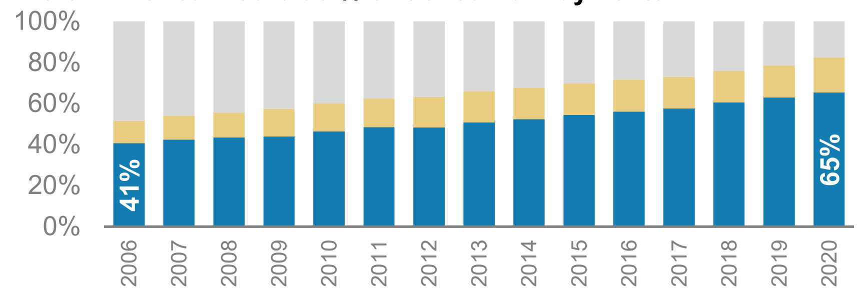
Pace of Card Adoption Varies Globally…Still a Long Way to Go

■ Card ■ Electronic/ACH ■ Paper

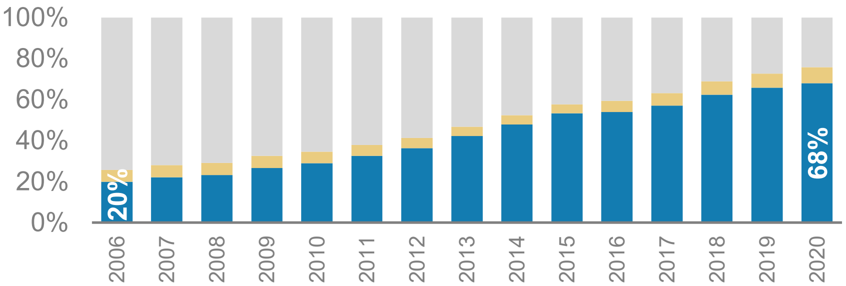
World – Card as % of Consumer Payments



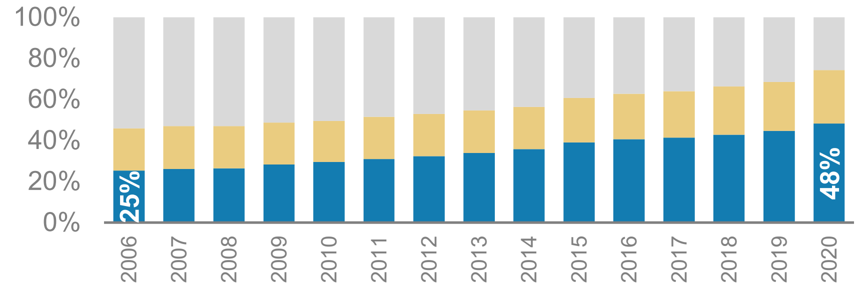
North America – Card as % of Consumer Payments



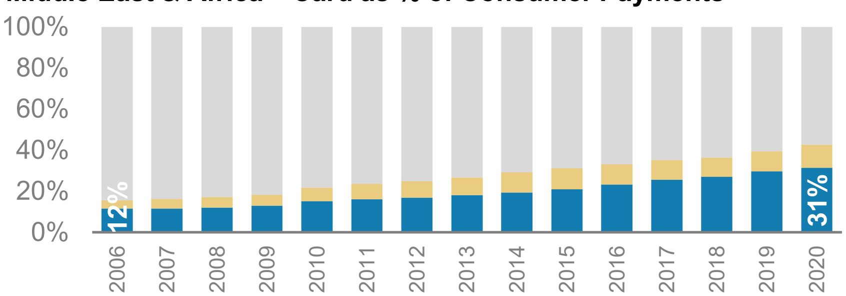
APAC – Card as % of Consumer Payments



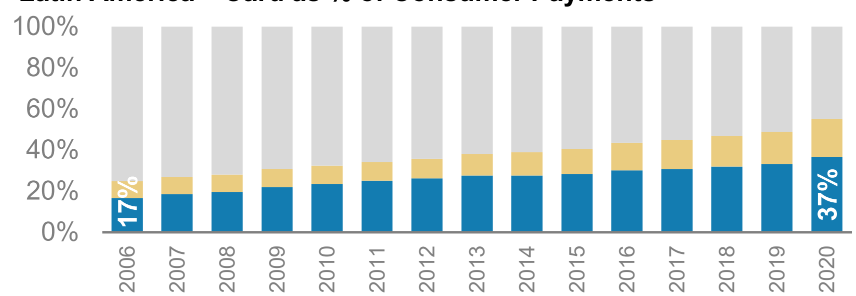
Europe – Card as % of Consumer Payments



Middle East & Africa – Card as % of Consumer Payments



Latin America – Card as % of Consumer Payments



Source: Euromonitor, Morgan Stanley Research.

Each Subsector Represents a Different Take on These Secular Shifts

Subsector / Total Cap	Key Trend	Companies Covered
Card Networks $884bn	Levered to global consumer shift from cash to card. Low competitive pressure. Very high margin.	**V, MA**
Merchant Acquirers $699bn	Levered to consumer shift from cash to card. Exposures vary in geography and merchant size. Moderate competitive pressure. High margin.	**PYPL, FIS, FISV, GPN, SQ, RPAY, FOUR, EVTC**
Payments Hardware	Levered to global merchant trend towards accepting cards, plus replacement cycle. Competitive and structurally declining as sales go online. Low margin.	SQ and First Data (now part of FISV) sell their own readers.
Fintech Providers $211bn	Levered to outsourced tech spend at financial institutions.	**FIS, FISV, QTWO, SSNC, LPRO**
Buy Now Pay Later $22bn	Dependent on consumer shift from cash to card and preference toward digital-native financial alternatives. High competitive pressure. High investment.	**AFRM.** PYPL also plays here.
Fleet / Specialized Payments $37bn	Levered to B2B shift from cash to card. Low-moderate competitive pressure. High margin.	**FLT**, **WEX, VRRM**
Mortgage $51bn	Levered to mortgage originations market. High competitive pressure. Highly cyclical margin profile.	**HMPT, LDI, RKT**
HCM / Payroll $120bn	Levered to HR and business operations outsourcing. Moderate competitive pressure. Margins vary.	**ADP, PAYX.** Others include TNET, PAYC, PCTY, and NSP.
Money Transfer $11bn	Exposed to transition to electronic from cash transfer. Highly competitive. Low margin.	**WU.** MGI and PYPL also provide with Xoom asset.

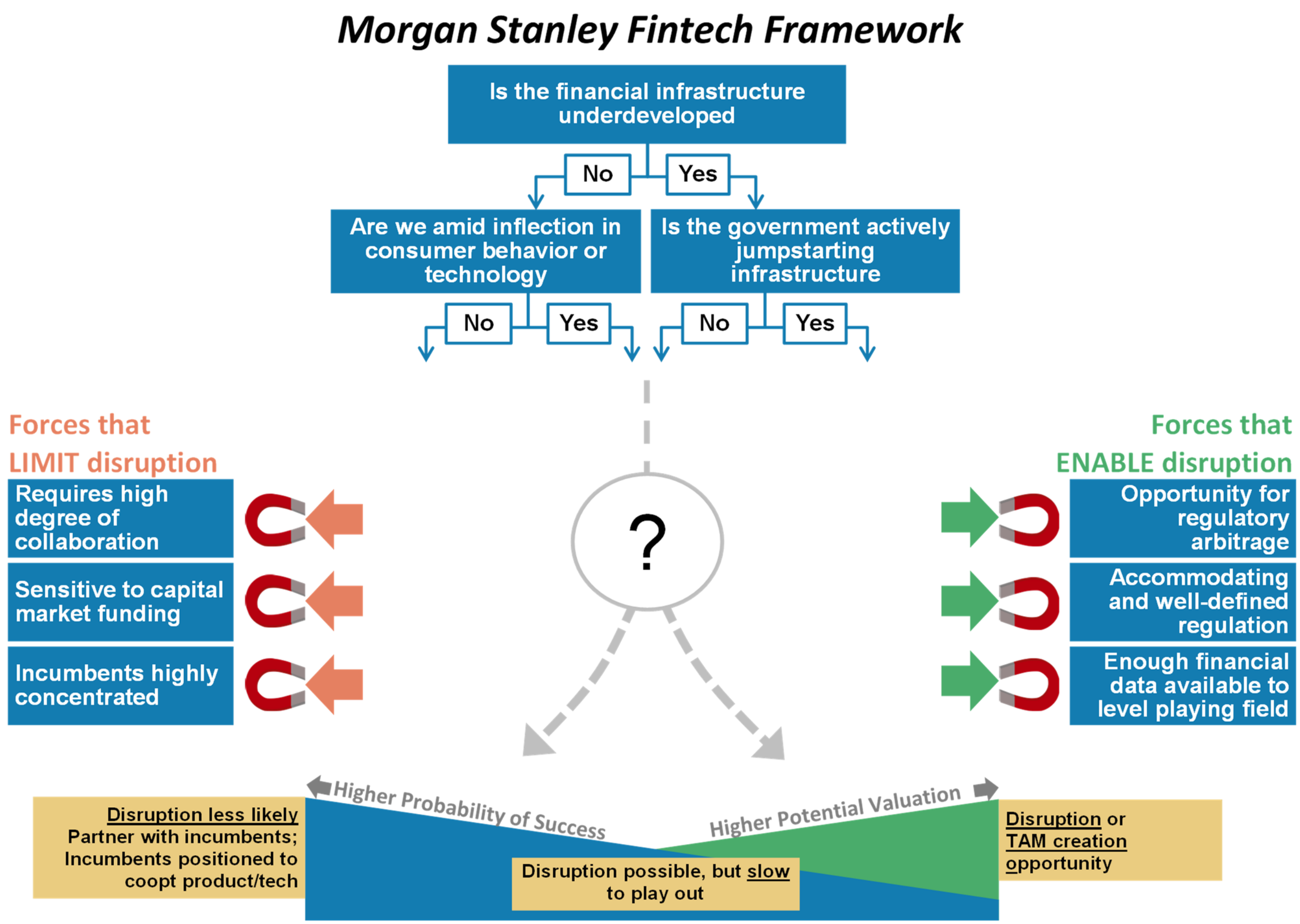
Each Subsector Represents a Different Take on These Secular Shifts

Our top picks (Overweights)

Underweights

	Companies Covered
consumer shift from cash to card. pressure. Very high margin.	**V, MA**
mer shift from cash to card. geography and merchant size. itive pressure. High margin.	**PYPL, FIS, FISV, GPN, SQ, RPAY, FOUR, EVTC**
merchant trend towards accepting ment cycle. Competitive and ing as sales go online. Low margin.	SQ and First Data (now part of FISV) sell their own readers.
urced tech spend at financial	**FIS, FISV, QTWO, SSNC, LPRO**
nsumer shift from cash to card and d digital-native financial alternatives. essure. High investment.	**AFRM**. PYPL also plays here.
hift from cash to card. Low- itive pressure. High margin.	**FLT**, **WEX, VRRM**
age originations market. High sure. Highly cyclical margin profile.	**HMPT, LDI, RKT**
d business operations outsourcing. itive pressure. Margins vary.	**ADP, PAYX.** Others include TNET, PAYC, PCTY, and NSP.
tion to electronic from cash transfer. e. Low margin.	**WU.** MGI and PYPL also provide with Xoom asset.

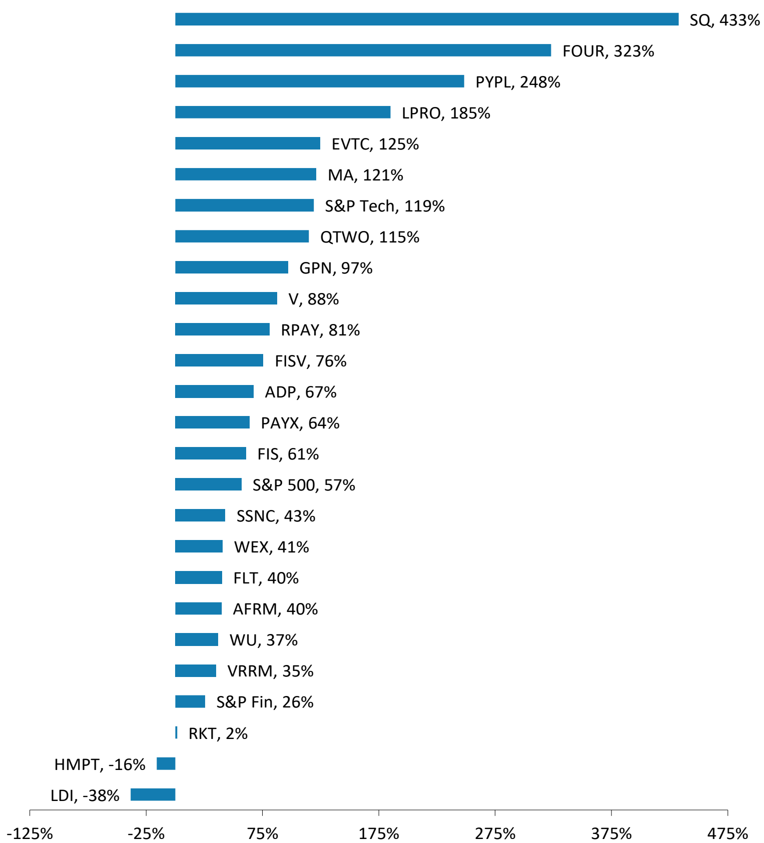
Our Framework for Evaluation Fintechs: Fintech Gauntlet



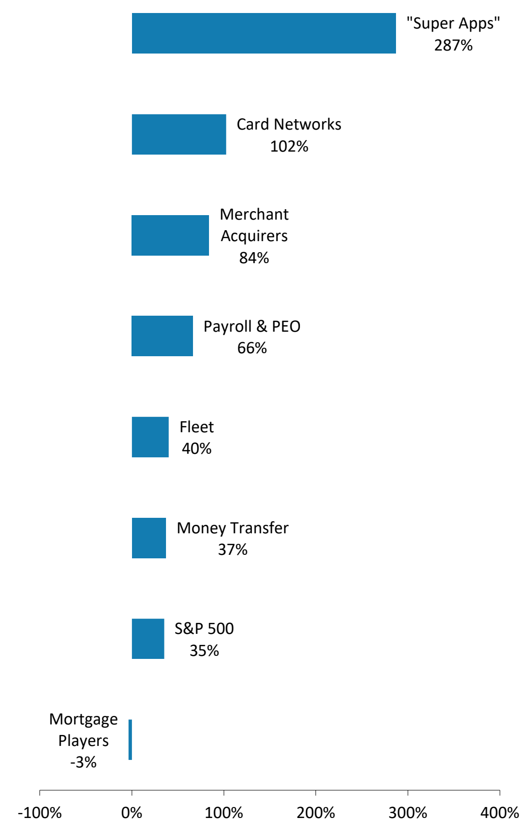
Source: Morgan Stanley Research

Best Long-Term Performers? Performance by Stock and Subsector

3-Year Performance, by Stock



3-Year Performance, by Subsector



Source: Thomson Reuters, Morgan Stanley Research

Key Growth Drivers in Payments & Fintech

1 **Global PCE Growth**

2 **Electronification of Payments**

- Secular shift in consumer behavior
- eCommerce & mobile
- Government push – India & China
- Penetrating B2B payments

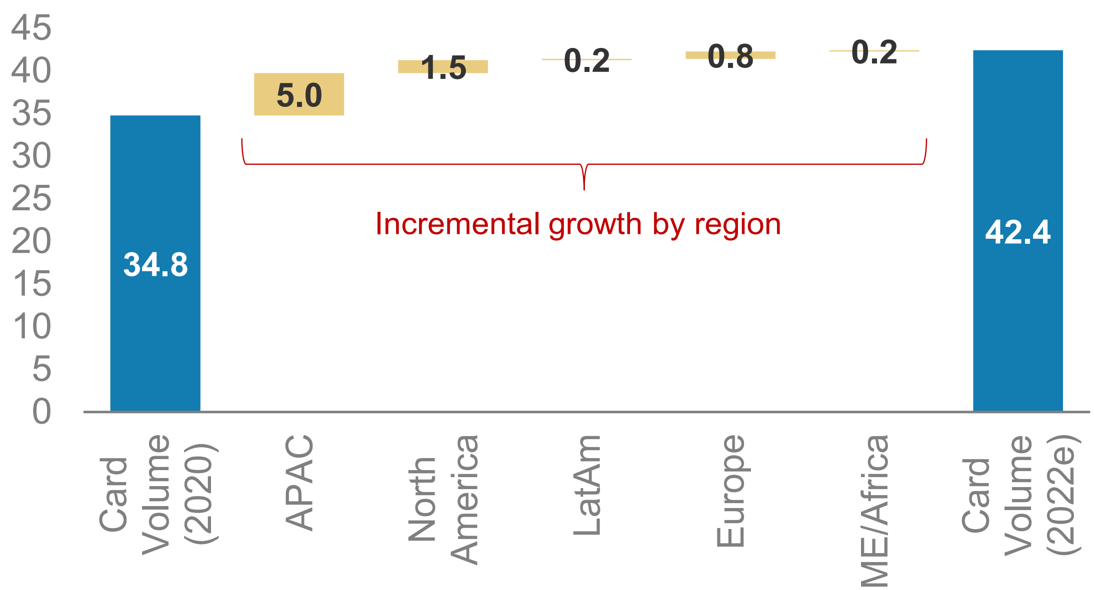
3 **Natural Operating Leverage**

Growth Driver 1: Global PCE Growth

PCE Growth Is the Underlying Driver for Payments

- Payments industry growth is derived by real PCE growth + inflation + shift to electronic payments
- We look for global card volumes to grow at a 10.4% CAGR from CY20 to CY22, driven by 7.2% in PCE growth and an additional 3% growth from greater card penetration
- Look for HSD/LDD card purchase volume growth in most regions

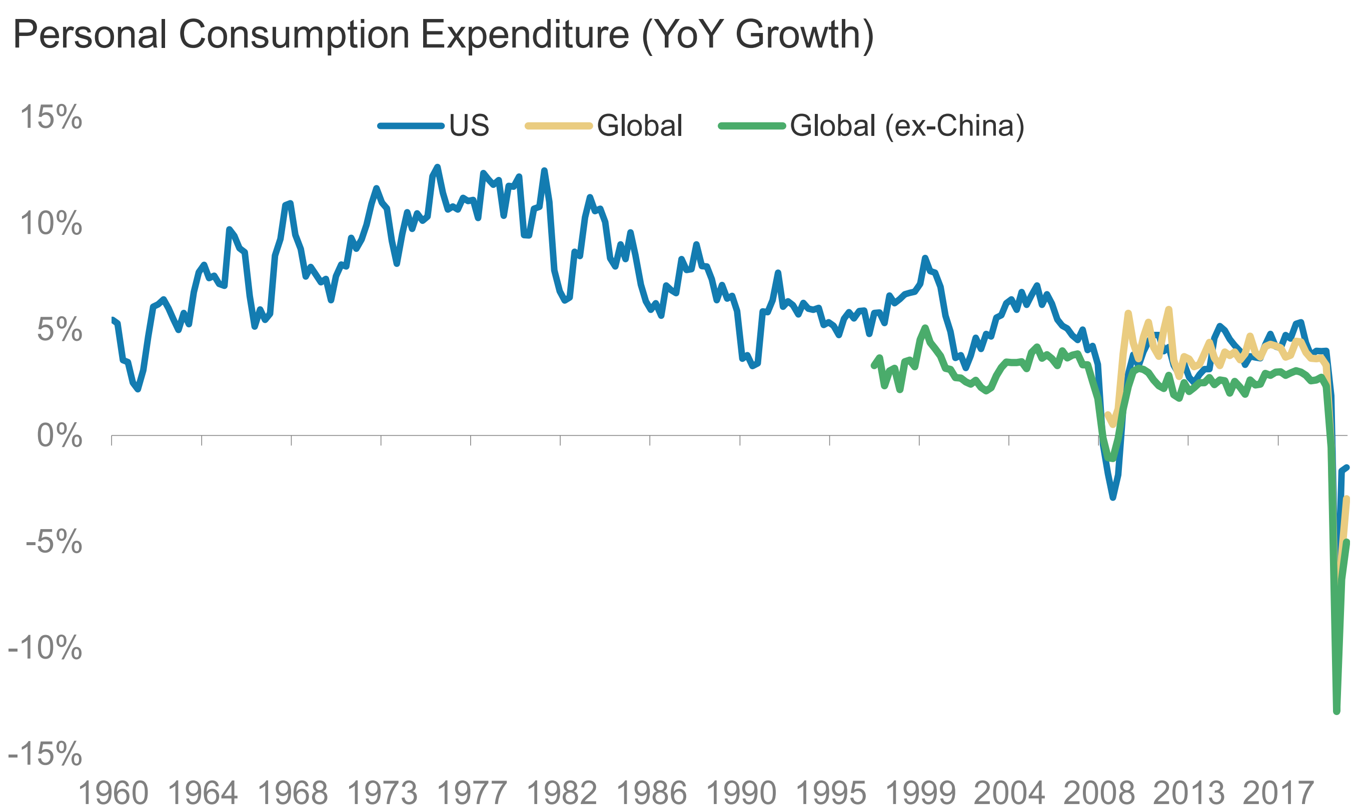
Card Purchase Volume ($T, ex-FX)



Source: Euromonitor, Morgan Stanley Research.

Growth Driver 1: Global PCE Growth

Consumer Spend Relatively Resilient Through Cycles

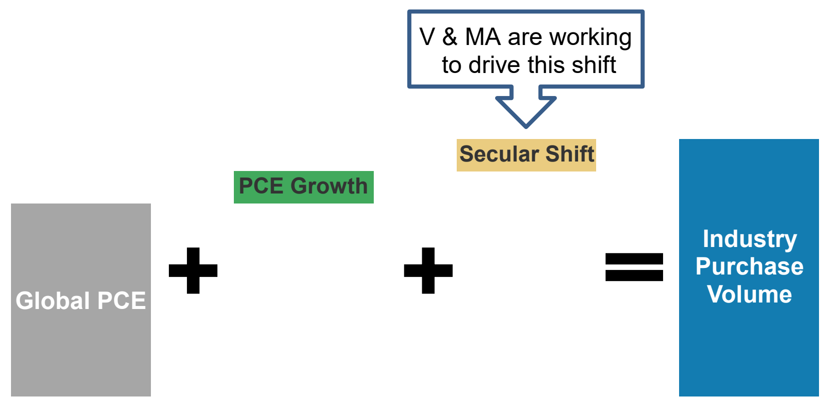


Source: FRED, Morgan Stanley Research.

Growth Driver 2: Electronification of Payments

Secular Shift in Consumer Behavior Accelerated by Covid-19

- Mostly about consumer behavior shift, but V/MA do what they can to move it along:
    - E.g. through expanding acceptance to new categories such as Taxi cabs
        - "Most of those people that are using their cards much more frequently in taxi cabs are carrying less cash" – Mastercard
    - E.g. through technology, V/MA efforts in mobile payments & tokenization
        - "We look at [tokenization] more as a vehicle for opening up a bunch of transaction categories and enabling this digital shift" – Visa
- Covid-19 drove a 3-5 year step function increase in card penetration

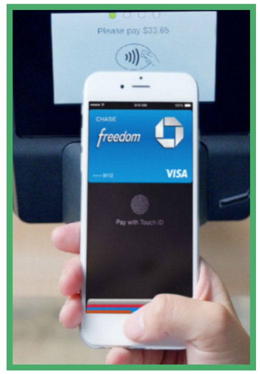


Source: The Nilson Report, Morgan Stanley Research.

Growth Driver 2: Electronification of Payments

eCommerce and mCommerce Extending the Reach of Card Payments

mPOS
Mobile POS leverages the computing ability of a mobile device to process payments. e.g. Square dongle plug-in

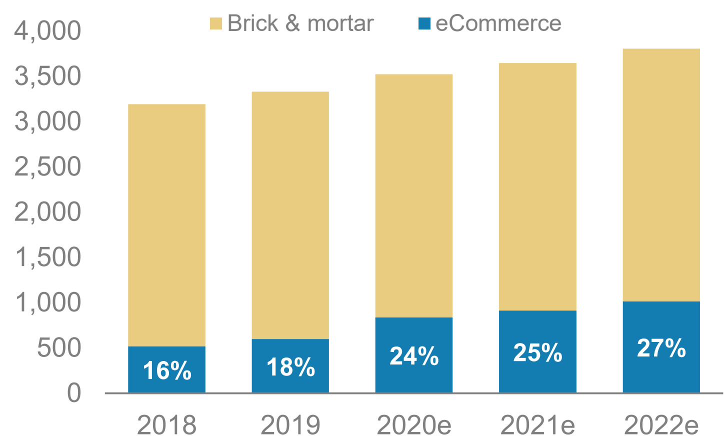


mPayments
Mobile phone used as the form factor (instead of a card) to make payments at the point-of-sale (POS). e.g. ApplePay

mCommerce
Mobile commerce is purchasing of good/services through the mobile browser or within a mobile app. E.g. eBay transaction

- Mobile as a form factor for electronic payments
  - ApplePay, Android Pay, Samsung Pay, etc.
  - QR code based mobile payments in developing markets
- Mobile Commerce
  - In app or browser based commerce
  - Digital wallets and in app experience are helping improve conversion rates
- eCommerce
  - Online continues outpace overall retail growth

US Retail Market ($B)



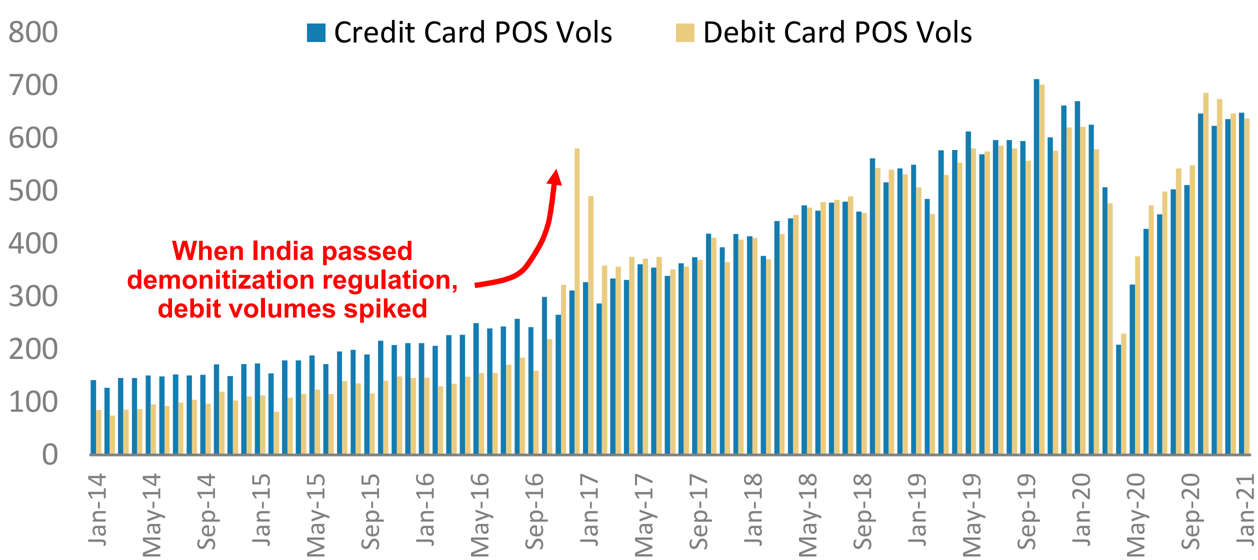
Source: Morgan Stanley Research

Growth Driver 2: Electronification of Payments

Government Push of Electronic Payments

- In India, demonetization has helped accelerate card transaction growth
- In China, we are closer to market opening up but challenge is building acceptance against entrenched UnionPay, Alipay, Wechat Pay
- Governments around the world have financial inclusion on their agenda with reduction in tax evasion a key benefit

Credit and Debit POS Transactions in India (in Millions)



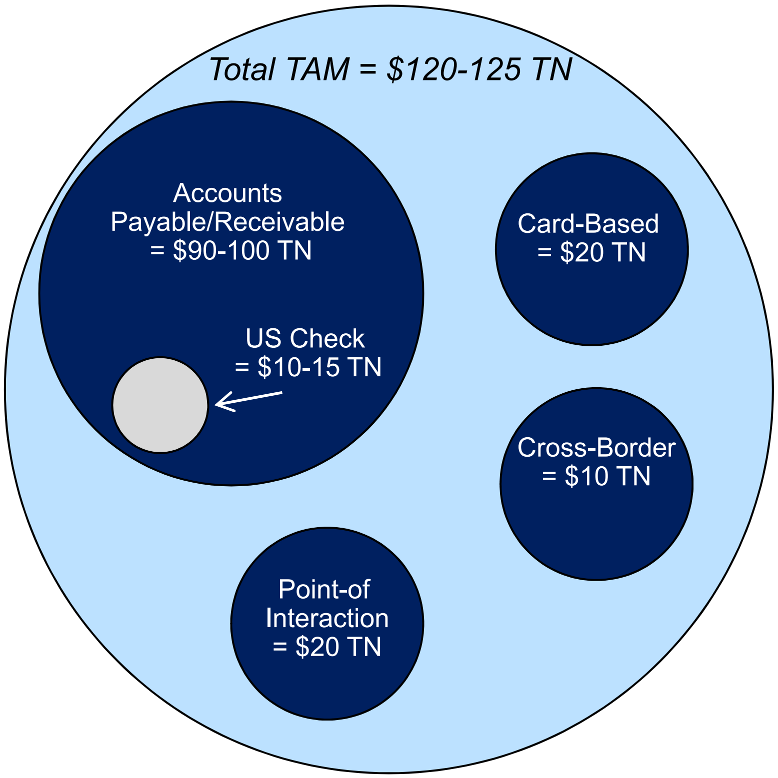
Source: Reserve Bank of India, Morgan Stanley Research.

Growth Driver 2: Electronification of Payments

B2B Penetration of Payments

- **What are the benefits?**
  - Transaction speed and accuracy
  - Improved transaction reporting / tracking
  - Managing accounts payable and receivables (AP/AR)
  - Minimize fraud/waste, increased workforce automation
- **How big is the opportunity?**
  - Networks size TAM at $100T+ of volumes
  - Most of the opportunity is AP/AR solutions
- **Key debates/questions:**
  - Is the B2B sandbox big enough for all players?
  - How will B2B economics differ from consumer payments?
  - How will Payments platforms and Software/Tech providers interact?
  - Earlier in adoption (likely a 5- to 10-year ramp)
- **Stocks most relevant to B2B payments:**
  - Networks: V, MA
  - B2B/Specialized platforms: FLT, WEX
  - Others (infrastructure providers): FIS, PYPL, SQ

B2B Opportunity At-a-Glance



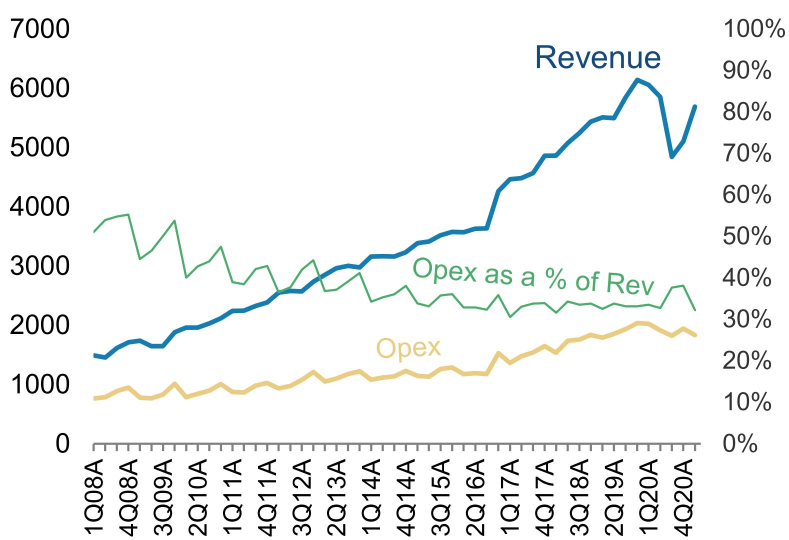
Note: B2B market size components are not all comparable pieces, and therefore do not sum to the full TAM. Source: Company data, Morgan Stanley Research

Growth Driver 3: Natural Operating Leverage

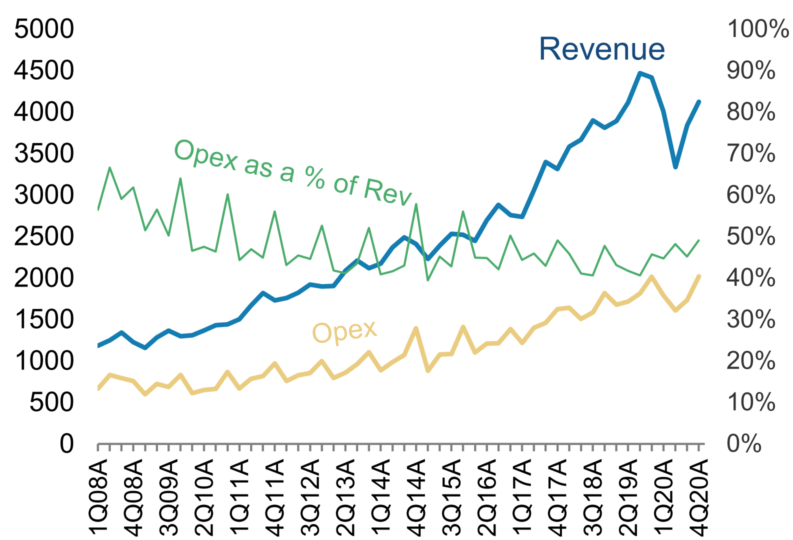
Scale Puts Upward Pressure on Margins

- Payments companies broadly have highly scalable infrastructures, low capex
- Varying levels of sales intensity, by subsector
- Secular growth benefits margins

V Revenue, Opex in $mn



MA Revenue, Opex in $mn

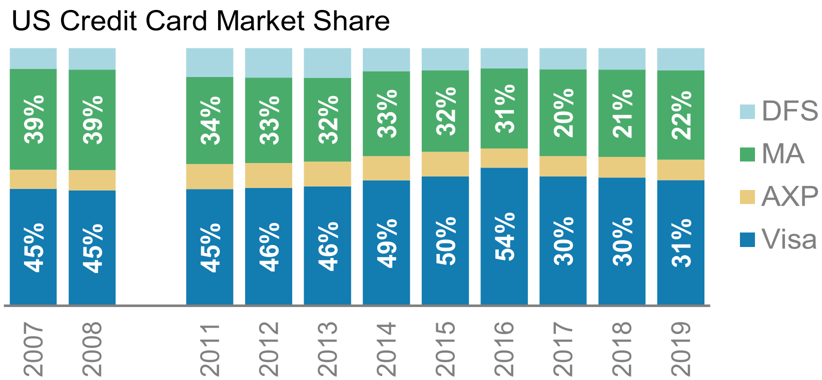


Source: Company data, Morgan Stanley Research.

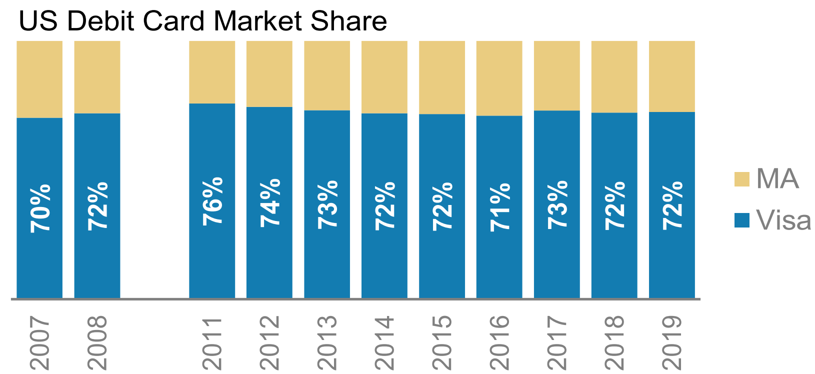
Growth Driver 3: Natural Operating Leverage

Networks See Greatest Scale Given Market Concentration

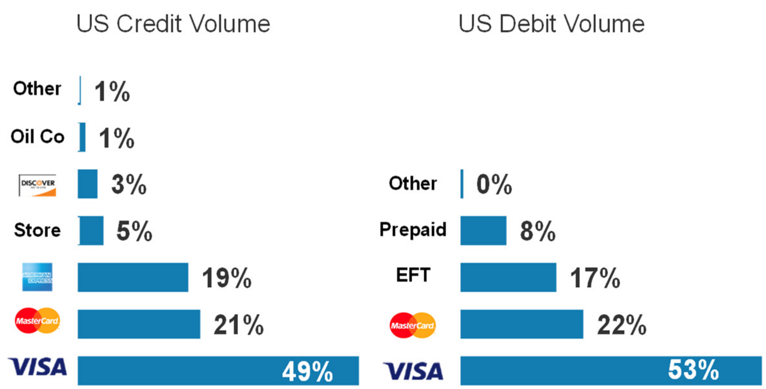
US Credit Volumes Over Time by Major Network



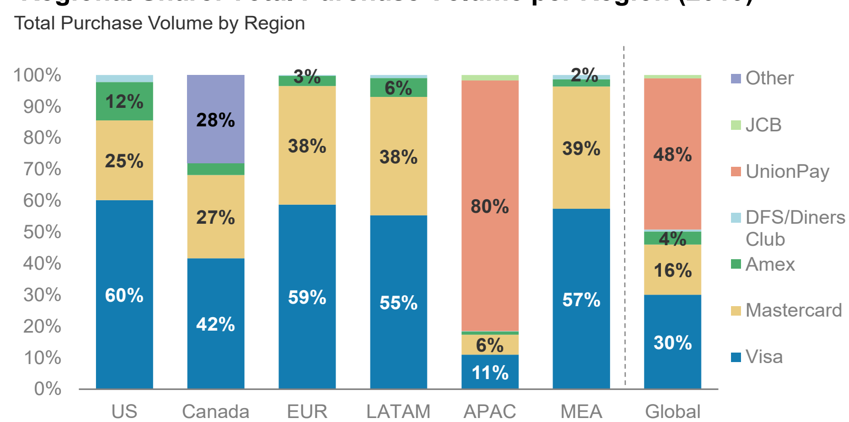
US Debit Volumes Over Time by Major Network



US Share: Credit and Debit Volume (2019)



Regional Share: Total Purchase Volume per Region (2019)



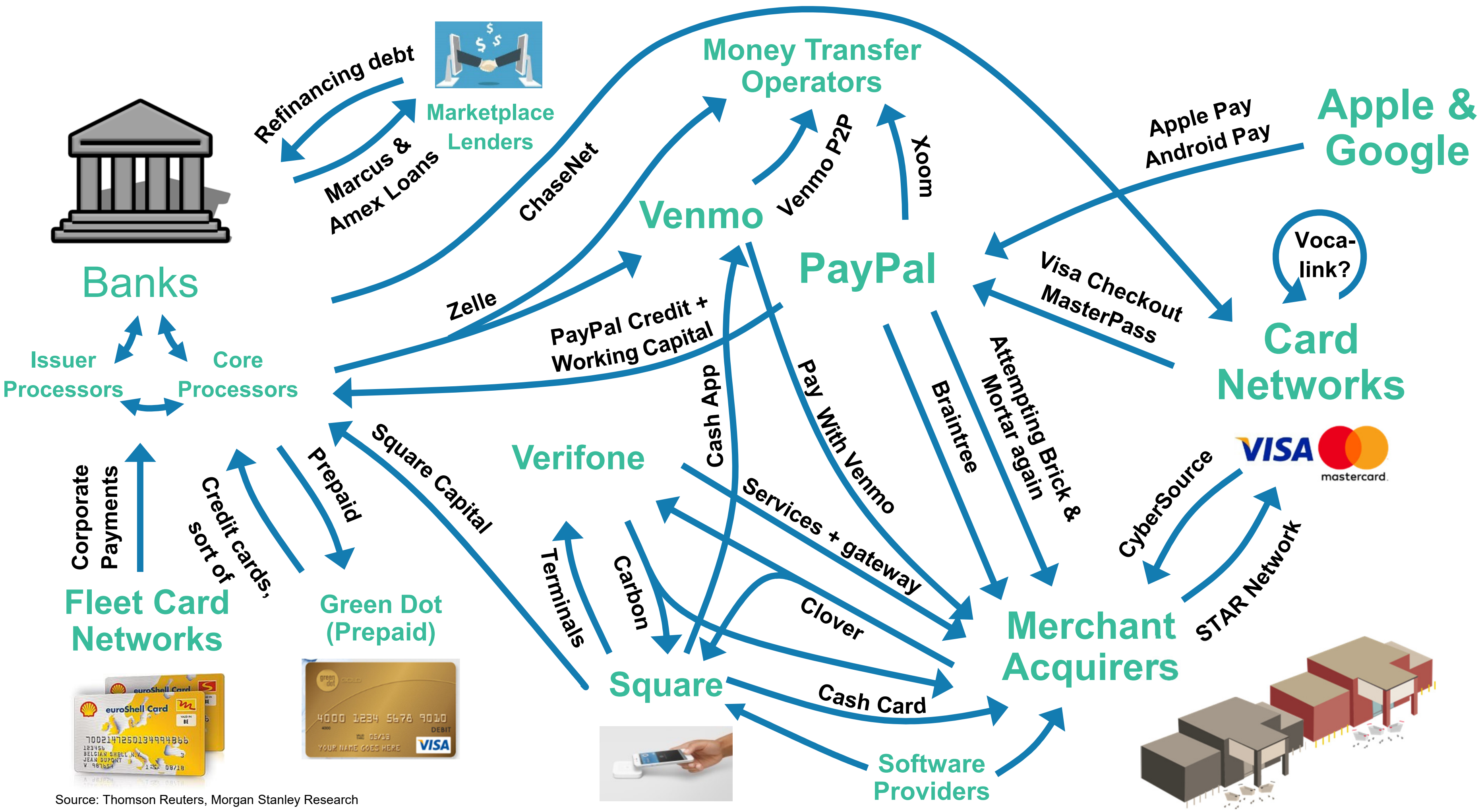
Source: The Nilson Report, Morgan Stanley Research.

Key Themes in Payments & Fintech

1. Turf Wars
2. Heightened Investment in Payments
3. Fintech Providers: Private vs. Public Tech Spend
4. Rise of the Super Apps
5. HCM / Payroll Processing: Macro / Employment vs. Competitive Dynamics
6. Remittances: Secular Challenges

Key Theme 1: Turf Wars

Turf Wars



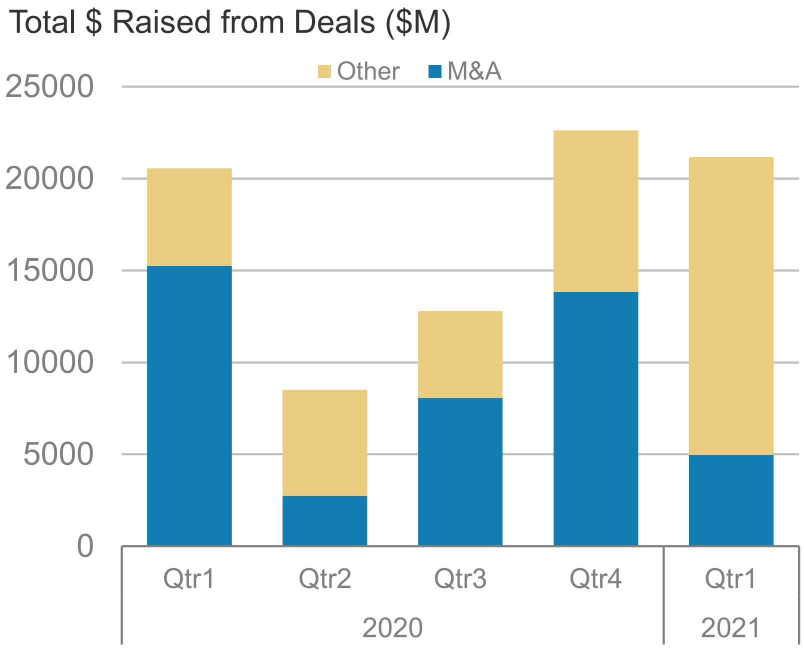
Source: Thomson Reuters, Morgan Stanley Research

Key Theme 2: Heightened Investment in Payments

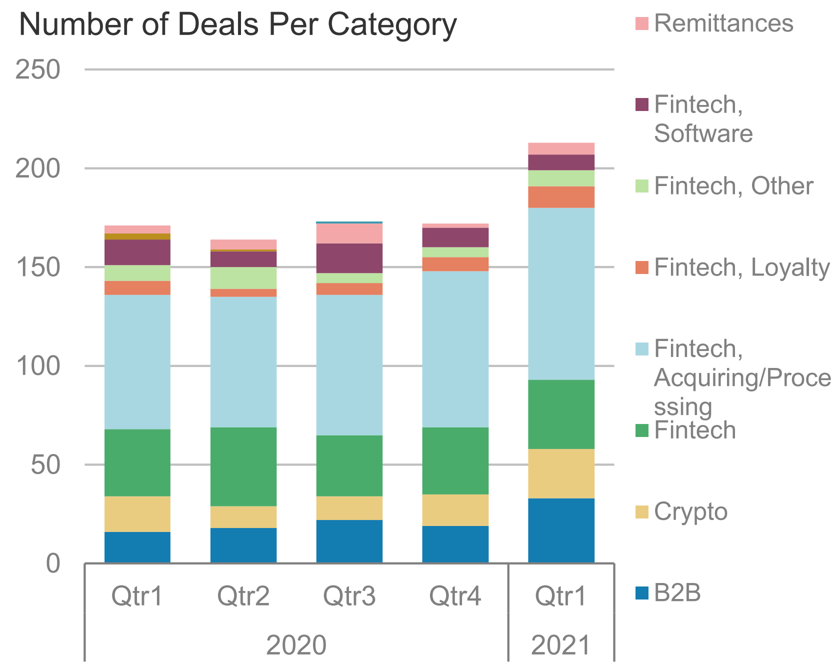
Investment in Payments on the Rise

- Over $65B were invested in the broader payments space in the last 12 months, $29.6B of which was tied to M&A and the remainder of which was other forms of capital raises (IPO, investments, venture capital, debt raises, etc.).

Total Amount Invested into Payments



Investment By Subsector in Payments



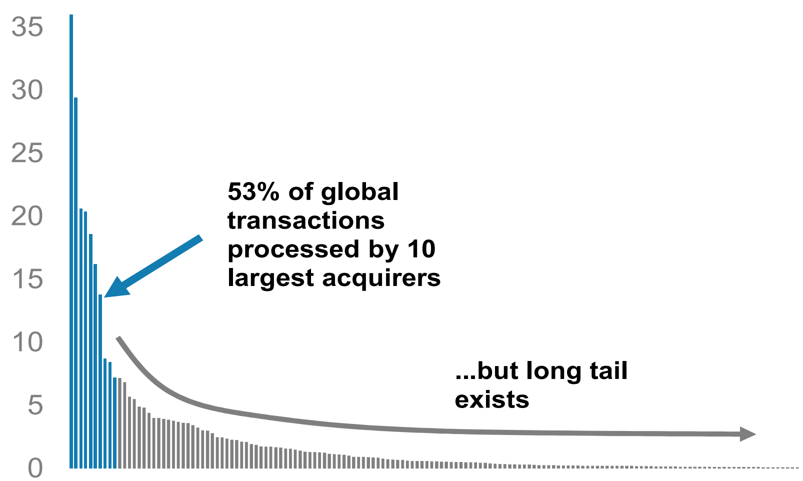
Source: The Nilson Report, Morgan Stanley Research

Key Theme 2: Heightened Investment in Payments

Merchant Acquirers: Ongoing Consolidation

- Pace of M&A has picked up, driven by changing technology (mobile/ecommerce), new distribution models (software dealers and developers), and international expansion
- Expect ongoing consolidation, but pace likely to slow near term as key players digest large acquisitions

2019 Global Processed Transactions by Merchant Acquirer (bn)



Source: Thomson Reuters, Morgan Stanley Research

Growing List of Announced Acquisitions:

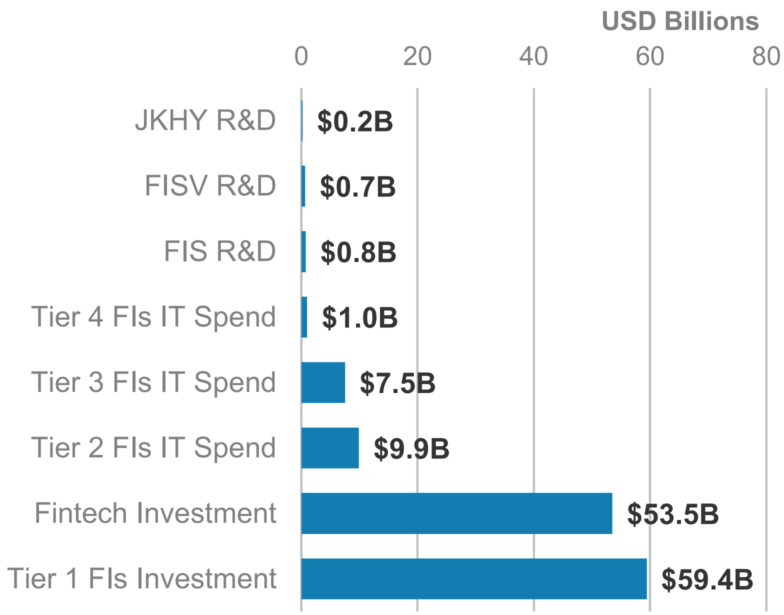
TSYS (2019, $22bn)
Worldpay (2019, $35bn)
First Data (2019, $22bn)
Jetpay (2018, $184mn)
LevelUp (2018, $390mn)
iZettle (2018, $2bn)
Six Payment Services (2018, $3bn)
Weebly (2018, $365mn)
Trustly (2018, 850mn)
Blackhawk Network (2018, $3bn)
CardConnect (2017, $750mn)
Worldpay (2017, $10bn)
Active Network (2017, $1bn)
Cayan (2017, $1bn)
TIO Networks (2017, $233mn)
Cambridge Global Payments (2017, $666mn)
BluePay (2017, $760mn)
Intermex (2017, $260mn)
DCPayments (2016, $460mn)
Higher One (2016, 260mn)
Vocalink (2016, $920mn)
TransFirst (2016, $2bn)
Heartland (2015, $4bn)
Pay.on (2015, $200mn)
Visa Europe (2015, $23bn)
Wincor Nixdorf (2015, $2bn)
Electronic Funds Source (2015, $2bn)
Linxens (2015, $2bn)
Xoom (2015, $800mn)
Fundtech (2015, $1bn)
Trustwave (2015, $810mn)
FreeCharge (2015, $400mn)
Paydiant (2015, $280mn) ...

Key Theme 3: Private vs. Public Tech Spend

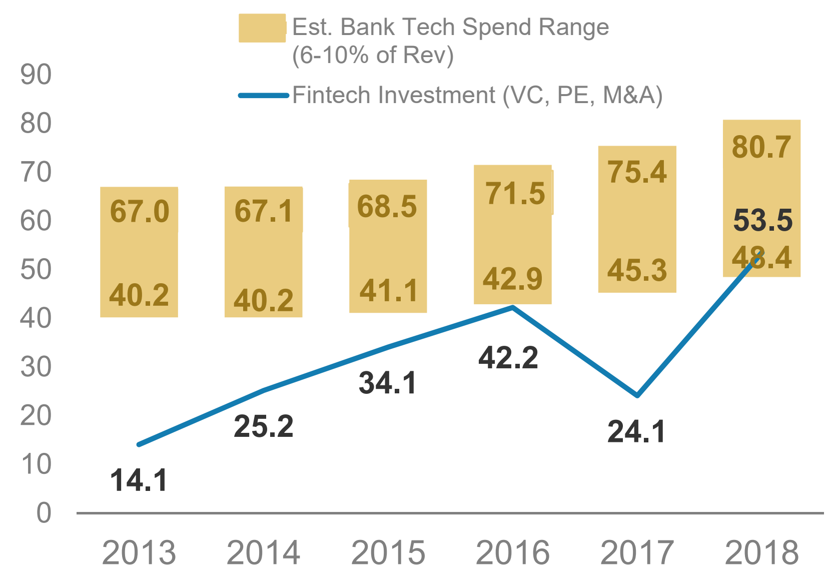
Fintech Providers: Competitive Tech Spend Demands Higher Investment

- Fintech investment continues to climb, achieving greater levels than the amount core processors spent on R&D and that tier 2-4 banks combined spent on technology in 2018.
- Investment in US fintech from venture capital, private equity and M&A grew at a 31% CAGR from $14.1B to $53.5B. This suggests greater need for investment from incumbent FI technology providers like FIS and FISV.

Technology Investment By Market Players (2018)



Spend ($B)



Source: Company data, Morgan Stanley Research.

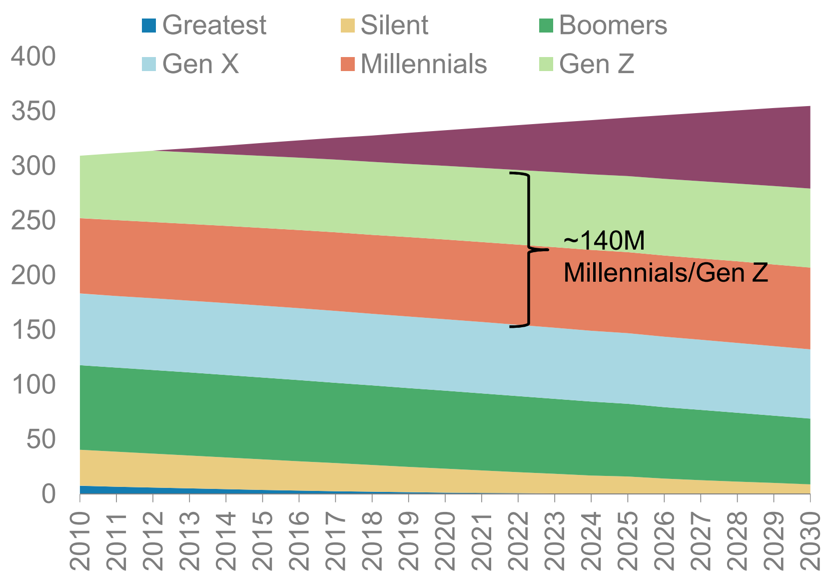
Key Theme 4: Rise of the Super Apps

Maturing Millennial and Gen Z Populations

- Prior to Covid-19, our Morgan Stanley Economics team forecasted that by CY30, Gen Y would make up 19% of total spend (ex-healthcare) and Gen Z would rise to 18% of spend, each contributing ~$2T in consumer spend
- A number of payments providers (e.g., Cash App, PayPal, Klarna, Affirm) have emerged with the aim of capturing and providing broad-based financial services to these populations and the underbanked

Gen Y/Z Becoming Outsized Portion of Adult Population…

US Population (M)



Source: Morgan Stanley Economics Team

…and Total US Spend

By CY30, Gen Y/Z to make up ~37% of US consumer spend (ex-healthcare)

% of Total Spending ex. Healthcare	18-25	25-34	35-44	45-54	55-64	65-74	75 Yrs +
1995	11%	25%	25%	16%	11%	7%	5%
2000	11%	22%	25%	19%	11%	7%	5%
2005	11%	20%	23%	20%	14%	7%	5%
2010	10%	20%	21%	20%	16%	7%	5%
2015	10%	20%	18%	20%	17%	9%	6%
2020	9%	20%	18%	19%	17%	11%	6%
2025	8%	19%	19%	17%	17%	13%	8%
2030	8%	18%	19%	17%	15%	14%	9%
2035	7%	17%	19%	17%	15%	14%	11%
2040	7%	16%	18%	18%	15%	13%	13%

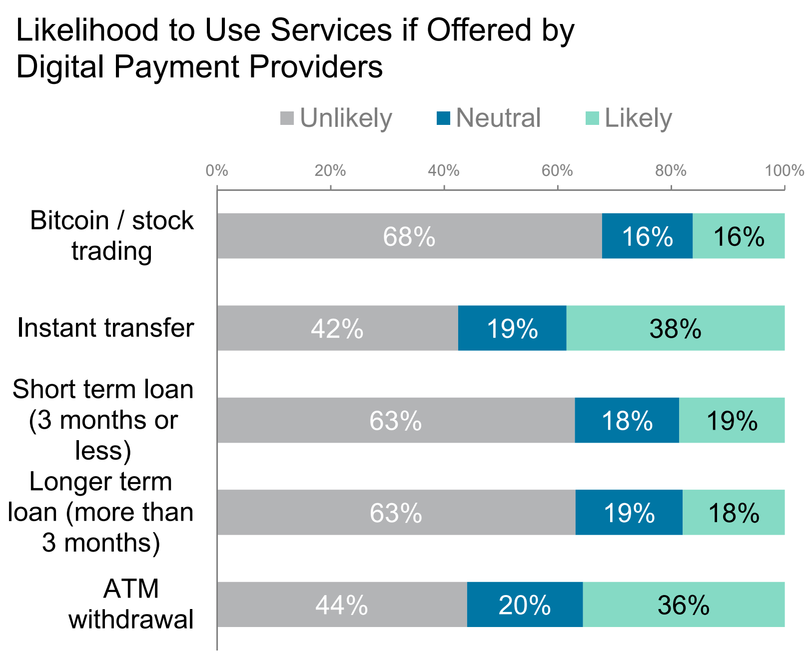
Key:	Gen Y	Gen Z

Key Theme 4: Rise of the Super Apps

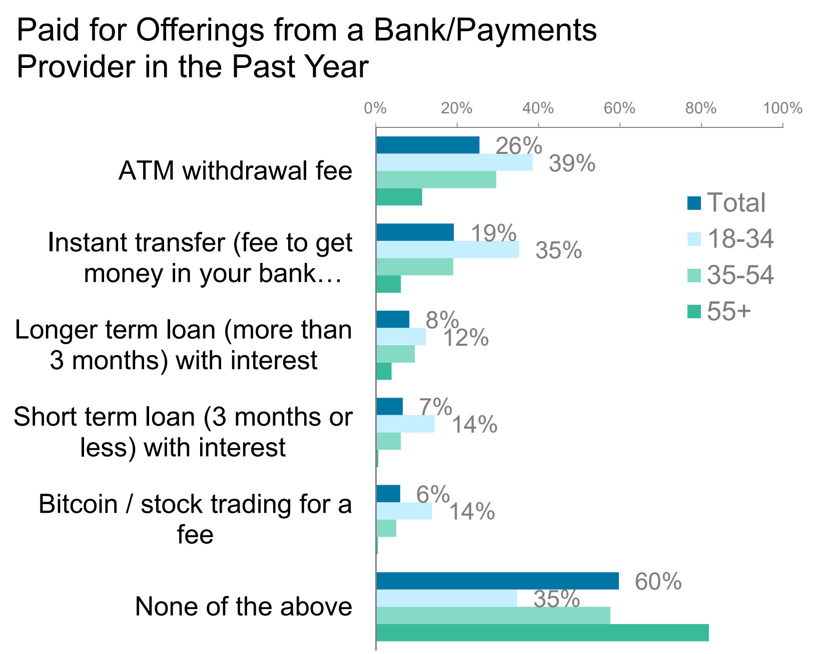
Interest In Financial Offerings from Payment Providers

- In our latest Consumer Payment Preferences Survey, consumers indicated that they were most likely to use instant transfer and ATM withdrawal services from payments providers; we suspect the suite of product offerings is likely to grow
- Gen Y/Z'ers are adopting these offerings faster than the rest of the population

Interest in Financial Products from FinTechs



Gen Y/Z'ers Among Early Adopters



Source: AlphaWise, Morgan Stanley Research

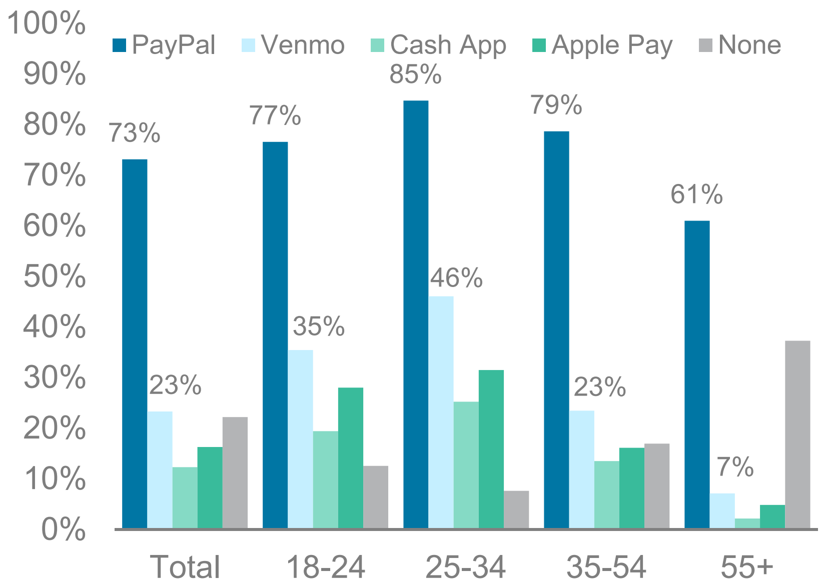
Key Theme 4: Rise of the Super Apps

Providers at Different Starting Points in Race to be Super Apps

- While the number of providers hoping to serve these demographics is growing, they are starting with different consumer bases
- PayPal and Venmo remain the most popular digital wallets among Gen Y and Z'ers but competition is intensifying

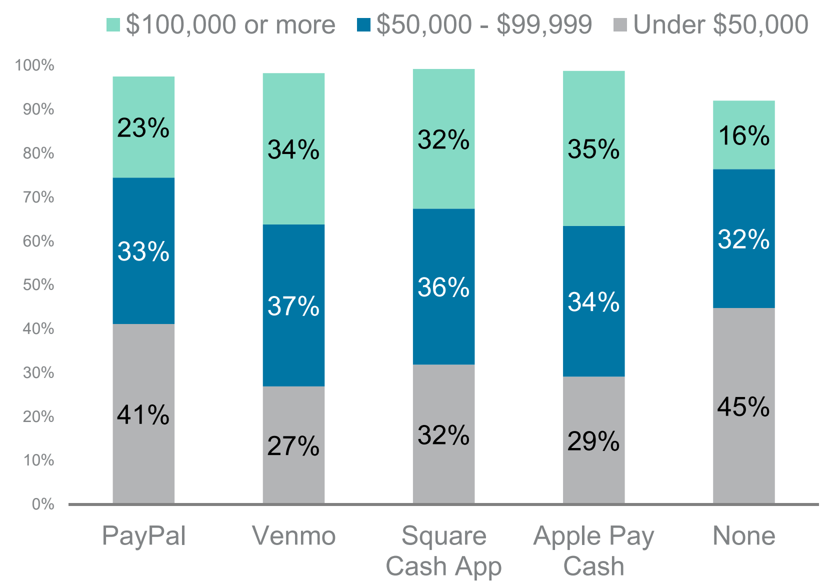
PayPal and Venmo Lead In Gen Y/Z Adoption

Have Payment Service(s) (Among Total)



Income Distribution Similar Among Providers

Income Distribution of Payment Services



Source: AlphaWise, Morgan Stanley Research

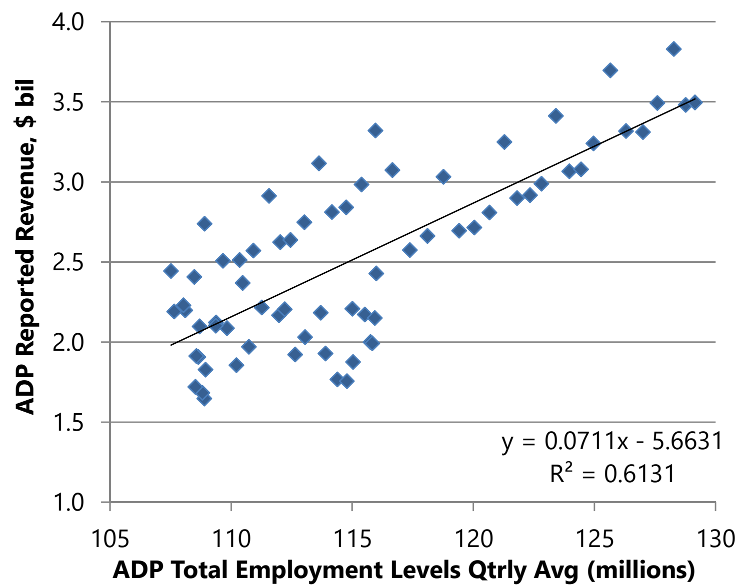
Key Theme 5: Macro / Employment vs. Competitive Dynamics

HCM / Payroll Processing: Macro Matters Most Today, While Competition Will Drive Share Shift Over Time

Small/Midsized focus of most providers and similar products makes standing out difficult

	Covered by MS		Non-Covered / Private**				
Client Size	**ADP**	**PAYX**	**TNET**	**PAYC**	**PCTY**	**NSP**	**Gusto****
Small	20%	100%	100%			100%	100%
Medium / Midsized	40%			100%	100%		
Large	20%						
Multi/International	20%						
Product Mix							
Payroll/Tax	✓	✓	✓	✓	✓	✓	✓
HR Mgmt/Admin	✓	✓	✓	✓	✓	✓	✓
Benefits Admin	✓	✓	✓	✓	✓	✓	✓
Time/Attendance	✓	✓	✓	✓	✓	✓	✓
Talent Mgmt/Recruiting	✓	✓	✓	✓	✓	✓	
Compliance Mgmt	✓	✓	✓	✓	✓	✓	✓
PEO Services	✓	✓	✓			✓	
Insurance Services	✓	✓	✓			✓	
Mobile Features	✓	✓	✓	✓	✓	✓	✓
Online Features	✓	✓	✓	✓	✓	✓	✓
Cloud Functionality	✓	✓	✓	✓	✓	✓	✓

Employment is key for now, given its high correlation to top line results:



** denotes private company

Source: ADP Research Institute, Company data, Morgan Stanley Research

Key Theme 5: Macro / Employment vs. Competitive Dynamics

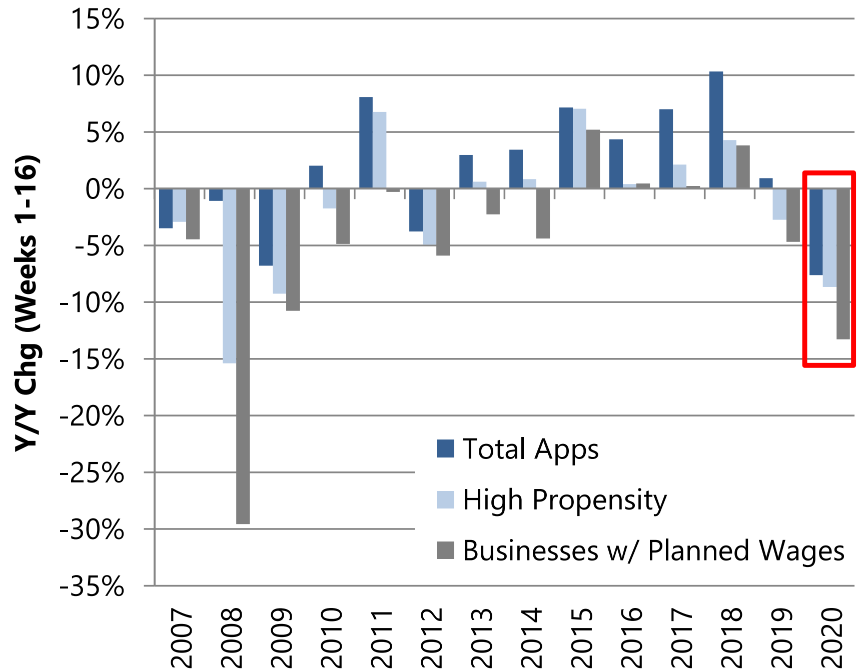
HCM / Payroll Processing: What We're Watching Today

Focus on labor / economic indicators:

- New Business formation
  - *Already seeing GFC level headwinds YTD*
  - *Leading indicator for job growth*
- ADP and PAYX/IHS Monthly Employment Reports
- Ad-hoc surveys of businesses (on topics such as labor costs, business health, access to capital/funding, etc.)

What's harder to track?

- Product pricing changes
- Client retention
- Client mix shift



	1-Year Lag vs. ADP Avg Employment			
	Total	1-49	50-499	500+
Correlation	88%	73%	90%	88%
R^2	77%	53%	81%	77%

Note: High Propensity is defined as businesses applications with a "high-propensity of turning into businesses with payroll". Businesses w/ Planned Wages signifies applications that include a first wages-paid date (an indicator the business will have payroll).
Source: Census Bureau, ADP Research Institute, Company data, Morgan Stanley Research

Key Theme 6: Secular Challenges in Remittance Industry

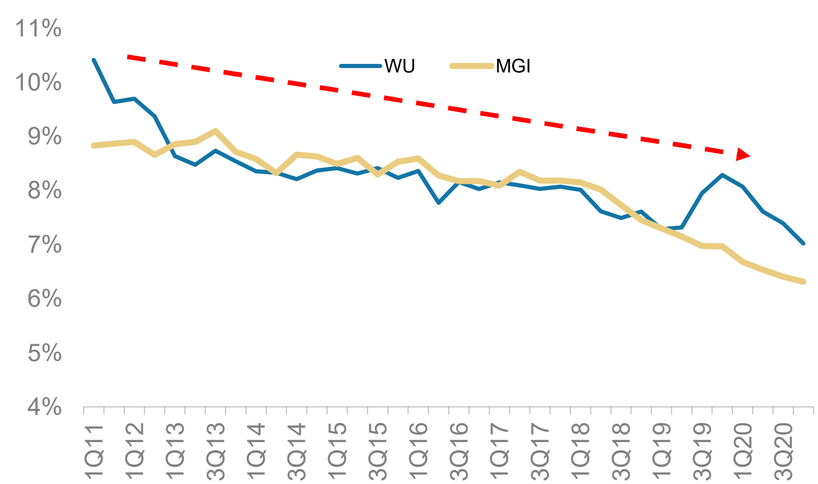
Money Transfer – Structurally Challenged

- Online money transfer competition driven by VC-backed firms
- Pricing pressure in digital likely to persist

Remittance Pricing Tracker by Provider

MS Quarterly Tracker

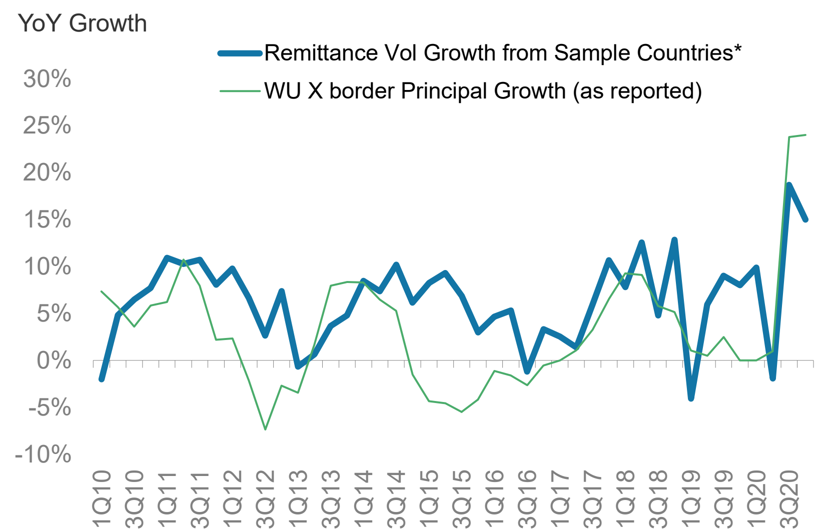
Cost to Send $200 Cash Remittance (as % of Send Amount)



Note: For best sequential comparability, we calculate average pricing using the 130 corridors where WU and MGI reported pricing in all periods

Cross Border Remittance Volume Tracker

MS Quarterly Tracker



* Includes volume data from Mexico, El Salvador, Colombia, Philippines, Bangladesh, Pakistan, and Kenya

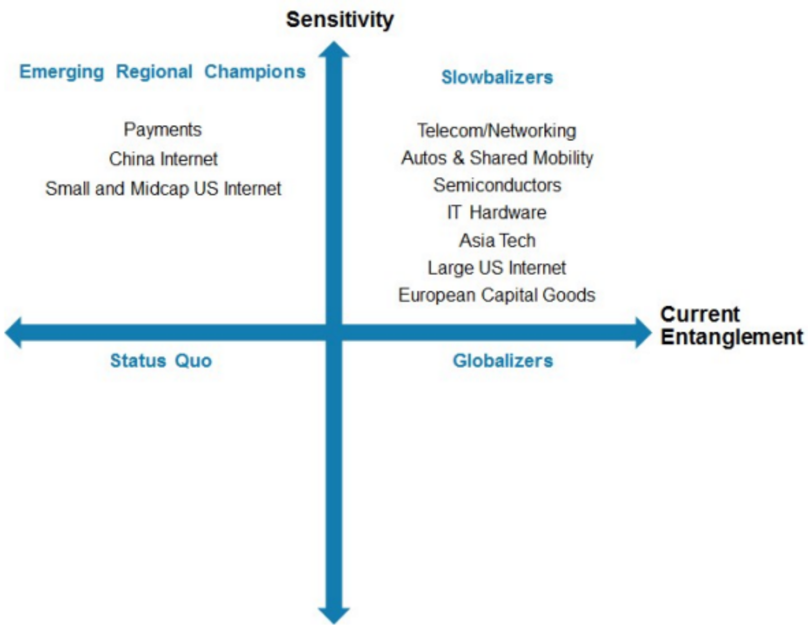
Source: World Bank, Company data, Morgan Stanley Research

Disruptive Threats Keep the Wall of Worry in Payments & Fintech

1. **Regulatory and Litigation Risk: Slowbalization**
2. **Amazon Threat**
3. **Cryptocurrencies**

Disruptive Threats: Regulation

Trend Toward "Slowbalization" Still a Risk



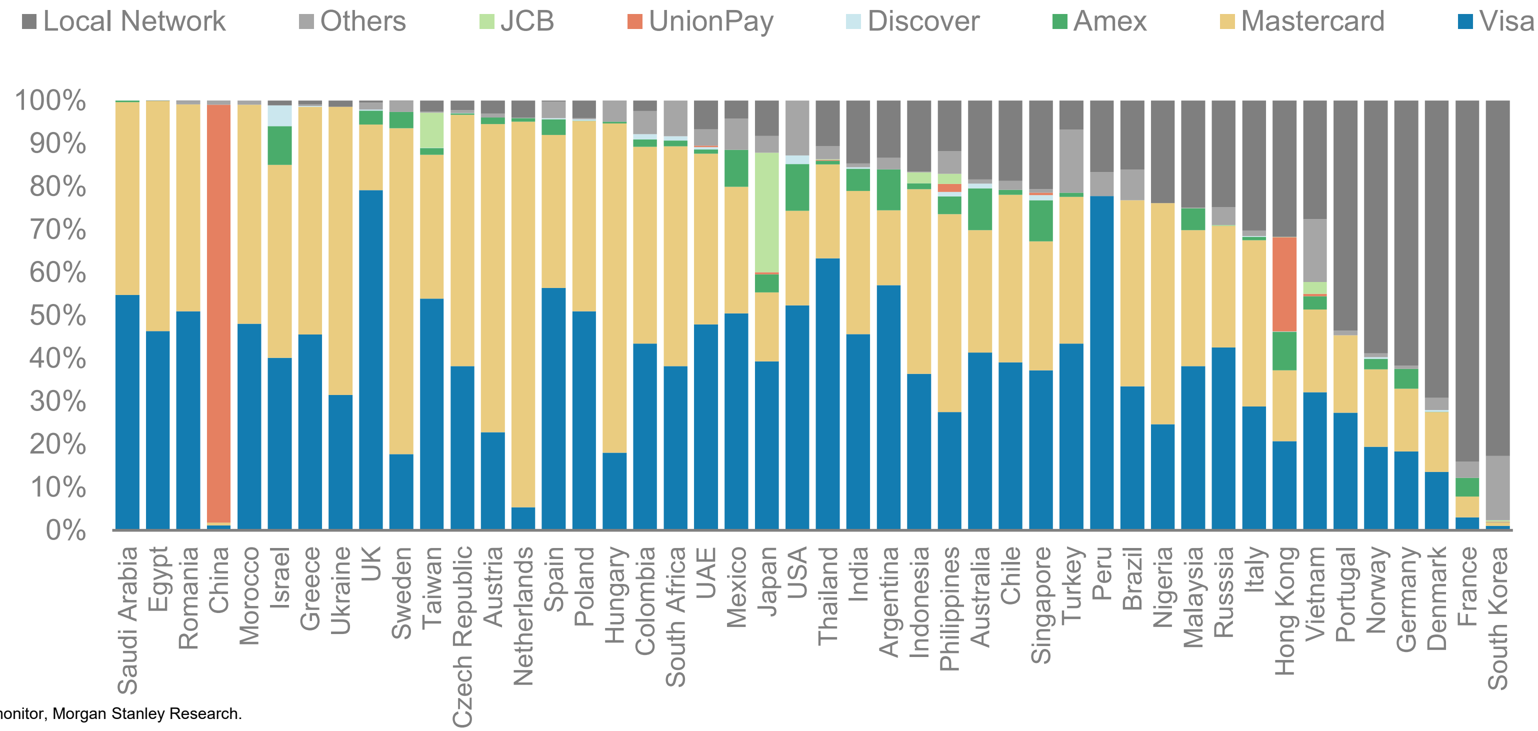
US	• DOJ investigating V's practices in the debit market (2021) • DOJ sued to block V's proposed acquisition of Plaid (2020) • Card networks embroiled in litigation with merchants • Senator Durbin sent letter to Federal Reserve expressing concern over debit card industry practices (2020)
Europe	• Interchange fee regulation cap • EC now investigating inter-regional interchange fees
China	• V & MA should get right to access market, but too little too late?
India	• Demonetization effort paving way for networks, hardware providers to drive growth • Potentially providing a roadmap to growth in other emerging markets • Localization efforts seen as disadvantageous to multinational players like V and MA

Disruptive Threats: Regulation

Regulation Will Be Key Determinant of Market Share

- Nearly 90% of volumes in key markets are processed by multinational networks, but there is still ~$3.7T of volume in these markets captured by local and other market players
- The preservation of this market share will largely depend on geopolitical factors

Payment Volume Market Share (2019)



Source: Euromonitor, Morgan Stanley Research.

Disruptive Threats: Amazon

Wall of Worry Surrounding Amazon Remains

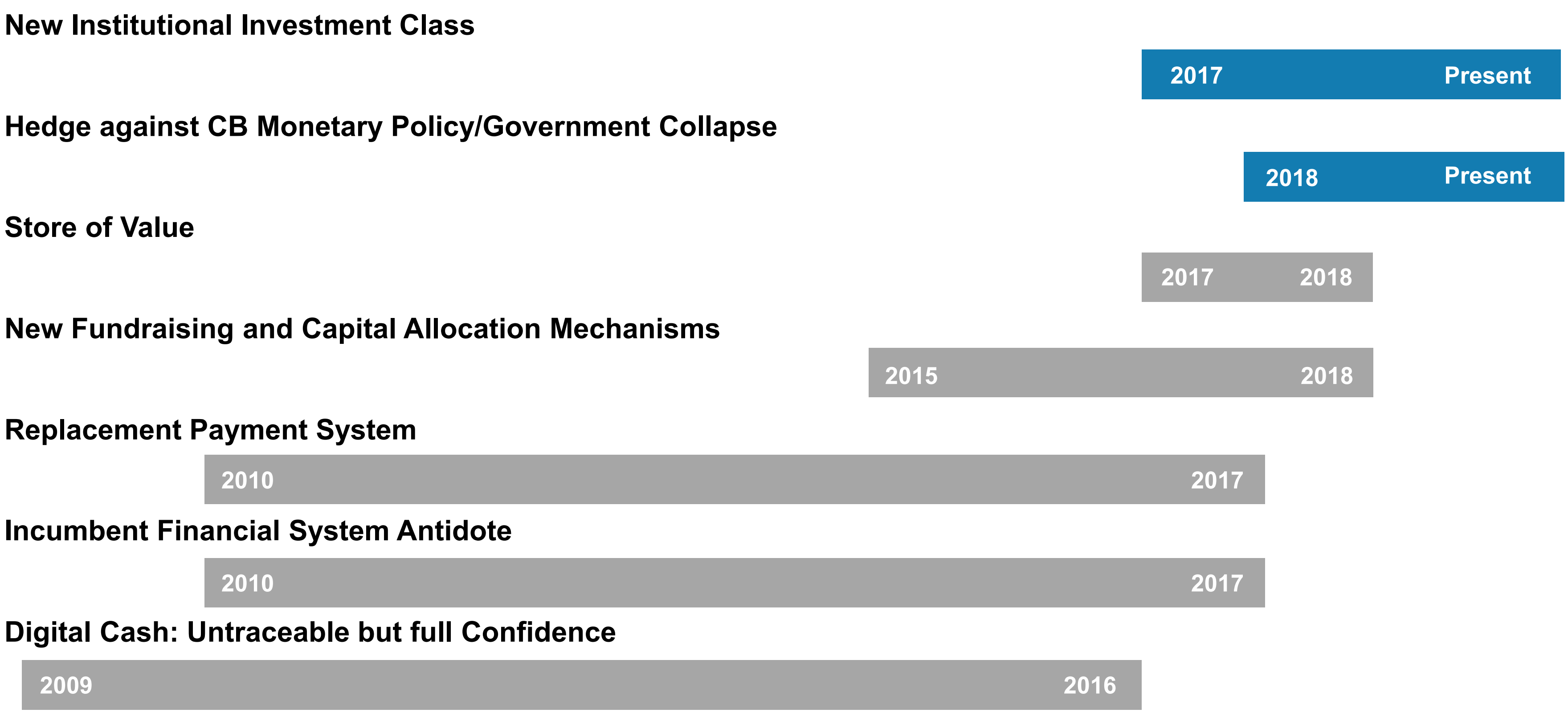
Concerns that Amazon will disrupt the payments industry have escalated as the company launches, or is reported to be launching, several payments offerings:

- **Amazon Pay:** One-click digital wallet for eCommerce transactions
- **Amazon Cash:** Launched in 2017, allowing consumers to add cash to their online Amazon accounts
- **Virtual checking account:** AMZN reportedly in talks with JPM & COF to build a checking account product
  - We believe both these products attempt to lower cost of card acceptance for AMZN and not immensely different in impact from private label cards that have existed for a long time.
  - Potentially pose more of a threat to Prepaid card providers than elsewhere in the ecosystem
- **P2P payment system:** Reports claim that Amazon is considering use of its Alexa device for P2P payments

Increasing concern that Amazon will capture most of the retail and eCommerce growth, limiting the benefit for other payments providers

Disruptive Threats: Cryptocurrencies/Blockchain

Rapidly Evolving Thesis for Cryptocurrencies



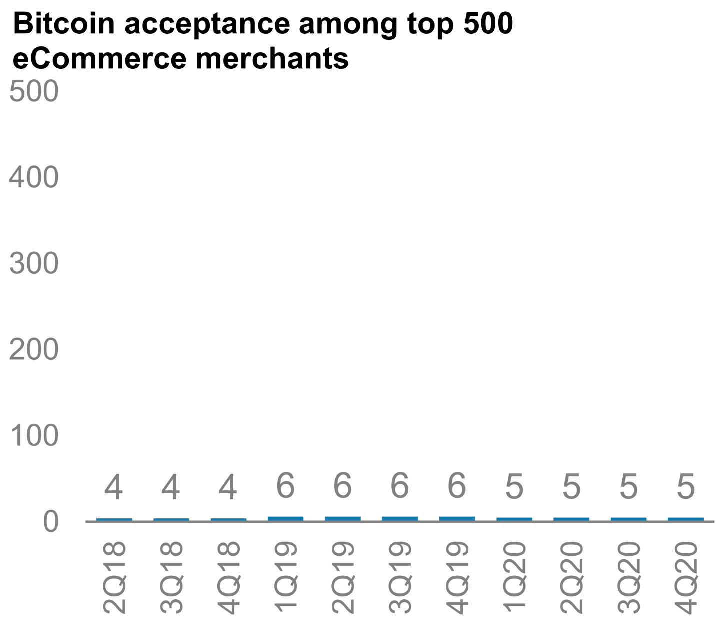
Source: Morgan Stanley Research.

Disruptive Threats: Cryptocurrencies/Blockchain

Replacing Payment System Thesis Breaking Down

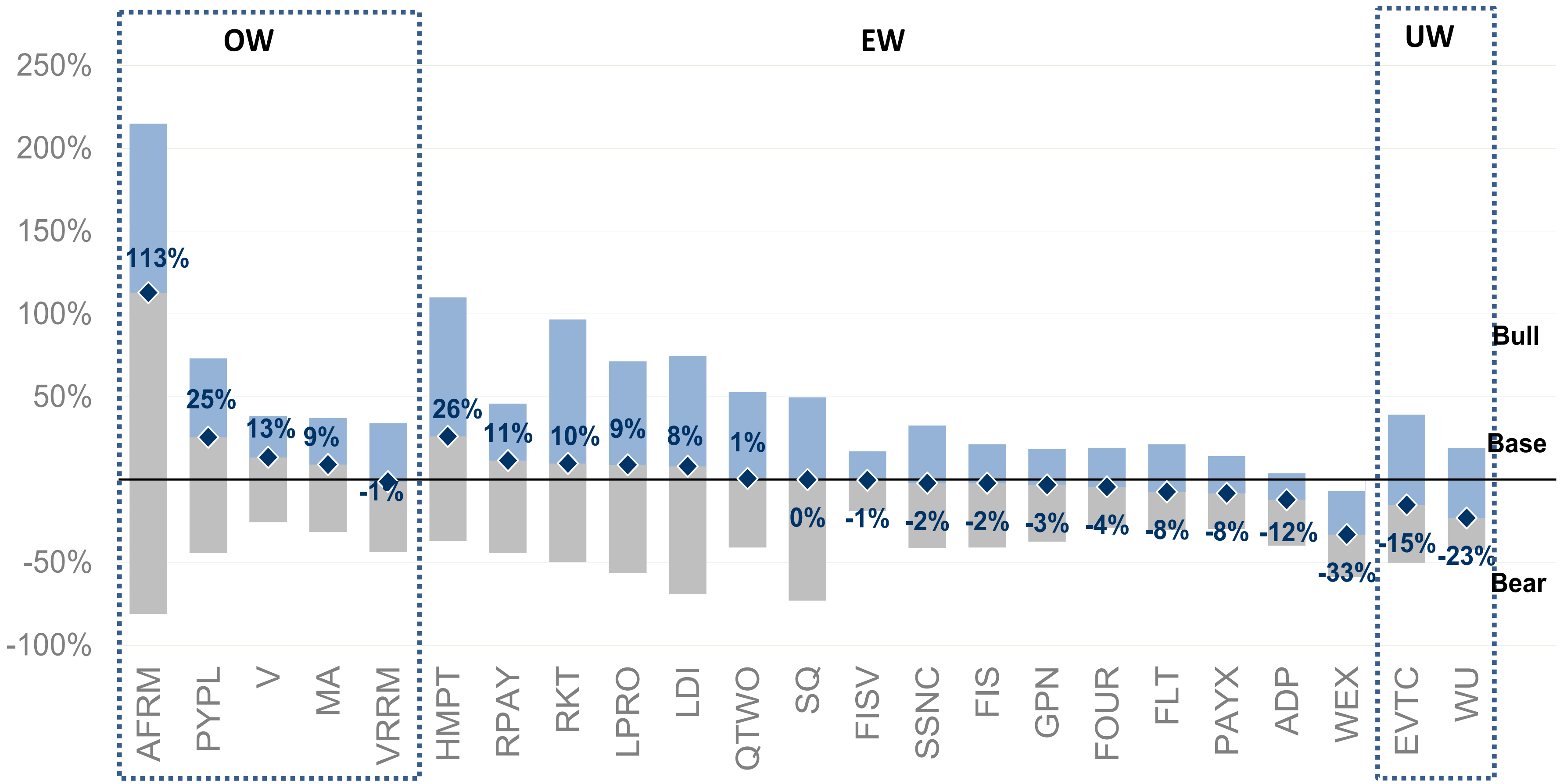
- High costs of operating a fully trustless system is pushing early players to break systems up into trusted blockchains/distributed ledgers.
- Merchant acceptance of Bitcoin as a payment option has stagnated

Virtually no acceptance among US eCommerce merchants



Source: Company data, Morgan Stanley Research.

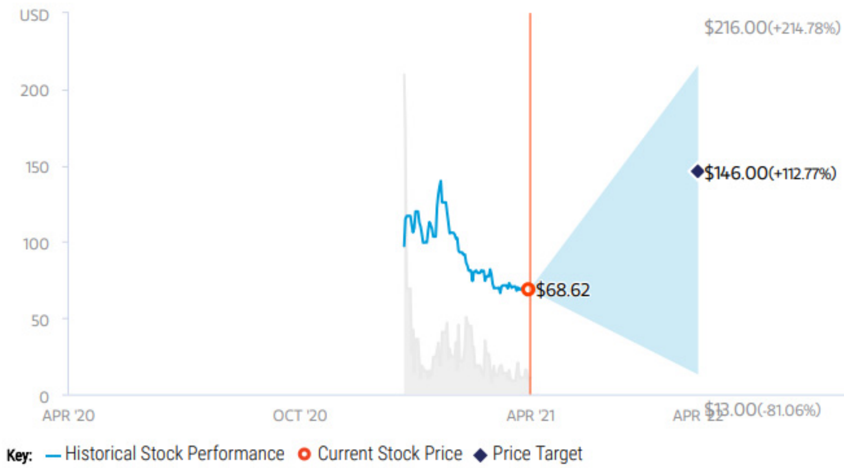
Our Top Picks



Source: Thomson Reuters, Morgan Stanley Research estimates.

Affirm Holdings Inc. (AFRM): Overweight; PT $146

Multiple Sources of Upside Near-term with Longer-term Super App Ambitions



Source: Company data, Morgan Stanley Research.

Price Target | **US$146**

Our PT is an average our base case ($75) and bull case ($216). Our base case applies a 19x EV/Sales multiple on our CY22 revenues estimate of $1,122M, which captures very little contribution from partnerships and new products. Our bull case uses a 35x EV/Sales multiple on our CY22 revenues estimate of $1,849M, and assumes a rapid rollout of Shopify Installments, sustained growth at Peloton, and material progress in becoming a neobank.

Bull | **US$216**

35x base case CY22e Revenues of $1,849M

Base | **US$75**

19x base case CY22e Revenues of $1,122M

Bear | **US$13**

3x base case CY22e Revenues of $768M

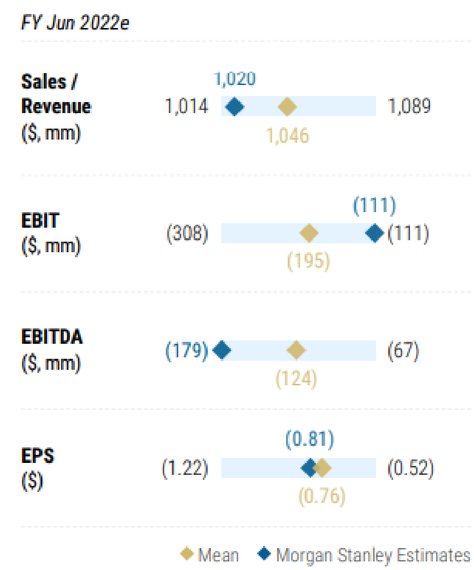
Risks to Upside

- Faster eCommerce growth and/or faster adoption of BNPL solutions
- Shopify Installments rolled out faster than expected
- Peloton demand robust and Affirm remains preferred partner in US and abroad

Risks to Downside

- Credit deterioration/higher interest rates
- Affirm loses partnerships like Peloton and Shopify to competitors
- PayPal's Pay in 4 pressures pricing
- Key man risk associated with Max Levchin

MS Estimates vs. Consensus



MasterCard Inc. (MA): Overweight; PT $418

High-teen compounding earnings growth off consumer payments longer term

Source: Company data, Morgan Stanley Research.

Price Target
Based on 33x target P/E multiple on our base-case 2023 EPS estimate. This target multiple is at a 2x discount to MA's 3-year historical average multiple but at a 2x premium to the multiple we apply for Visa. **US$418**

Bull
38x CY23e bull-case $13.85 EPS **US$526**

Base
33x CY23e base-case $12.66 EPS **US$418**

Bear
23x CY23e bear-case $11.40 EPS **US$262**

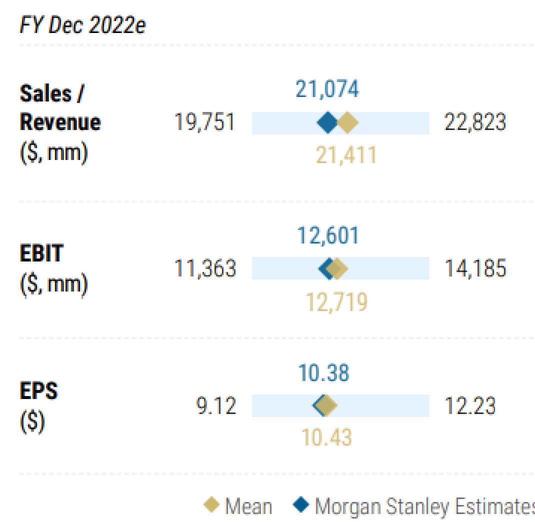
Risks to Upside

- Uptick in consumer spending trends
- New client wins in the US/Europe

Risks to Downside

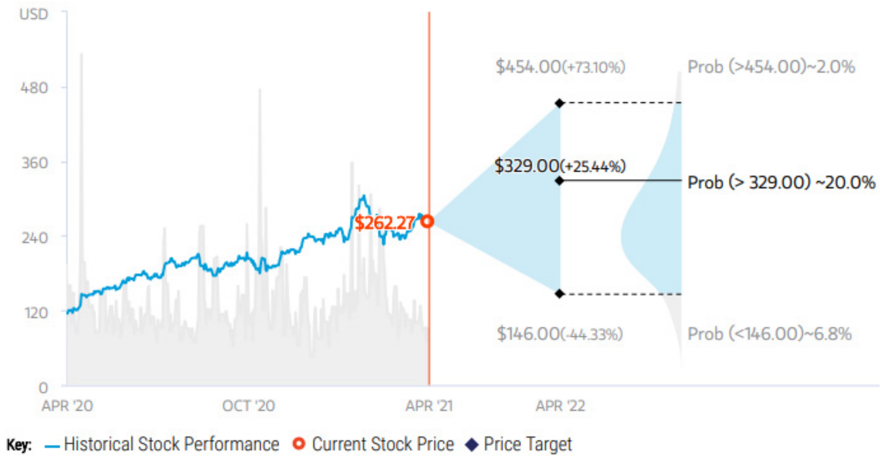
- Impact from regulatory action in Europe and elsewhere
- Material slowdown in consumer spending
- Potential for market share loss in Europe as V becomes more aggressive

MS Estimates vs. Consensus



PayPal Holdings, Inc. (PYPL): Overweight; PT $329

Expect TPV growth above eCommerce growth and double-digit compounding EPS growth



Source: Company data, Morgan Stanley Research.

Price Target **US$329**

Our PT is based on a 48x multiple on our CY23 EPS estimate of $6.85. This target multiple is in-line with Consumer Brands and the Networks on a PEG basis. We think such a P/E valuation makes sense given PayPal's potential for compounding earnings growth, margin expansion, and brand strength, despite near-term pressures.

Bull **US$454**

48x Bull Case 2023e $9.47 EPS

Base **US$329**

48x Base Case 2023e $6.85 EPS

Bear **US$146**

26x Bear Case 2023e $5.62 EPS

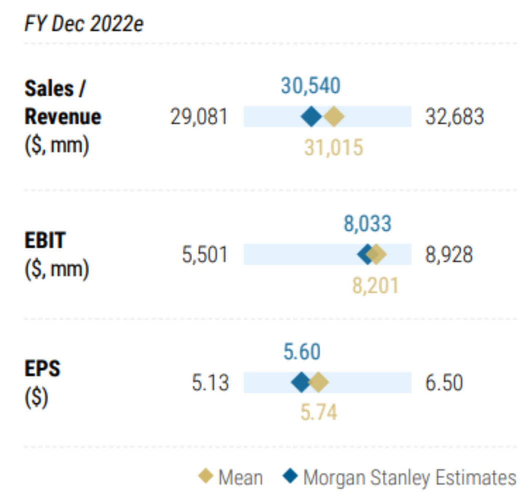
Risks to Upside

- Faster eCommerce (ex Amazon) growth
- Greater usage in existing markets and greater adoption in new markets
- Faster margin expansion; Accretive acquisitions; Traction in Venmo monetization/new partnerships

Risks to Downside

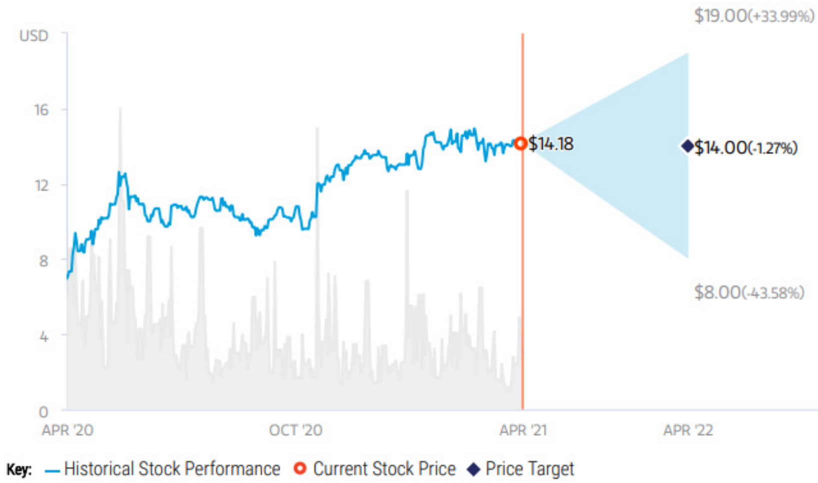
- Slowdown of eCommerce growth (ex-Amazon)
- Underperformance at eBay or faster conversion of volumes to eBay's managed platform
- Other market players with leads in offline could gain traction online

MS Estimates vs. Consensus



Verra Mobility Corp. (VRRM): Overweight; PT $14

Beneficiary of Strong, Multi-year Growth Tailwinds at a Discounted Price



Source: Company data, Morgan Stanley Research.

Price Target Our price target is derived from our base case valuation of ~16x our 2022 adj. EPS estimate of $0.91, putting VRRM in-line with travel-levered WEX and at a slight discount to its other peer FLT.	**US$14**
Bull 18x Base Case 2022e adj. EPS of $1.08	**US$19**
Base 16x Base Case 2022e adj. EPS of $0.91	**US$14**
Bear 11x Bear Case 2022 adj. EPS of $0.73	**US$8**

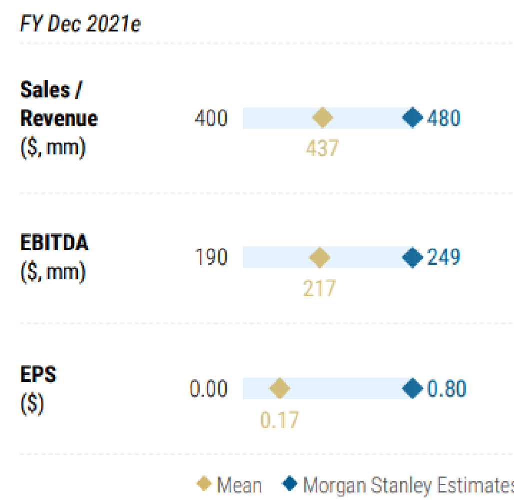
Risks to Upside

- Faster than expected Europe expansion
- More benign/temporary virus impacts
- Large scale camera expansions

Risks to Downside

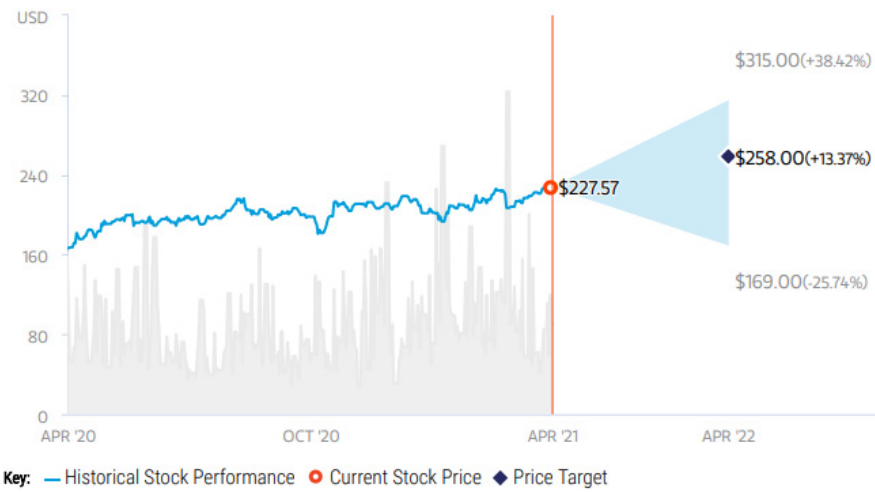
- Significant financial health concerns at rental car firms
- Long-lasting impacts from virus response measures on US domestic travel
- States electing to ban or not explicitly enact photo enforcement legislation
- Overhang from PE owners reducing or exiting remaining holdings

MS Estimates vs. Consensus



Visa, Inc. (V): Overweight; PT $258

Resilient double-digit returns over the medium term offers appealing risk reward



Source: Company data, Morgan Stanley Research.

Price Target Based on 31.0x target P/E multiple on our base-case CY23 EPS estimate. This target multiple is in-line with V's 3-year average multiple, which we think is justified, as long-term fundamental drivers remain in-tact despite near-term Covid-19 related headwinds	**US$258**
Bull 33x CY23e bull-case $9.56 EPS	**US$315**
Base 31x CY23e base-case $8.32 EPS	**US$258**
Bear 23x CY23e bear-case $7.33 EPS	**US$169**

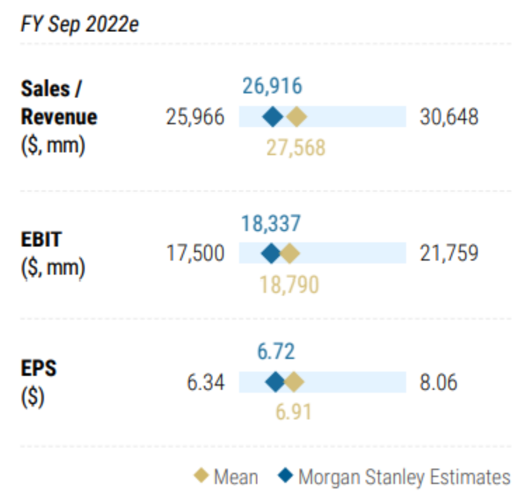
Risks to Upside

- Ability to continue to meet/beat expectations
- Portfolio wins in Europe, with most of their contracts renegotiated
- Faster-than-expected adoption/scaling of B2B solutions, driving multiple expansion

Risks to Downside

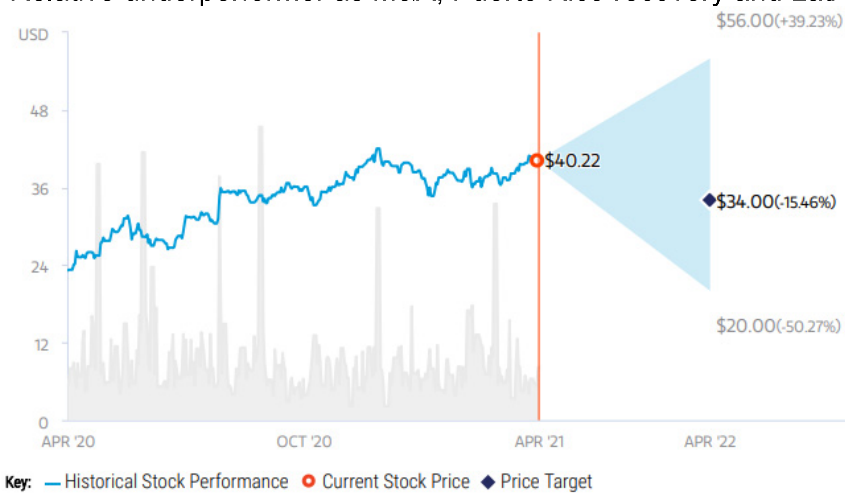
- Material slowdown in consumer spend; Further slowdown in cross-border growth
- Portfolio losses in the US
- Regulatory changes in key markets promoting domestic schemes

MS Estimates vs. Consensus



Evertec Inc. (EVTC): Underweight; PT $34

Relative underperformer as M&A, Puerto Rico recovery and LatAm oppty further out



Source: Company data, Morgan Stanley Research.

Price Target — **US$34**
Derived from base-case 11x EV/EBITDA multiple on our CY22 Adj. EBITDA (SBC burdened) estimate of $251M.

Bull — **US$56**
16x Adj. EBITDA (SBC burdened) of $276M

Base — **US$34**
11x CY22e Adj. EBITDA (SBC burden) of $252M

Bear — **US$20**
7.5x Adj. EBITDA (SBC burdened) of $239M

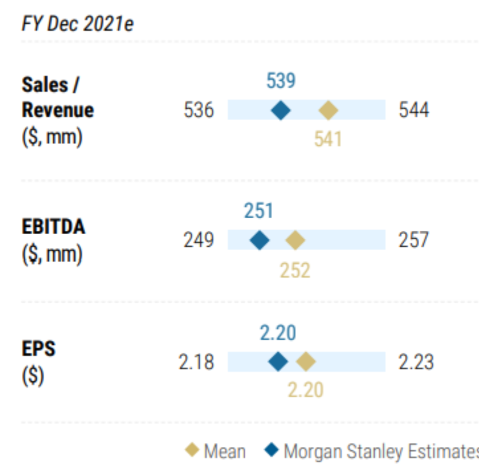
Risks to Upside

- New JV, partnerships or M&A could help accelerate growth outside Puerto Rico
- EVTC attracts interest as a potential M&A participant
- Macro improvement from capital inflow for rebuilding efforts in Puerto Rico

Risks to Downside

- Growth in Puerto Rico stagnates, as funding fail to stimulate economic activity
- Travel recovery slower post-Covid-19
- Loss of government receivables
- Banco Popular relationship contract ends in 2025

MS Estimates vs. Consensus



Western Union Co. (WU): Underweight; PT $20

Long-term relative under-performer in Payments

Source: Company data, Morgan Stanley Research.

Price Target Our $20 price target is derived from our Base-Case 9.0x C2022e P/E based valuation.	**US$20**
Bull 13x Bull Case CY22e EPS of $2.40	**US$31**
Base 9.0x Base Case CY22e EPS of $2.28	**US$20**
Bear 8.5x Bear Case CY22e EPS $1.81	**US$15**

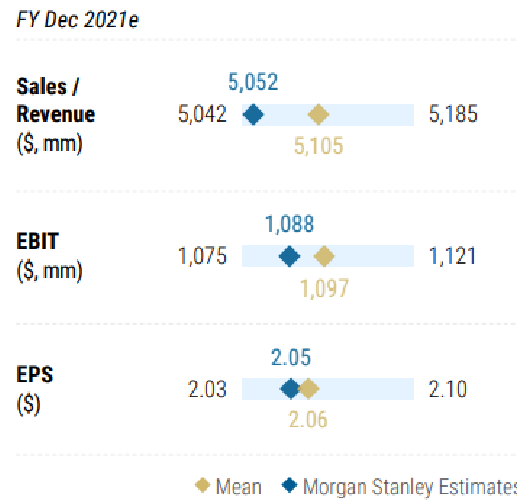
Risks to Upside

- Persisting MoneyGram underperformance serves as a tailwind.
- Digital channel re-accelerates, aiding revenue growth and supporting multiple premium.
- WU's Open Platform strategy reaccelerates growth.

Risks to Downside

- Global macro and remittance data shows continued pricing deterioration.
- New initiatives pressure margins but fail to accelerate revenues

MS Estimates vs. Consensus



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Industry Comps

Payments & FinTech Multiples					P/E - Calendar Year						EV/EBITDA						EV/S		
					(Consensus Method)			(Cash, SBC Burdened)			(Consensus Method)			(SBC Burdened)					
Ticker	Rating	Price	Market Cap.	Ent. Value	C20	C21	C22	C20	C21	CY22	C20	C21	C22	C20	C21	C22	C20	C21	C22
Card Networks																			
V	Overweight	$227.57	500,654	503,507	45.6x	40.2x	31.6x	45.6x	40.2x	31.6x	34.2x	30.2x	24.8x	34.2x	30.2x	24.8x	23.4x	20.8x	17.9x
MA	Overweight	$383.36	383,743	385,296	59.7x	47.7x	36.7x	59.7x	47.7x	36.7x	39.3x	32.3x	26.9x	39.3x	32.3x	26.9x	25.2x	21.4x	18.1x
				Group Mean	**52.6x**	**43.9x**	**34.2x**	**52.6x**	**43.9x**	**34.2x**	**36.7x**	**31.2x**	**25.8x**	**36.7x**	**31.2x**	**25.8x**	**24.3x**	**21.1x**	**18.0x**
Merchant Acquirers																			
PYPL	Overweight	$262.27	312,364	302,131	67.6x	57.7x	46.8x	94.0x	77.5x	58.3x	45.8x	43.2x	35.7x	59.0x	56.3x	43.8x	14.1x	11.9x	9.9x
GPN	Equal-Weight	$216.18	64,961	72,822	33.8x	27.7x	23.6x	36.3x	29.6x	25.4x	24.0x	20.3x	17.9x	25.2x	21.4x	19.0x	9.1x	8.1x	7.4x
SQ	Equal-Weight	$245.11	128,336	127,765	275.3x	210.1x	116.2x	499.9x	3,344.6x	305.1x	269.5x	187.2x	107.1x	1,953.7x	783.1x	228.7x	41.0x	30.9x	25.2x
EVTC	Underweight	$40.22	2,942	3,239	19.4x	18.3x	17.0x	21.1x	19.9x	18.5x	13.5x	12.9x	12.1x	14.3x	13.7x	12.8x	6.3x	6.0x	5.7x
FOUR	Equal-Weight	$97.34	8,031	8,319	NA	2,027.7x	171.0x	NA	2,027.7x	171.0x	400.0x	61.6x	44.1x	400.0x	61.6x	44.1x	25.8x	18.1x	14.8x
RPAY	Equal-Weight	$23.33	2,062	2,127	39.3x	38.2x	30.7x	60.4x	55.1x	42.5x	31.2x	27.6x	22.5x	43.7x	37.7x	30.2x	13.7x	11.6x	10.0x
FIS	Equal-Weight	$152.53	95,789	114,032	27.9x	24.0x	20.7x	27.9x	24.0x	20.7x	21.7x	18.7x	16.7x	21.7x	18.7x	16.7x	9.1x	8.4x	7.8x
FISV	Equal-Weight	$124.63	84,898	105,675	28.2x	23.0x	20.1x	28.2x	23.0x	20.1x	18.9x	16.7x	15.2x	18.9x	16.7x	15.2x	7.6x	7.0x	6.5x
PSFE	NA	$13.26	1,660	3,365	NA	156.0x	54.1x	NA	NA	NA	NA	6.9x	5.7x	NA	NA	NA	NA	2.2x	2.0x
				Group Mean	**84.9x**	**199.3x**	**50.4x**	**101.7x**	**626.3x**	**76.7x**	**81.0x**	**42.5x**	**30.0x**	**317.1x**	**126.2x**	**51.3x**	**19.7x**	**14.7x**	**11.7x**
Fleet Card Networks																			
FLT	Equal-Weight	$288.66	25,032	28,430	26.4x	23.1x	19.7x	NA	NA	NA	22.6x	18.9x	16.5x	NA	NA	NA	11.9x	10.7x	9.6x
WEX	Equal-Weight	$224.73	9,853	12,158	37.0x	26.9x	20.8x	NA	NA	NA	17.6x	16.0x	13.2x	NA	NA	NA	7.9x	6.7x	5.8x
VRRM	Overweight	$14.18	2,292	3,014	NA	81.5x	32.5x	NA	NA	NA	16.7x	13.9x	11.3x	NA	NA	NA	7.8x	6.9x	5.8x
				Group Mean	**31.7x**	**25.0x**	**20.2x**	**NA**	**NA**	**NA**	**20.1x**	**17.4x**	**14.9x**	**NA**	**NA**	**NA**	**9.9x**	**8.7x**	**7.7x**
Payroll & PEO																			
ADP	Equal-Weight	$194.83	84,303	84,399	34.0x	32.9x	29.9x	NA	NA	NA	23.9x	22.5x	20.8x	NA	NA	NA	5.8x	5.7x	5.3x
PAYX	Equal-Weight	$98.28	35,479	31,918	32.8x	32.8x	30.6x	NA	NA	NA	19.4x	19.4x	18.0x	NA	NA	NA	7.9x	8.0x	7.5x
TNET	NA	$83.76	5,696	5,708	19.7x	22.7x	19.1x	NA	NA	NA	12.6x	14.7x	12.9x	NA	NA	NA	5.5x	5.7x	5.2x
				Group Mean	**26.2x**	**27.7x**	**24.9x**	**NA**	**NA**	**NA**	**16.0x**	**17.0x**	**15.5x**	**NA**	**NA**	**NA**	**6.7x**	**6.8x**	**6.3x**
Buy Now Pay Later																			
AFRM	Overweight	$68.62	20,998	19,212	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28.7x	22.1x	17.1x
APT	Overweight	$96.36	24,972	24,870	NA	NA	332.0x	NA	NA	NA	649.4x	202.2x	94.5x	NA	NA	NA	69.1x	34.7x	21.1x
				Group Mean	**NA**	**NA**	**332.0x**	**NA**	**NA**	**NA**	**649.4x**	**202.2x**	**94.5x**	**NA**	**NA**	**NA**	**69.1x**	**34.7x**	**21.1x**
Mortgage Players																			
RKT	Equal-Weight	$21.87	43,487	44,291	5.2x	9.1x	12.2x	NA	NA	NA	8.1x	6.7x	8.9x	NA	NA	NA	2.6x	3.5x	4.1x
HMPT	Equal-Weight	$9.52	1,322	4,598	2.0x	3.1x	2.5x	NA	NA	NA	5.0x	7.4x	6.0x	NA	NA	NA	3.1x	3.3x	2.8x
LDI	Equal-Weight	$19.45	6,321	6,390	4.3x	6.6x	6.2x	NA	NA	NA	3.1x	4.7x	4.4x	NA	NA	NA	1.5x	1.6x	1.8x
UWMC	NA	$7.64	383	384	5.0x	6.0x	6.2x	NA	NA	NA	NA	0.1x	0.2x	NA	NA	NA	0.1x	0.1x	0.1x
				Group Mean	**4.1x**	**6.2x**	**6.8x**	**NA**	**NA**	**NA**	**5.4x**	**4.7x**	**4.9x**	**NA**	**NA**	**NA**	**1.8x**	**2.1x**	**2.2x**
Money Transfer Operators																			
WU	Underweight	$26.05	10,816	12,455	13.9x	12.7x	11.4x	NA	NA	NA	10.1x	9.4x	8.9x	10.1x	9.4x	8.9x	2.6x	2.5x	2.4x
MGI	NA	$6.93	539	-682	32.8x	75.8x	34.1x	NA	NA	NA	-2.8x	-3.0x	-2.9x	NA	NA	NA	-0.6x	-0.5x	-0.5x
				Group Mean	**23.3x**	**44.3x**	**22.8x**	**NA**	**NA**	**NA**	**3.6x**	**3.2x**	**3.0x**	**10.1x**	**9.4x**	**8.9x**	**1.0x**	**1.0x**	**0.9x**
Core Processors, & Other																			
JKHY	NA	$167.21	12,864	12,651	43.2x	40.0x	35.6x	NA	NA	NA	23.0x	21.6x	19.8x	NA	NA	NA	7.5x	7.2x	6.7x
QTWO	Equal-Weight	$103.37	5,377	5,396	1,306.5x	734.2x	1,234.4x	NA	NA	NA	242.8x	152.3x	123.2x	NA	NA	NA	13.3x	11.0x	9.2x
SSNC	Equal-Weight	$71.59	19,086	25,319	16.6x	15.9x	15.0x	NA	NA	NA	13.7x	13.2x	12.6x	NA	NA	NA	5.4x	5.3x	5.1x
TEMN	Underweight*	$150.77	18,631	19,489	44.4x	39.6x	35.6x	NA	NA	NA	47.8x	43.8x	40.2x	NA	NA	NA	21.7x	19.8x	17.9x
BR	NA	$161.28	18,870	20,181	32.4x	29.1x	26.5x	NA	NA	NA	21.9x	19.0x	16.6x	NA	NA	NA	4.5x	4.3x	4.0x
				Group Mean	**288.6x**	**171.8x**	**269.4x**	**NA**	**NA**	**NA**	**69.8x**	**50.0x**	**42.5x**	**NA**	**NA**	**NA**	**10.5x**	**9.5x**	**8.6x**

Note: Estimates for companies not covered by James Faucette are provided by Thomson Reuters and converted into USD
* NCR covered by Katy Huberty, PAGS and STNE covered by Jorge Kuri, WDI and ADYEN covered by Adam Wood.
Source: Thomson Reuters, Morgan Stanley Research estimates

Closing prices as of: **4/22/2021**

Morgan Stanley

FOUNDATION

May 2021

Financials Spring Training Teach-In

Life Insurance

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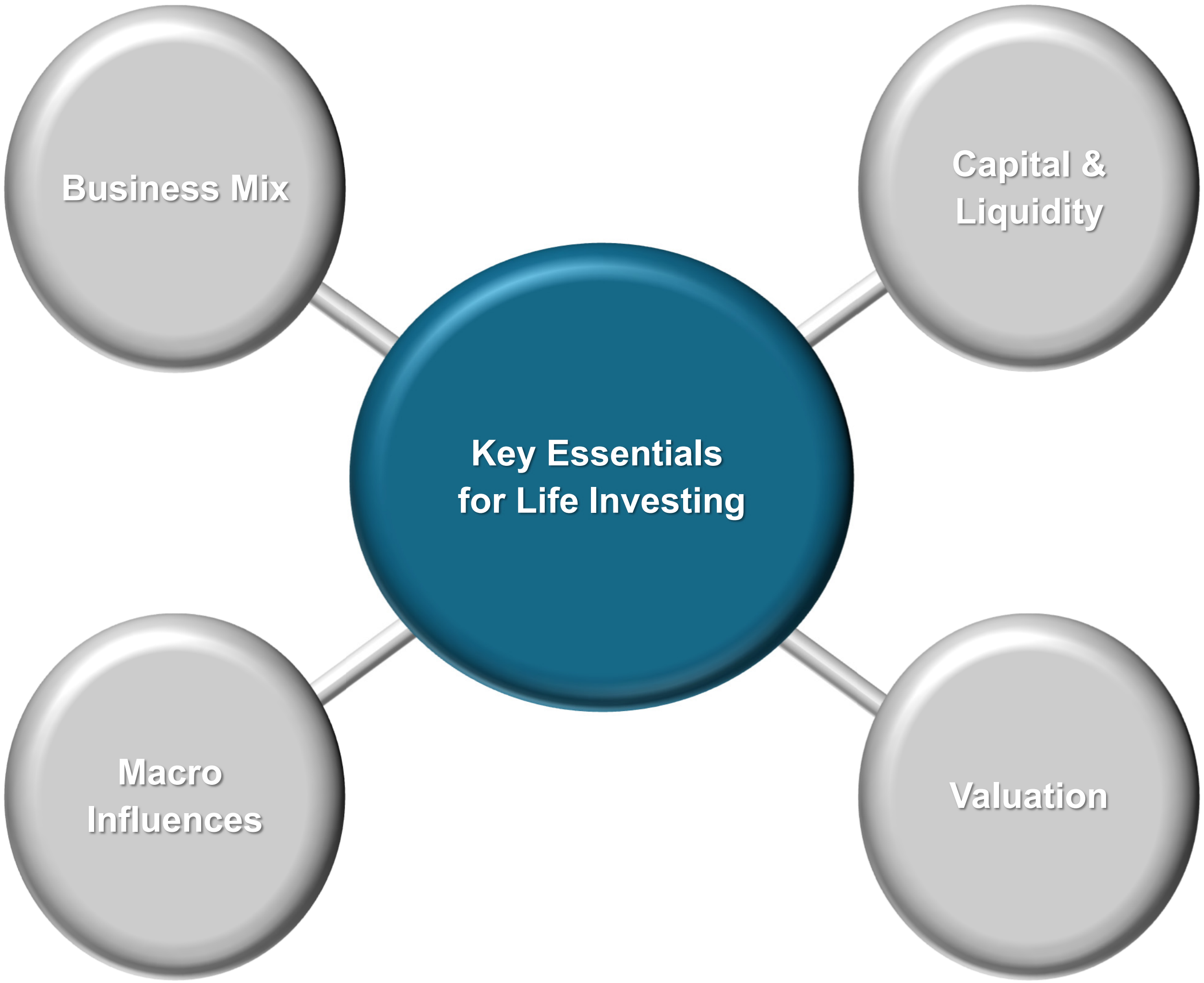
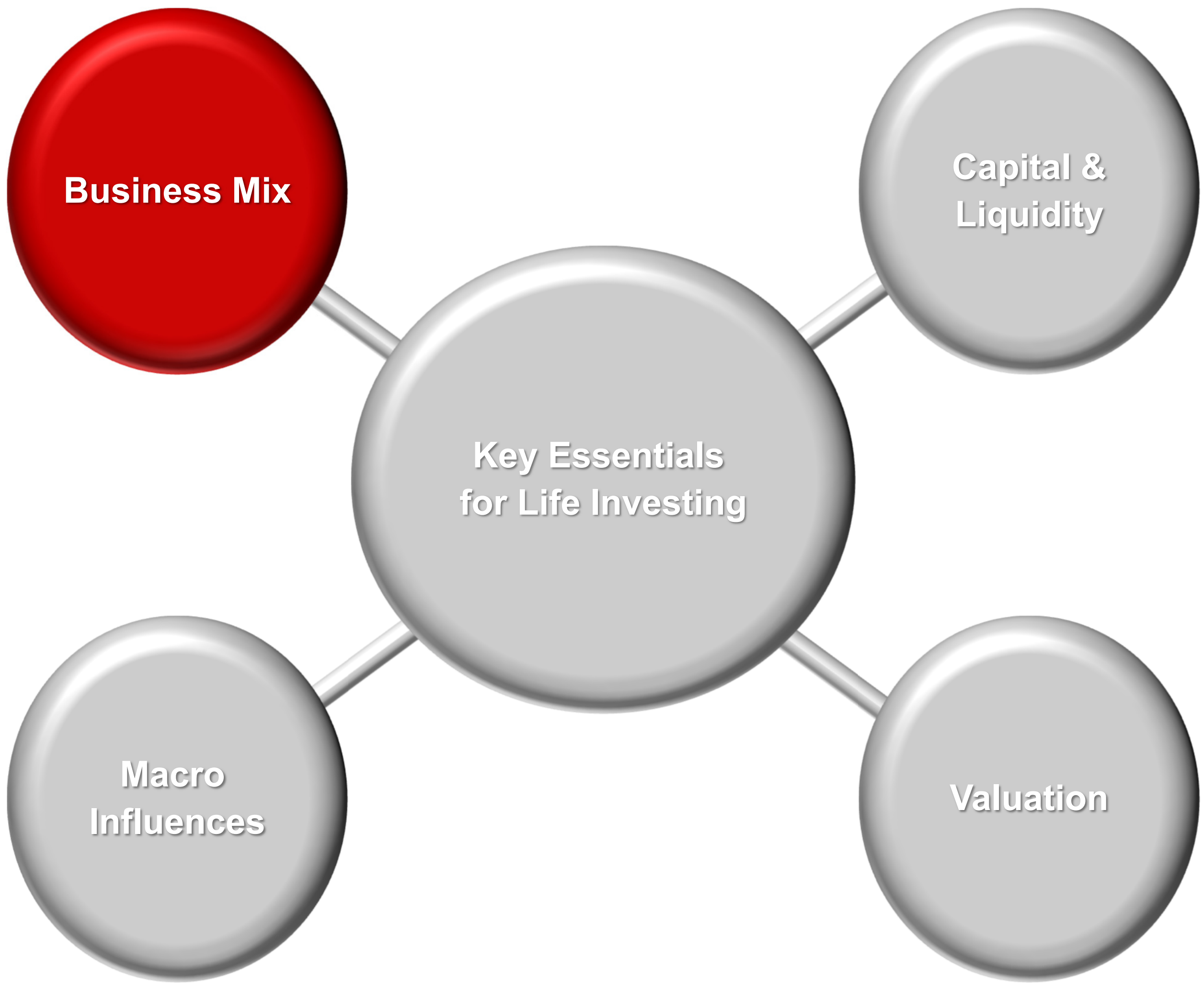
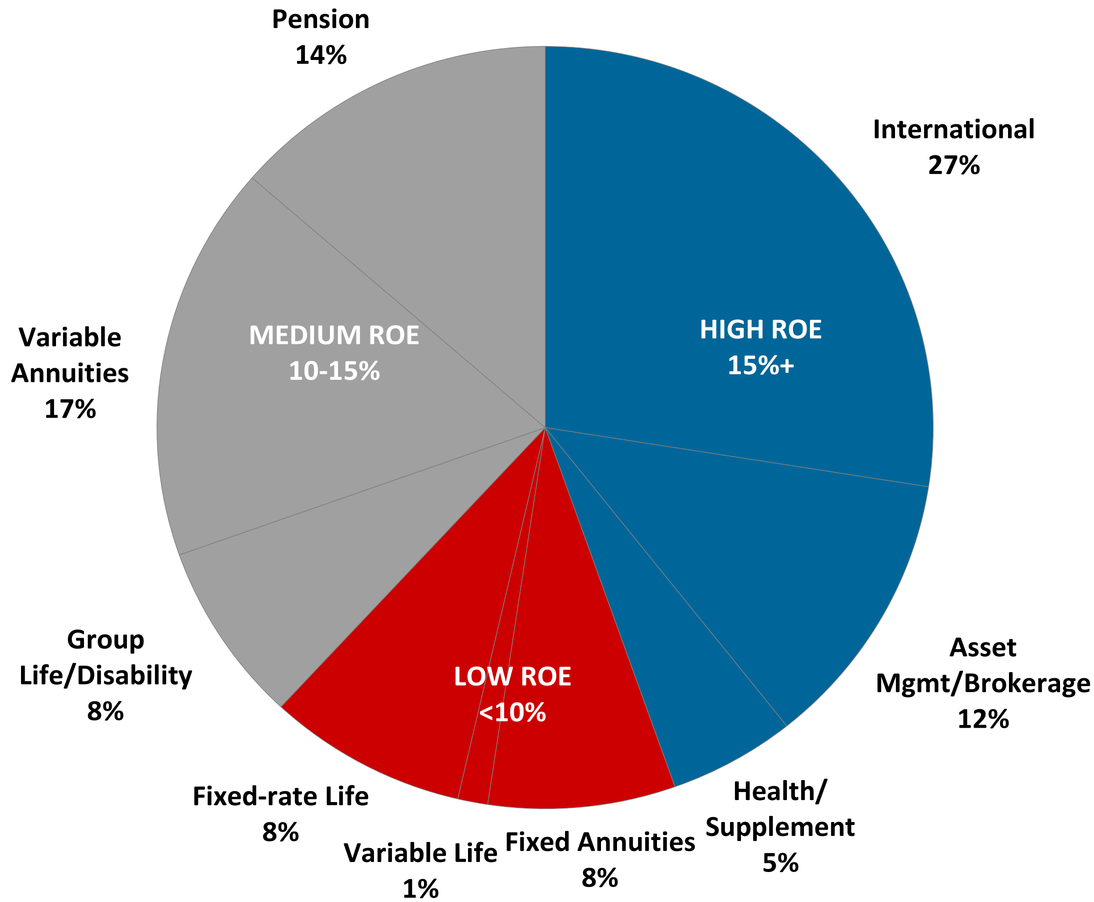
Key Essentials for Investing in the Life Insurance Industry



Business Mix



Individual Life Insurance Represents only a Small Portion of Total Earnings



Source: Company data, Morgan Stanley Research Estimates

Companies Have Very Different Earnings Drivers

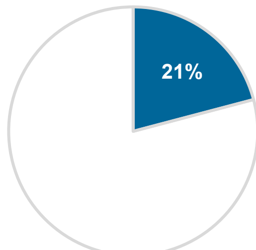
2021 Expected Earnings by Product Line

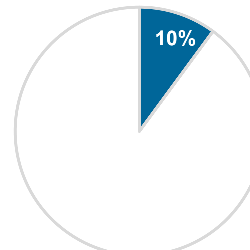
	Fixed-rate Life	Variable Life	Total Life Insurance	Fixed Annuities	Variable Annuities	Total Annuities	Group Life/Disability	Individual Disability	Health/Supplemental	Total Disab./Supp.	Asset Mgmt/Brokerage	Pension/Retirement	Total Asset Mgmt	International	Property Casualty	Other (ex Reins, Mrtg Ins, Bank)	Total
AEL	-	-	-	100	-	100	-	-	-	-	-	-	-	-	-	-	**100**
Aflac	3	-	3	-	-	-	3	-	20	23	-	-	-	75	-	-	**100**
Ameriprise	4	3	8	(0)	14	14	-	0	1	1	69	-	69	8	-	-	**100**
Athene	0	-	0	82	-	82	-	-	-	-	-	18	18	-	-	-	**100**
Brighthouse	2	3	5	11	84	95	-	-	-	-	-	0	0	-	-	-	**100**
CNO	21	-	21	28	-	28	-	-	50	50	-	-	-	-	-	-	**100**
Equitable	5	3	8	-	55	55	-	-	-	-	16	21	38	-	-	-	**100**
Globe Life	71	-	71	1	-	1	-	-	28	28	-	-	-	-	-	-	**100**
Lincoln Financial	21	4	25	6	53	60	6	-	-	6	-	9	9	-	-	-	**100**
MetLife	10	1	11	2	5	7	21	-	-	21	-	22	22	38	-	-	**100**
Principal	7	-	7	3	3	5	13	-	-	13	21	28	49	25	-	-	**100**
Primerica	67	-	67	-	-	-	-	-	-	-	33	-	33	-	-	-	**100**
Prudential	1	2	2	1	24	25	(2)	-	-	(2)	17	16	33	42	-	(1)	**100**
RGA	-	-	-	19	1	20	-	-	-	-	-	6	6	65	-	9	**100**
Unum	5	-	5	-	-	-	44	9	36	89	-	-	-	6	-	-	**100**
VOYA	-	-	-	-	-	-	20	-	-	20	21	60	80	-	-	-	**100**
Weighted Avg	**8**	**1**	**10**	**8**	**17**	**25**	**7**	**0**	**5**	**13**	**12**	**14**	**26**	**27**	**-**	**0**	**100**

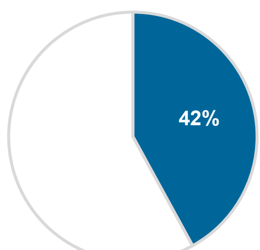
Source: Company Data, Morgan Stanley Research Estimates

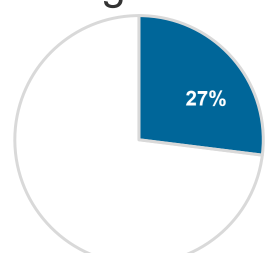
The Products Are Sold to Both Individuals and Institutions

	Individuals	Institutions
Protection	Individual Life Supplemental Disability	Group Life Group Disability
Accumulation	Mutual Funds Variable Annuities Fixed/EIA Annuities	Pension Risk Transfer GICS and Other Savings Institutional Asset Management









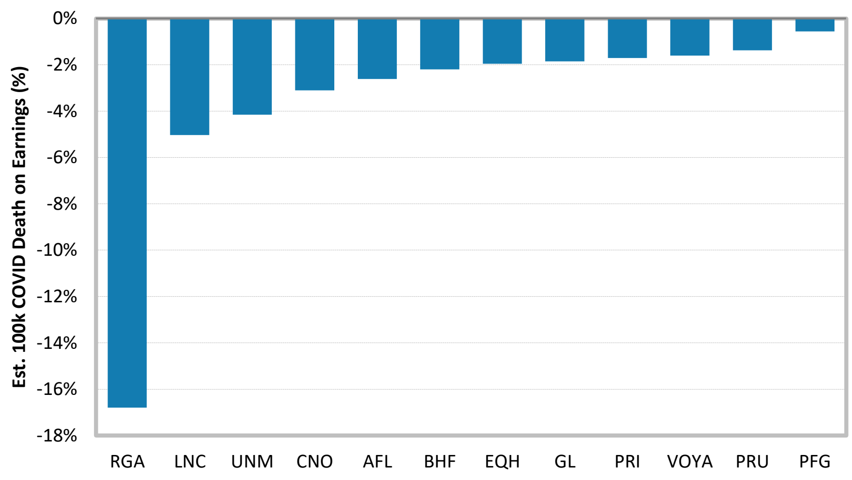
COVID-19 Impact

Positives

- Supplemental/Dental/Vision Insurance
- Long Term Care

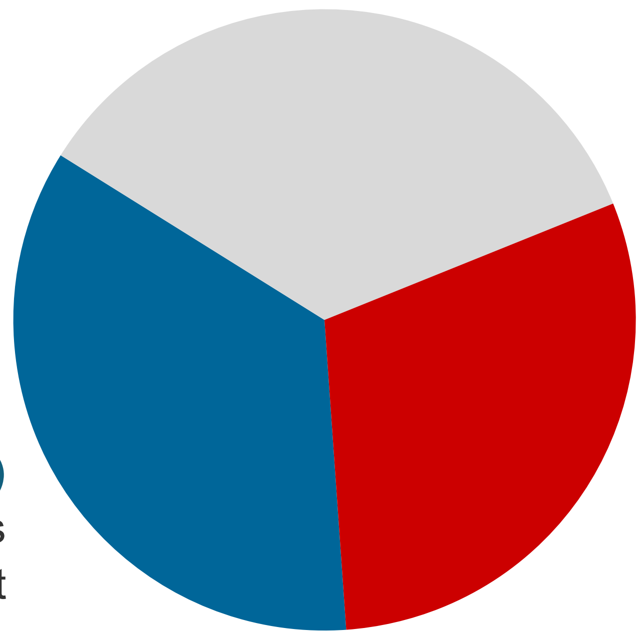
Concerns

- Individual Life
- Group Life



Life Insurers Make Money Several Ways

UNDERWRITING MARGIN (35%)
Charge more in premiums than you pay out in benefits

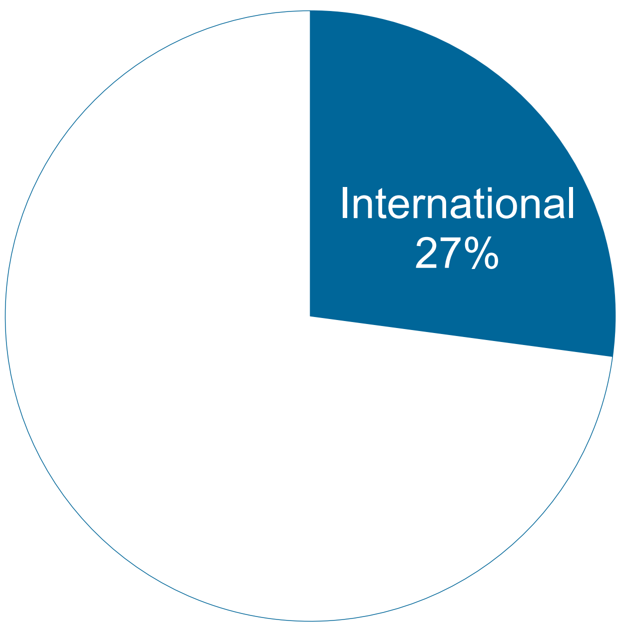


FEES (35%)
Charge fees based on assets under management

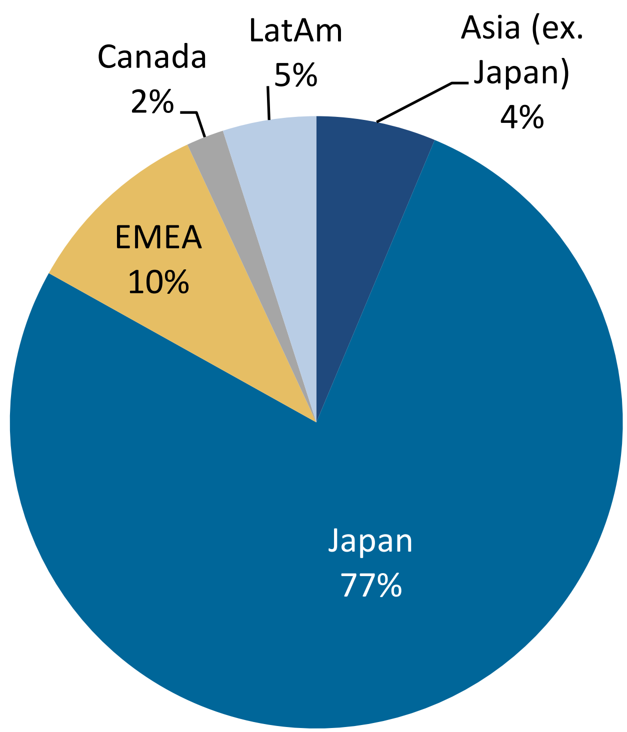
NET INTEREST SPREAD (30%)
Earn more on investments than you payout through interest to policyholders

International Is an Important Source of Earnings

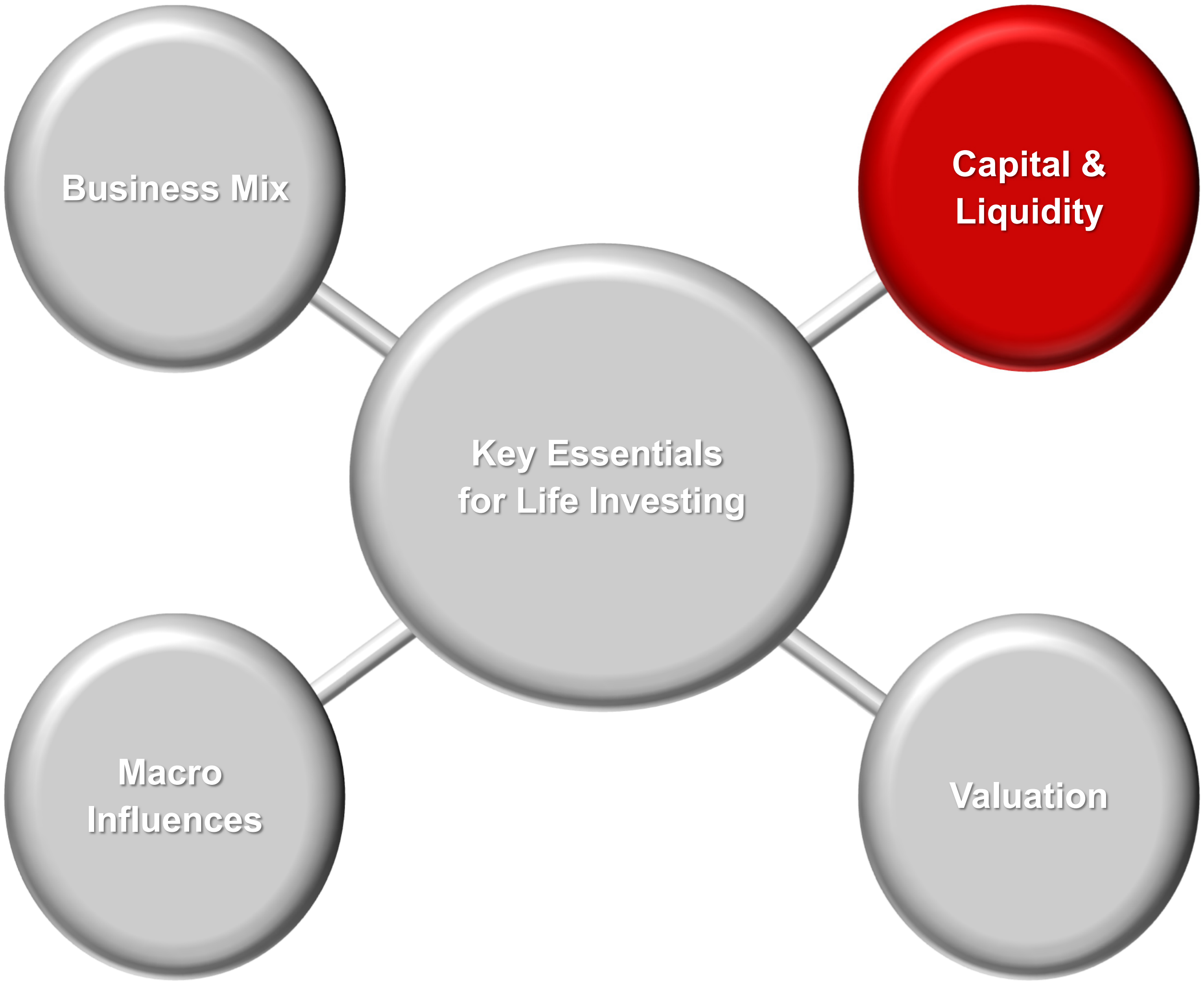
2021 Expected International Earnings



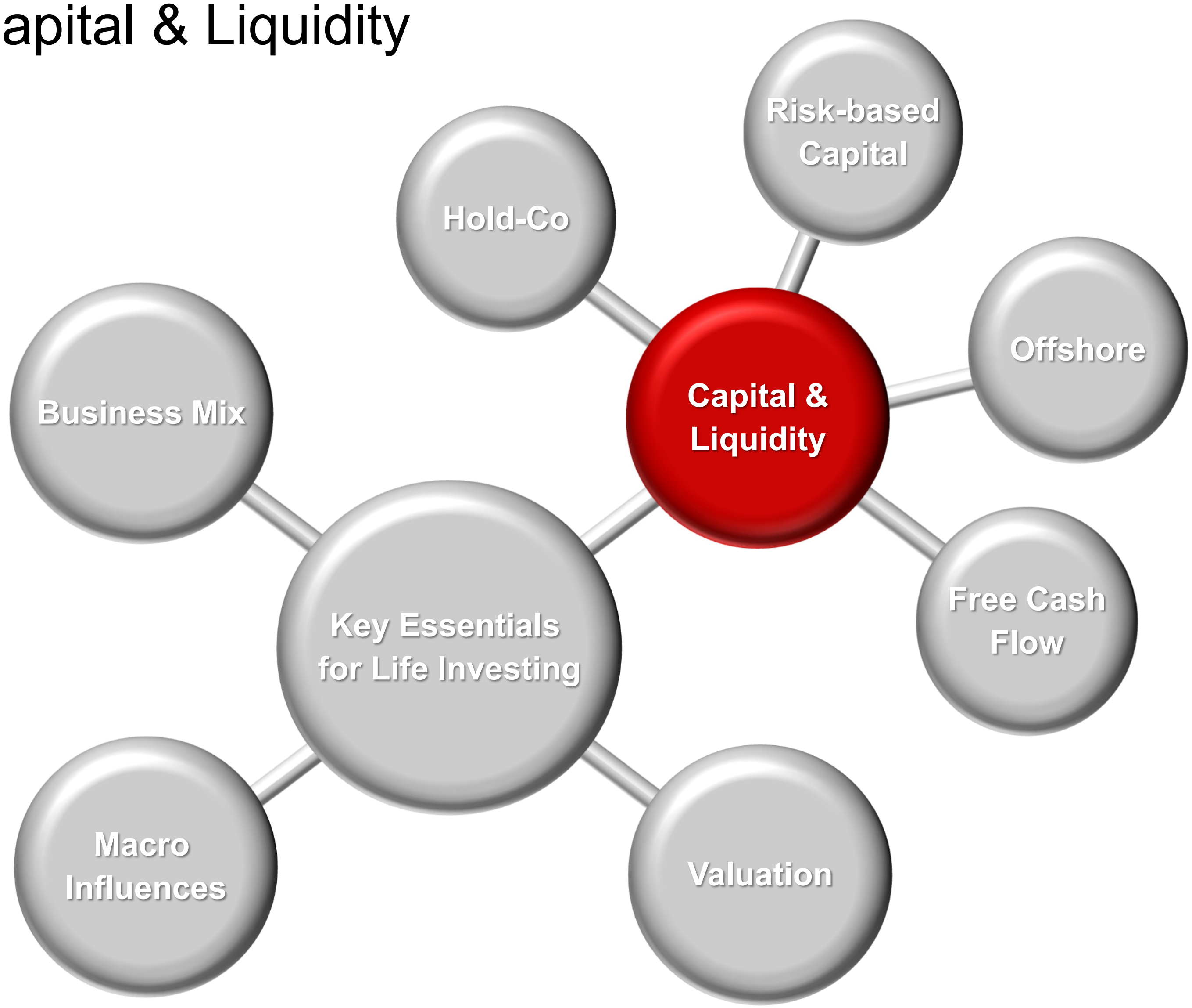
Geographic Breakdown

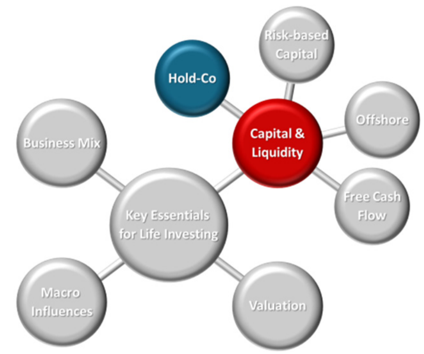


Capital & Liquidity



Capital & Liquidity





Liquidity – Strong Coverage Ratios

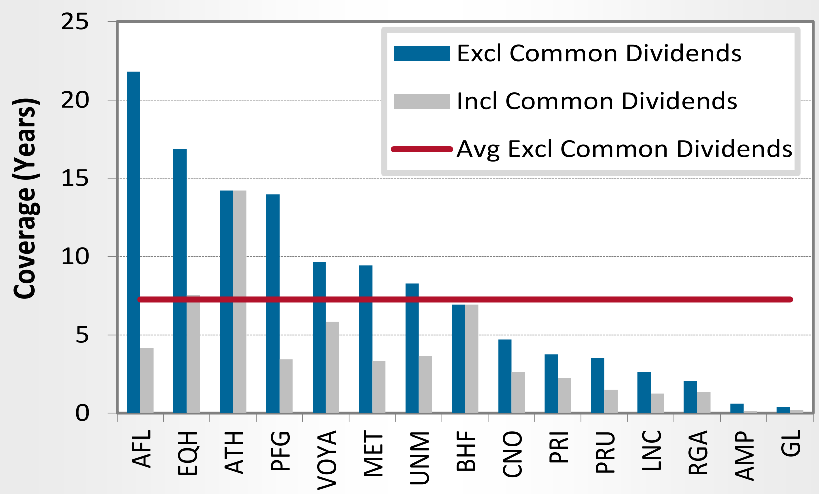
Who Cares: Equity Holders
Debt Holders
Rating Agencies (debt ratings)

Why: Liquidity crisis behind almost all failures

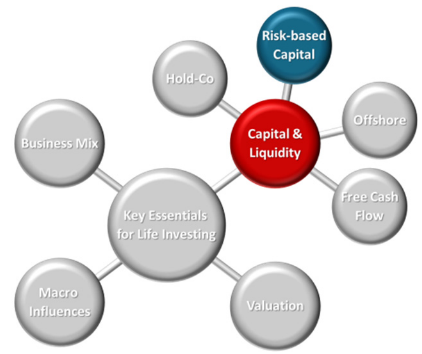
Measurement: Cash relative to Annual Needs
Annual Needs can Include (Normal) or Exclude (Crisis) Common Dividends

Industry Position: Strong at 7 years ex-dividends, 3 years including dividends

Individual Company Liquidity Standings
Current Liquidity Coverage Ratios: As of 4Q20



Source: Company Data, Morgan Stanley Research



Risk-Based Capital

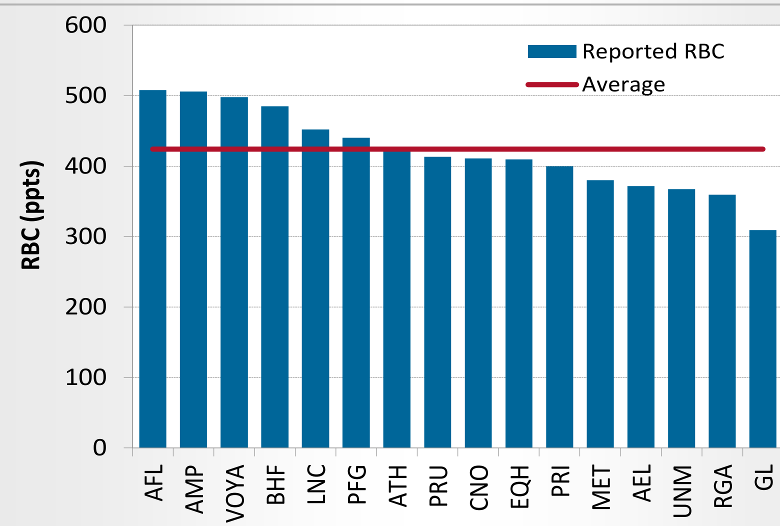
Who Cares: Hold-Co Owners
Rating Agencies (Insurance Financial Strength Ratings)
Regulators – Key Area of Focus

Why: Ability to Pay Policyholder Claims
Ability to Make Dividends to Hold-co

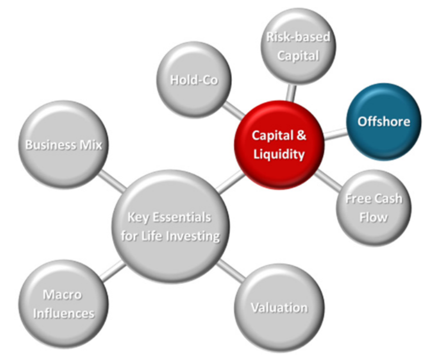
Measurement: Risk-Based Capital Ratio

Industry Position: Solid

US Life Entities' Capital Position
RBC Ratio: 4Q20



Source: Company Data, Morgan Stanley Research



International Capital

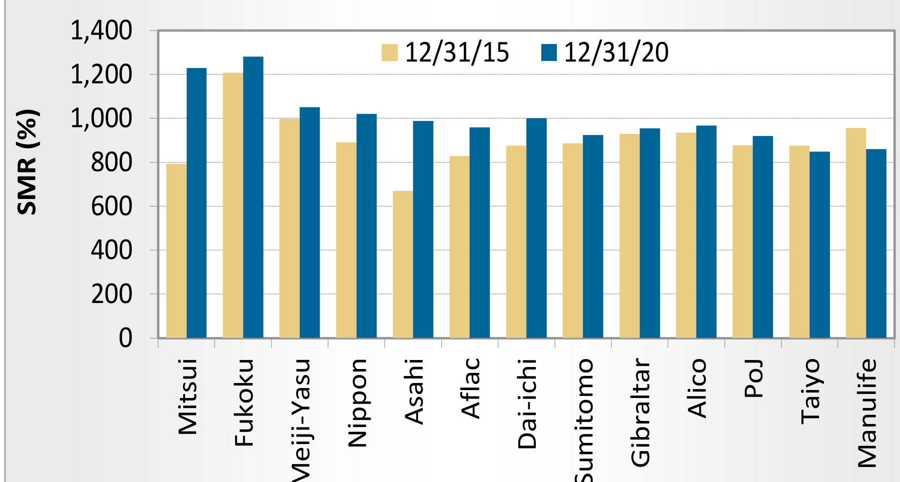
Who Cares: Hold-Co Owners
Rating Agencies (Insurance Financial Strength Ratings)
International Regulators

Why: Ability to Pay Policyholder Claims
Make Dividends to Hold-co

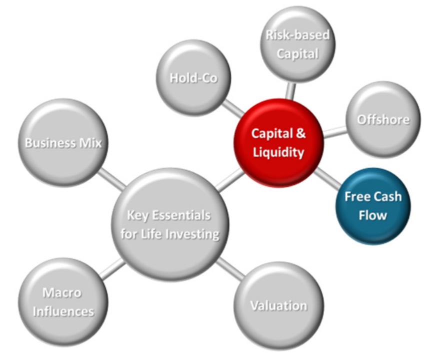
Measurement: Solvency Margin Ratio, Economic Capital

Industry Position: Solid

Japanese Entities' Capital Position
SMR Ratio: 2014 vs. 2020



Source: Company data, Morgan Stanley Research



Free Cash Flow Generation

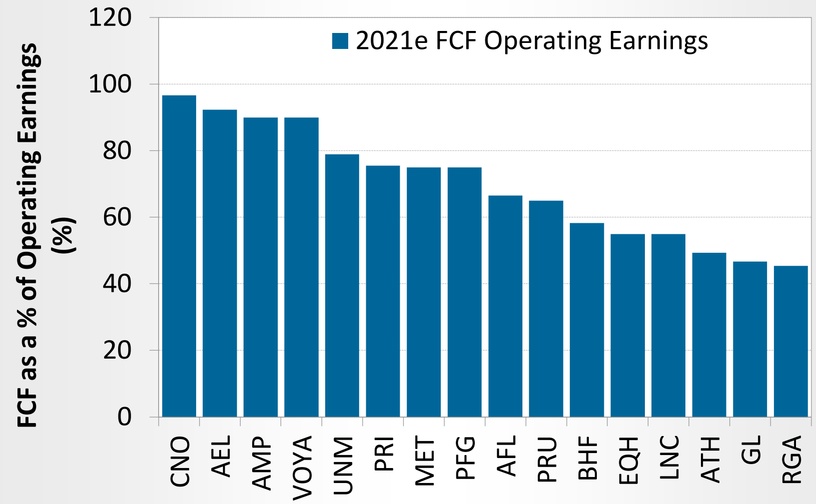
Who Cares: Debt and Equity Holders

Why: Ability to Replenish Capital
Ability to Fund Capital Management Plans

Measurement: Cash Generated Before Capital Management to Operating Earnings

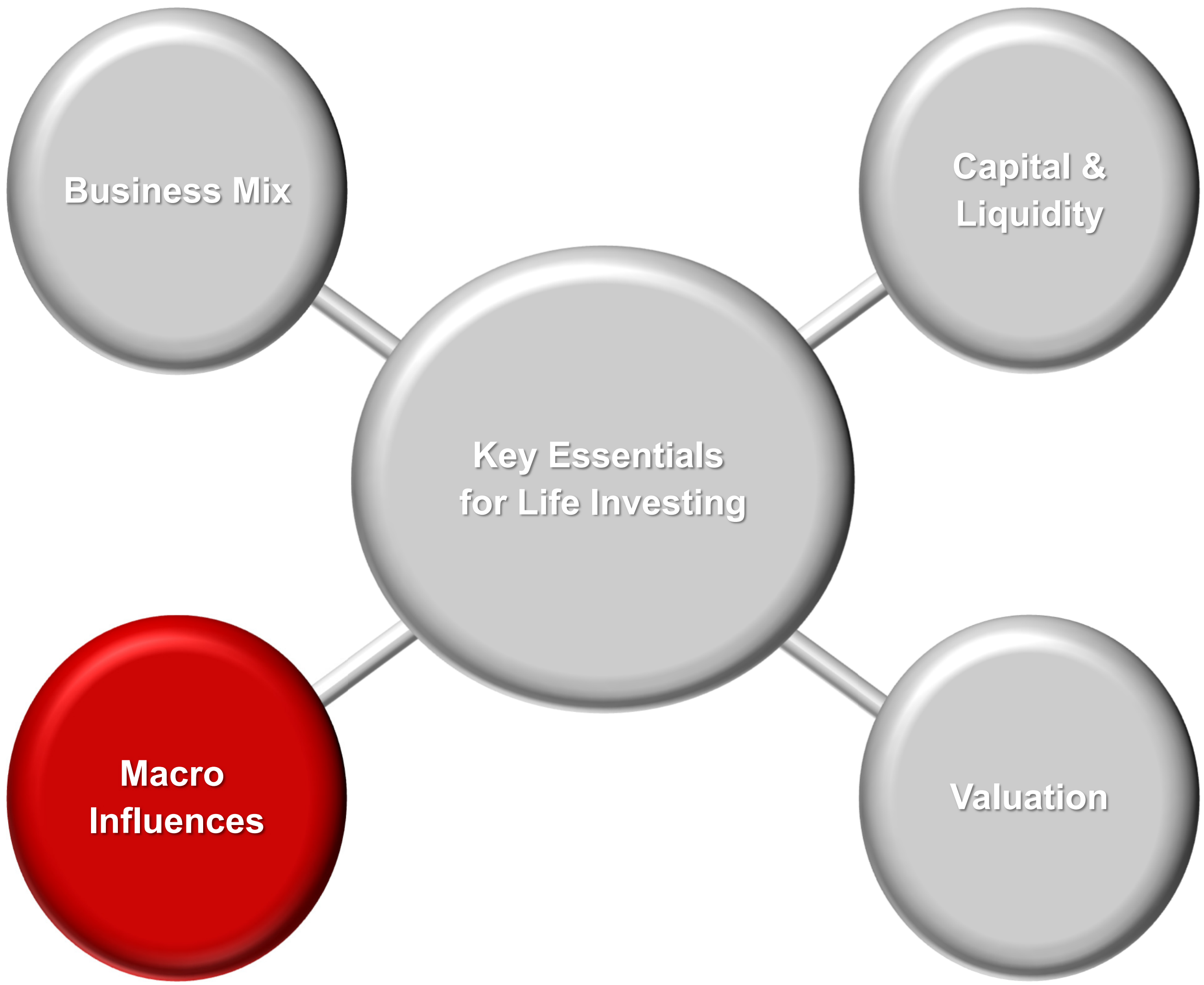
Industry Position: Mixed

Free Cash Flow Generation
As a Percentage of Operating Earnings

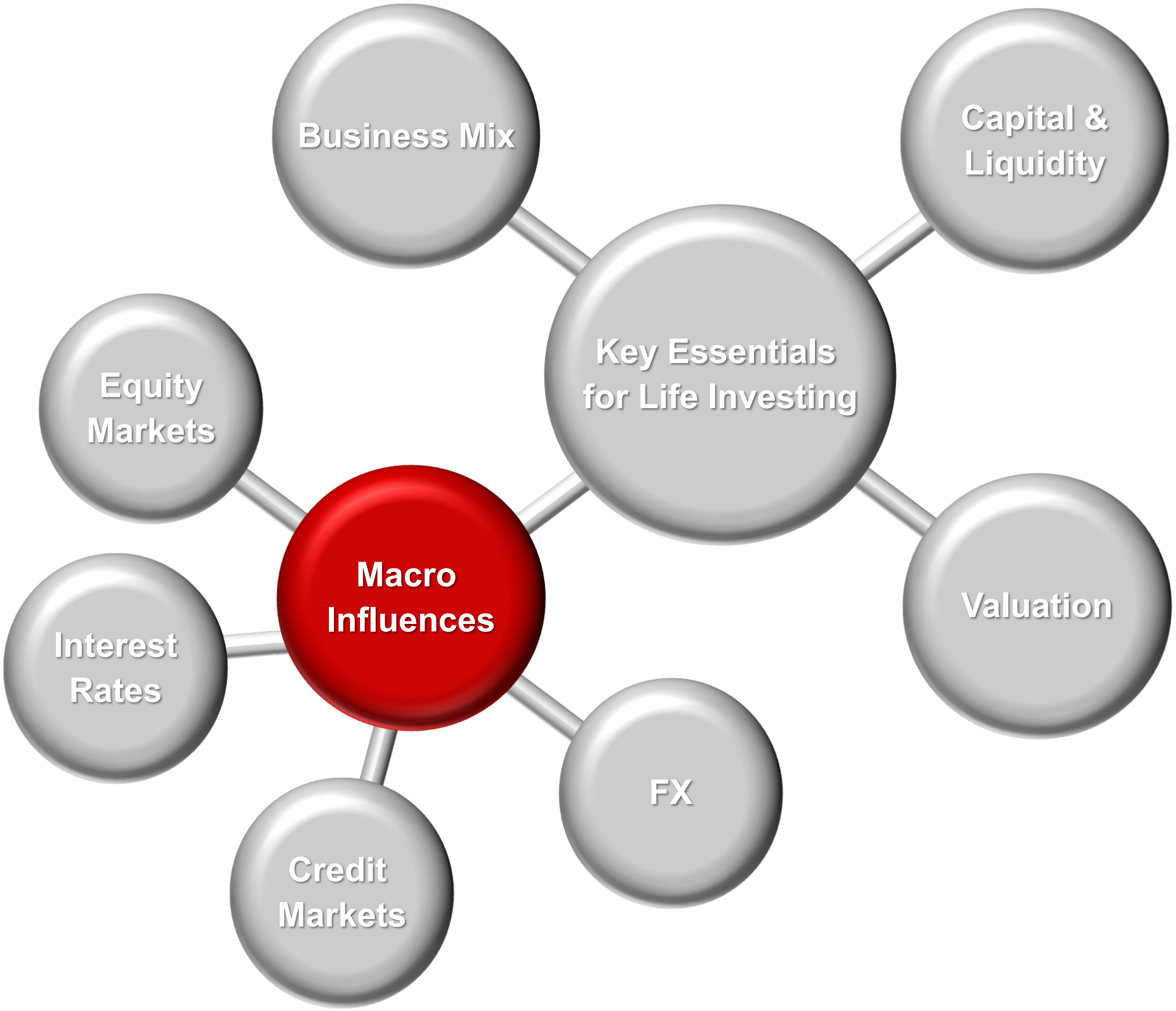


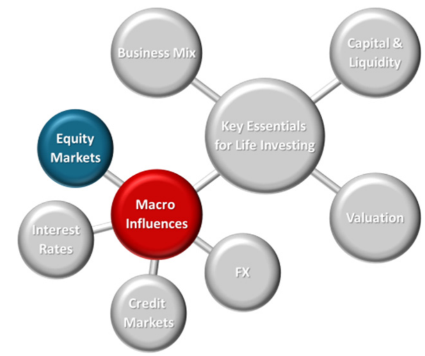
Source: Company data, Morgan Stanley Research estimates

Macro Influences



Macro Influences





Equity Markets

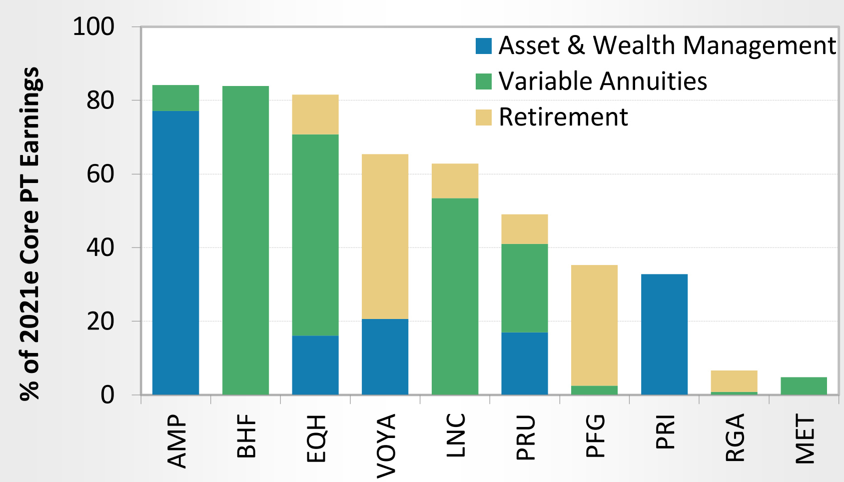
Products Impacted: Variable Annuities, Pension, Asset Management, Alternative Investments

Why: Fees based on Assets Under Management
Operating Margins
Expected Profitability

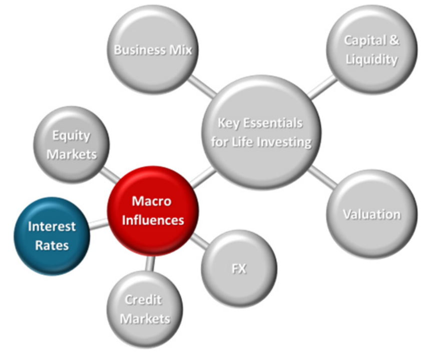
Importance: Approximately 40% of industry's earnings are from equity sensitive products

Key Companies: Ameriprise, Equitable, Brighthouse, Voya, Lincoln, Prudential, Principal

Equity Market Exposure by Company
2021 Expected



Source: Company data, Morgan Stanley Research



Interest Rates

Products Impacted: Almost all, but especially Universal Life, Annuities, Institutional Savings, Long Term Care

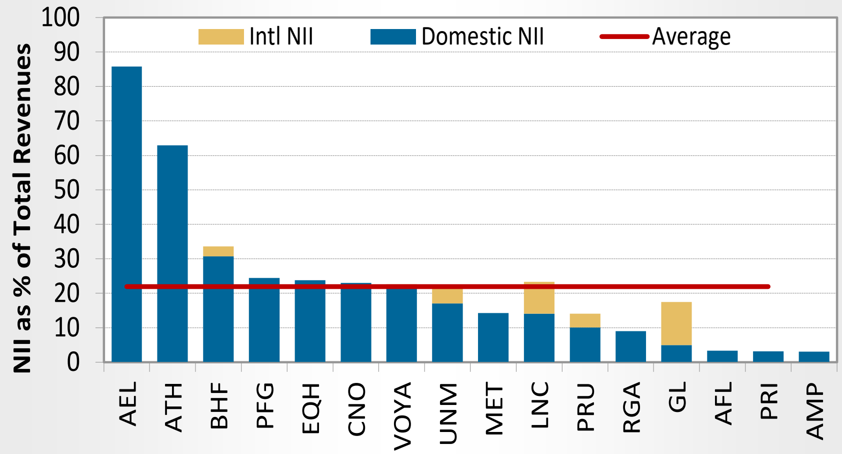
Why: Directly impacts investment income
Most balance sheet items include an interest rate assumption

Importance: Almost 20% of earnings is heavily interest rate sensitive

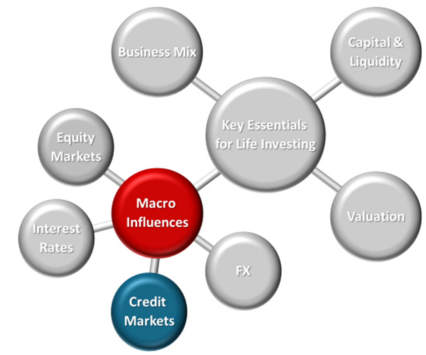
Key Companies: American Equity, Athene, Brighthouse, and Principal stand out as being more exposed

Net Interest Income to Revenues

2021 Expected



Source: Company data, Morgan Stanley Research



Credit Markets

Products: Almost all, but particularly life, fixed annuities, and institutional savings

Investment are established to pay future claims

Why: Credit losses and rating migration impact capital adequacy

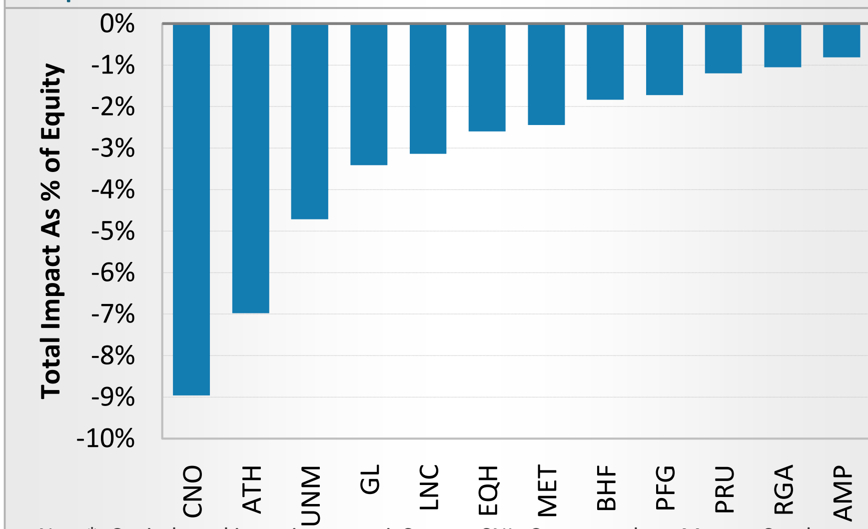
Rating migration to below investment grade results in significant additional required capital

Capital Charges Relative to Bond Ratings

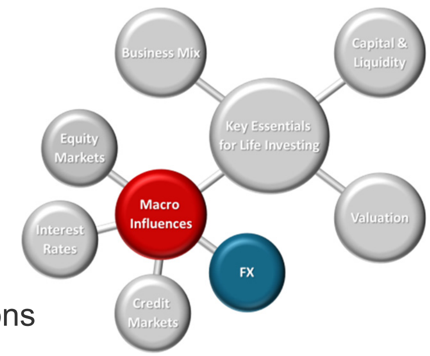
Risk Category	Equivalent Rating	AT RBC Factor (%)
US Treasuries	NM	0.0
Corporate Bonds		
NAIC 1	A & Above	0.3
NAIC 2	BBB	1.0
NAIC 3	BB	3.4
NAIC 4	B	7.4
NAIC 5	C	17.0
NAIC 6	D	19.5
Real Estate	NM	9.8
Real Estate JV	NM	15.0
Common Stock	NM	19.5

Source: American Academy of Actuaries, Morgan Stanley Research

Est. Moderate Credit Downgrade Cycle Impact Over 2-Year Period as % of Capital



Note*: Capital used is equity ex-aoci. Source: SNL, Company data, Morgan Stanley Research



Foreign Exchange

Products: All international sourced products

Includes annuities, medical, and life insurance

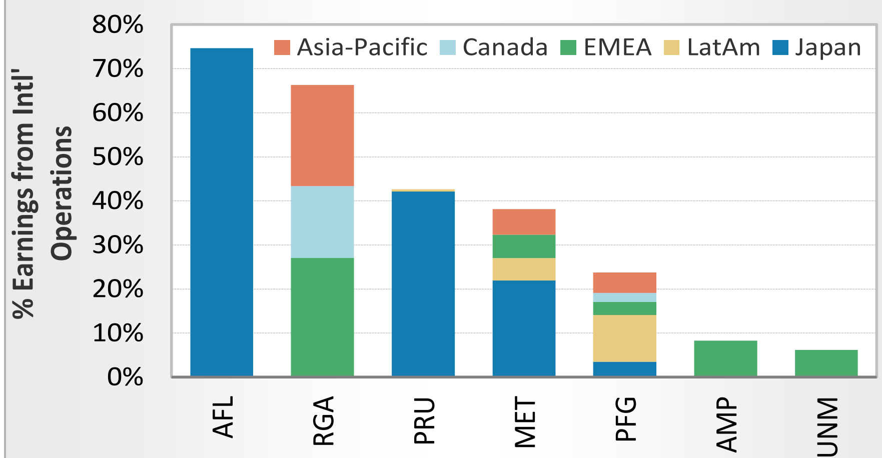
Why: Exchange rate influences earnings and value of offshore operations

Importance: Just about 27% of industry wide earnings come from offshore

Key Companies: Aflac, RGA, Prudential, MetLife, Principal

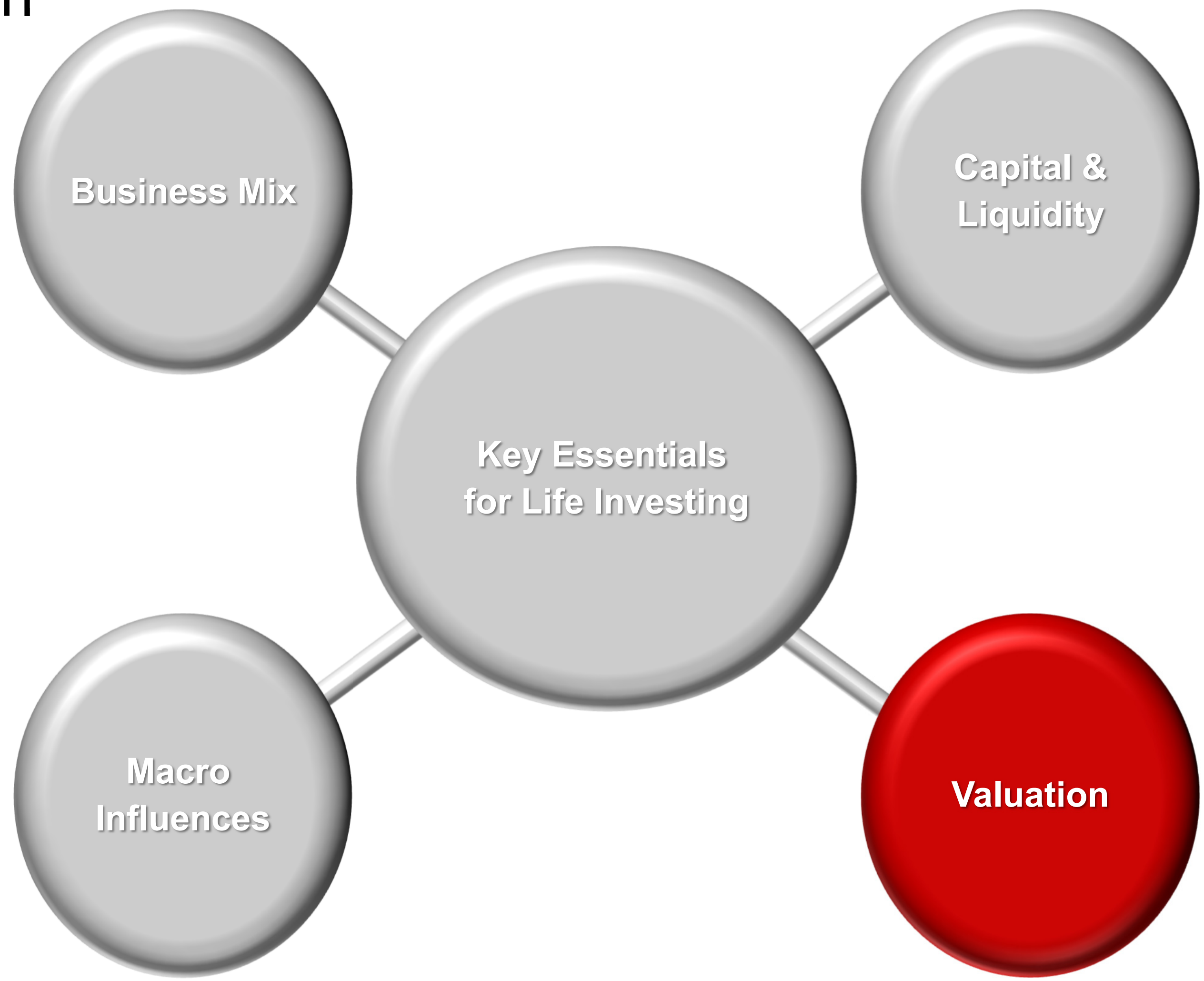
International Exposure – By Region

Based on 2021 Expected Earnings in %

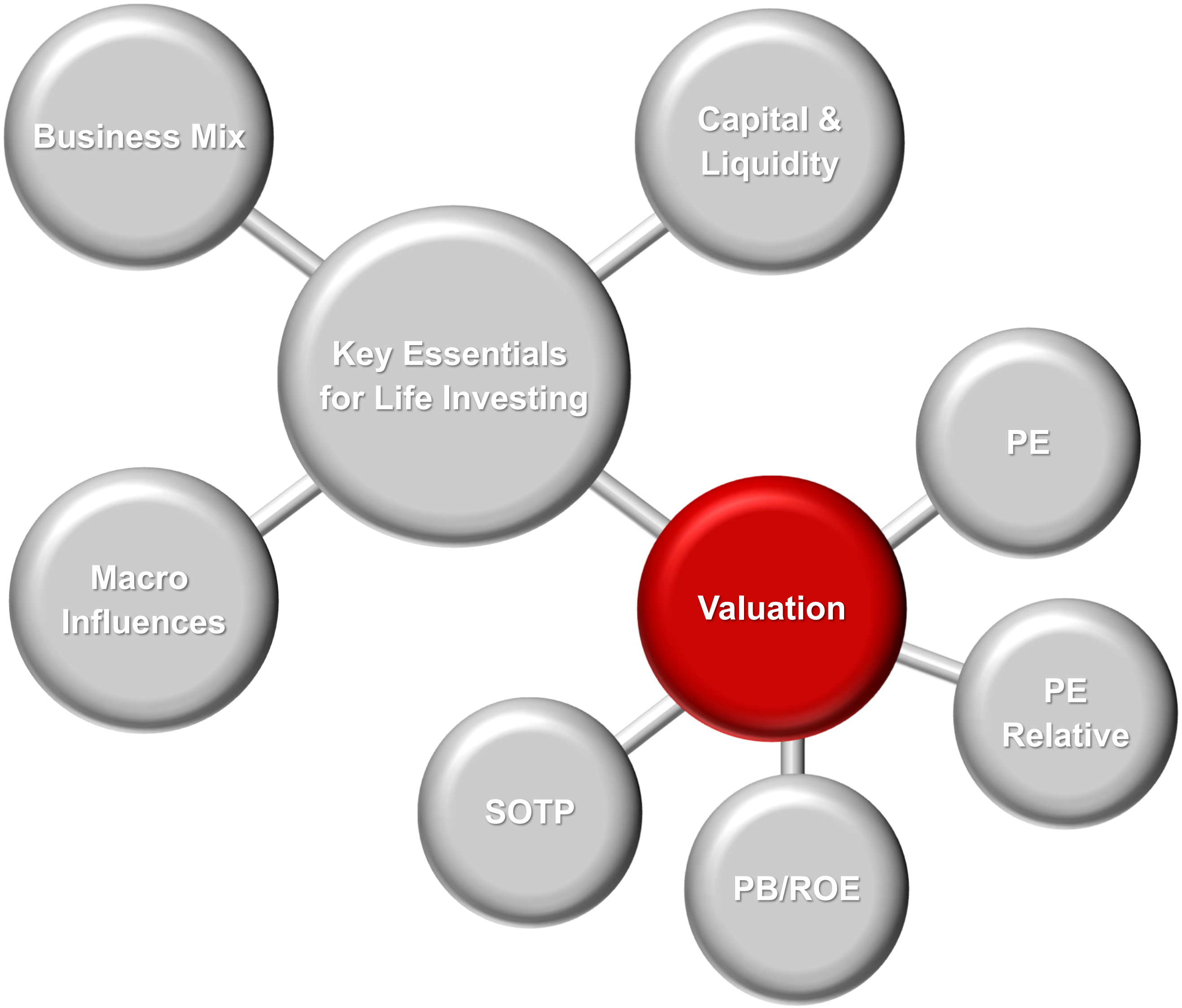


Source: Company data, Morgan Stanley Research

Valuation


Business Mix
Capital & Liquidity
Key Essentials for Life Investing
Macro Influences
Valuation

Valuation


Business Mix
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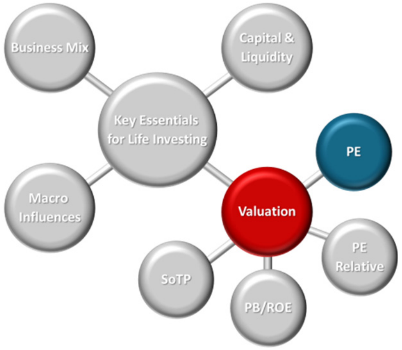
PE
PE Relative
SOTP
PB/ROE



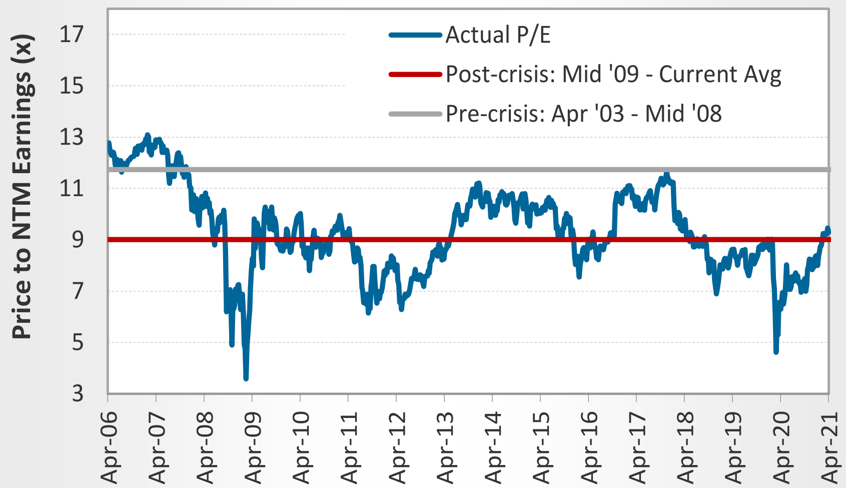
Price Earnings

Advantages: Simplicity
Avoids distortions that occur in book value

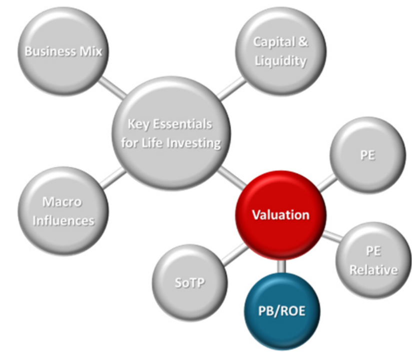
Disadvantages: Ignores growth and risk profile
Ignores relative measures

Industry Position: Depressed

Life Insurance Industry Historical Price to NTM Earnings
2006-2021 YTD



Source: Company data, Morgan Stanley Research



ROE vs. Price to Book

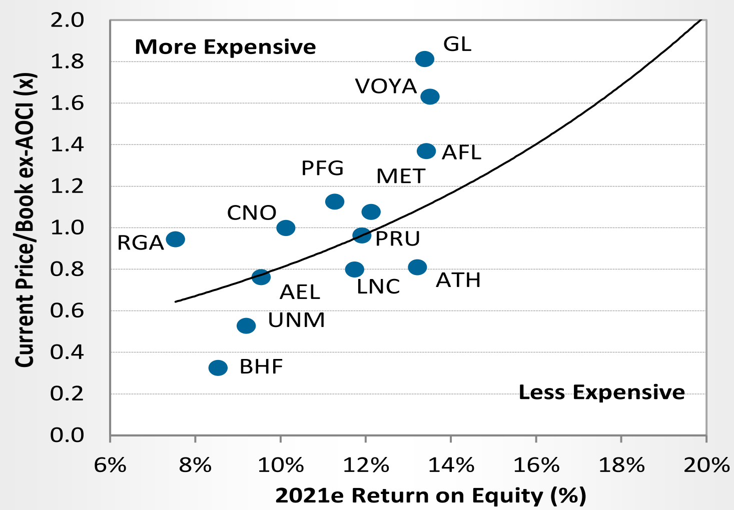
Advantages: Reflects capital intensive nature of business
Historically strong correlation

Disadvantages: Ignores growth and risk profile
Dispersion from the regression line has been increasing

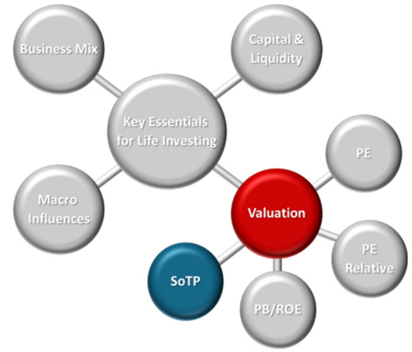
Industry Position: Used for relative positioning, not for industry-wide valuation

Book Value to ROE Comparison

Current Price to Book ex-AOCI versus 2021e Return on Equity



Source: Company data, Morgan Stanley Research estimates



Sum of the Parts

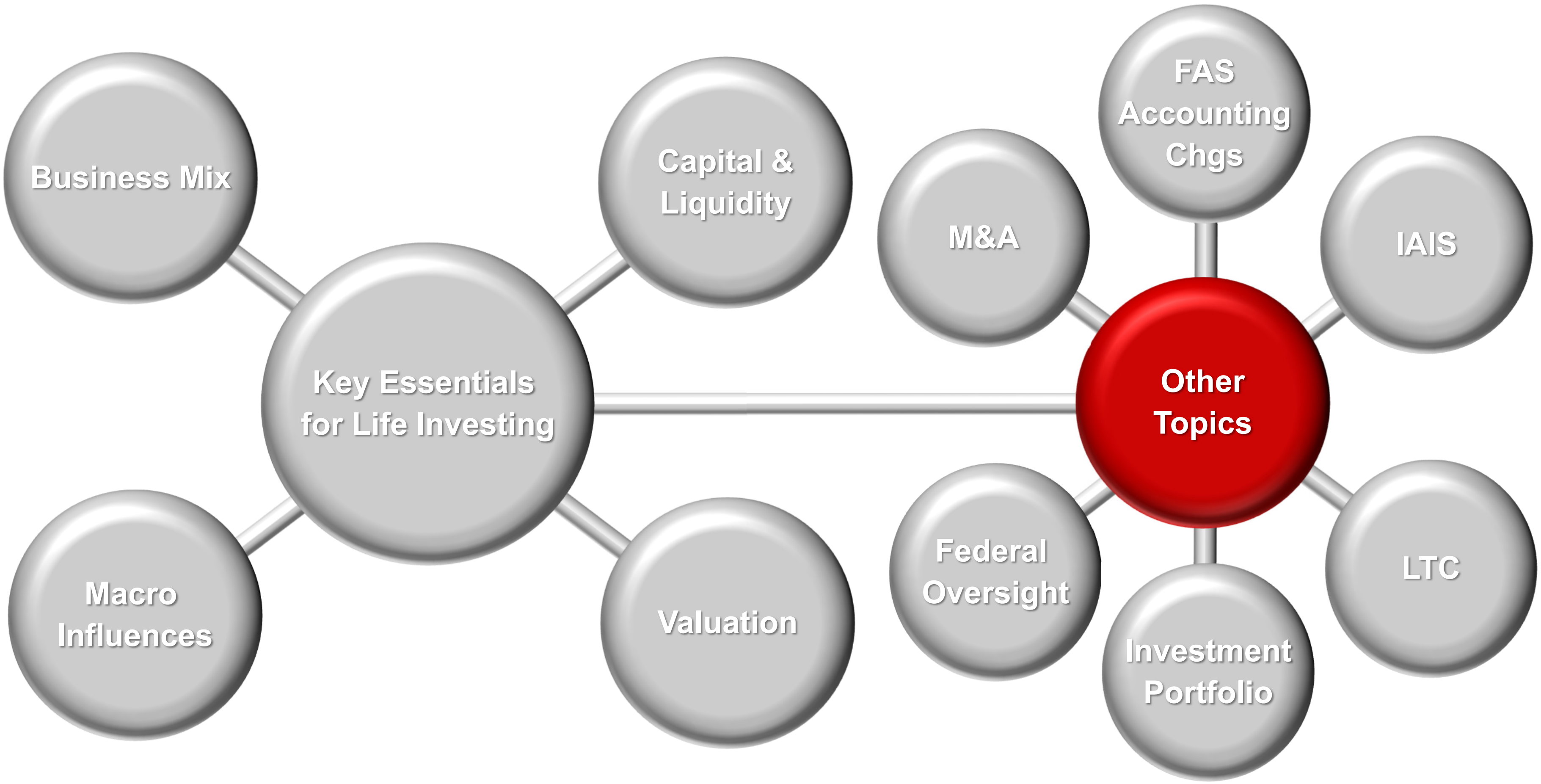
Advantages: Reflects complex nature of business mix

Disadvantages: Conglomerate discount?
Will it be realized without a break-up?

Industry Position: Inexpensive – Equitable, Voya

Sum of the Parts: Ameriprise, Athene, Equitable, CNO, Principal, Prudential, and Voya Financial

Other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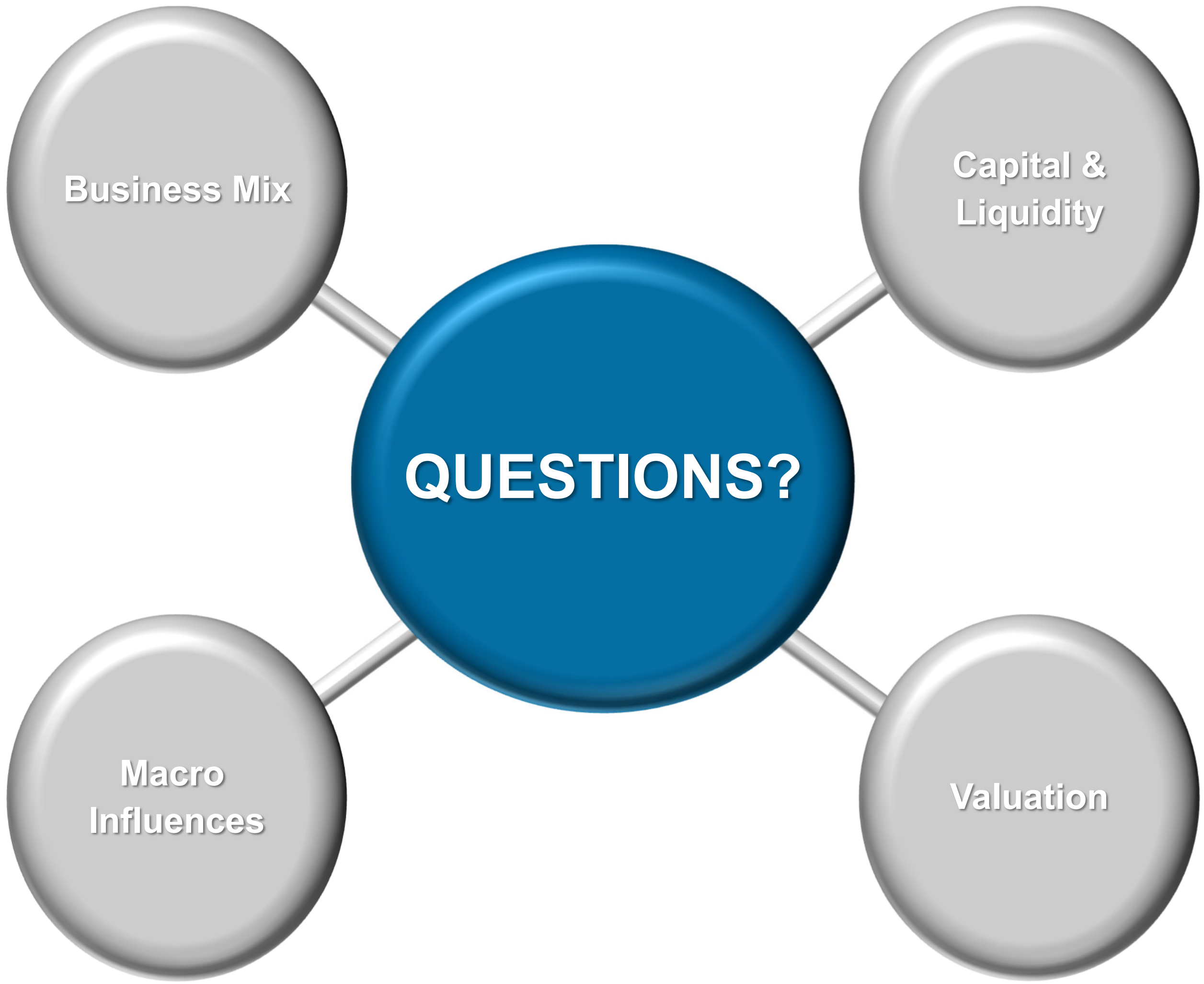
IAIS
Other Topics
Federal Oversight
Investment Portfolio
LTC


Business Mix
Capital & Liquidity
QUESTIONS?
Macro Influences
Valuation

Morgan Stanley

May 2021

FOUNDATION

Financials Spring Training Teach-In

Property & Casualty Insurance

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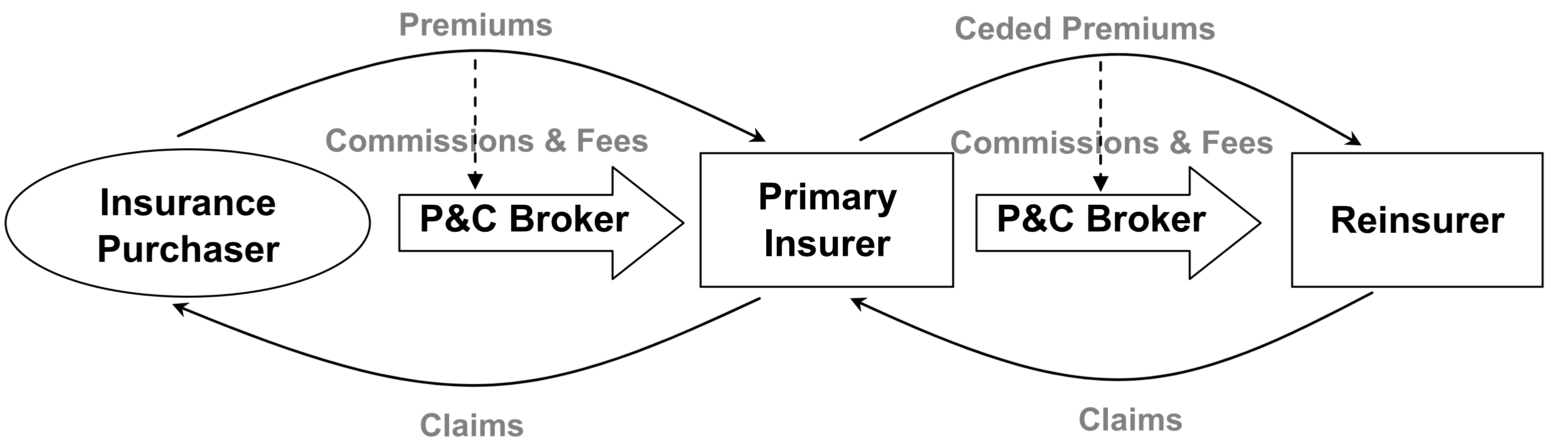
P&C Insurance Industry Supply Chain



The P&C supply chain details the flow of payment (premiums) from the insurance purchaser to the insurance carrier (primary + reinsurance). In return for premiums, carriers agree to pay claims in the event qualifying future loss events occur.

P&C brokers assist in the placement of risk in return for payment (commissions or fees) but assume no underwriting risk.

Reinsurers provide insurance for insurance companies looking to lay off (cede) a portion of their assumed risk.

Unique Characteristics of Insurance Carriers

Highly Regulated

- In the US, each state has regulators that approve rate filings (prices) and monitor capital adequacy
- Ratings agencies (AM Best, Moody's, S&P, Fitch) also play a role as industry watchdogs

Unknown COGS

- …sometimes for years
- Insurers must price a product without knowing future losses, which creates a unique market cycle
- It also requires proper reserving for future losses on long-tailed lines

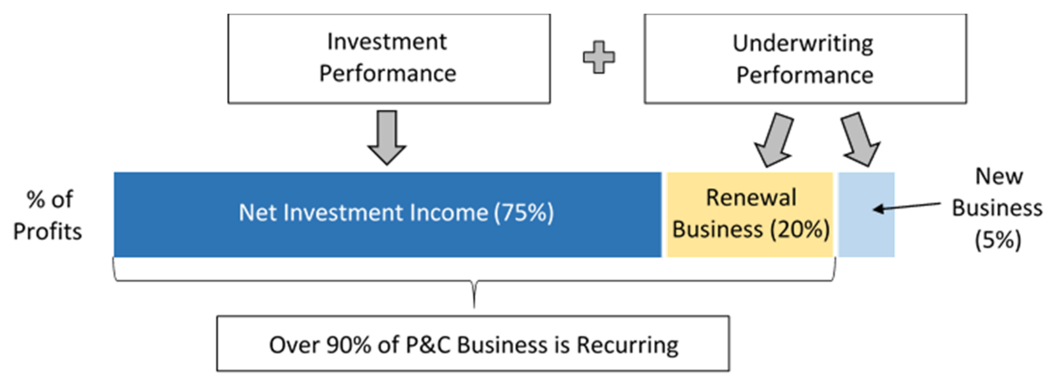
Cyclicality

- Long periods of pricing declines lasting 5-10+ years ('soft' markets) are punctuated by sharp spikes in pricing power lasting 2-4 years ('hard' markets)
- Hard markets are characterized by a restriction in capacity that makes it difficult for buyers to obtain insurance

Subject to Natural Catastrophes

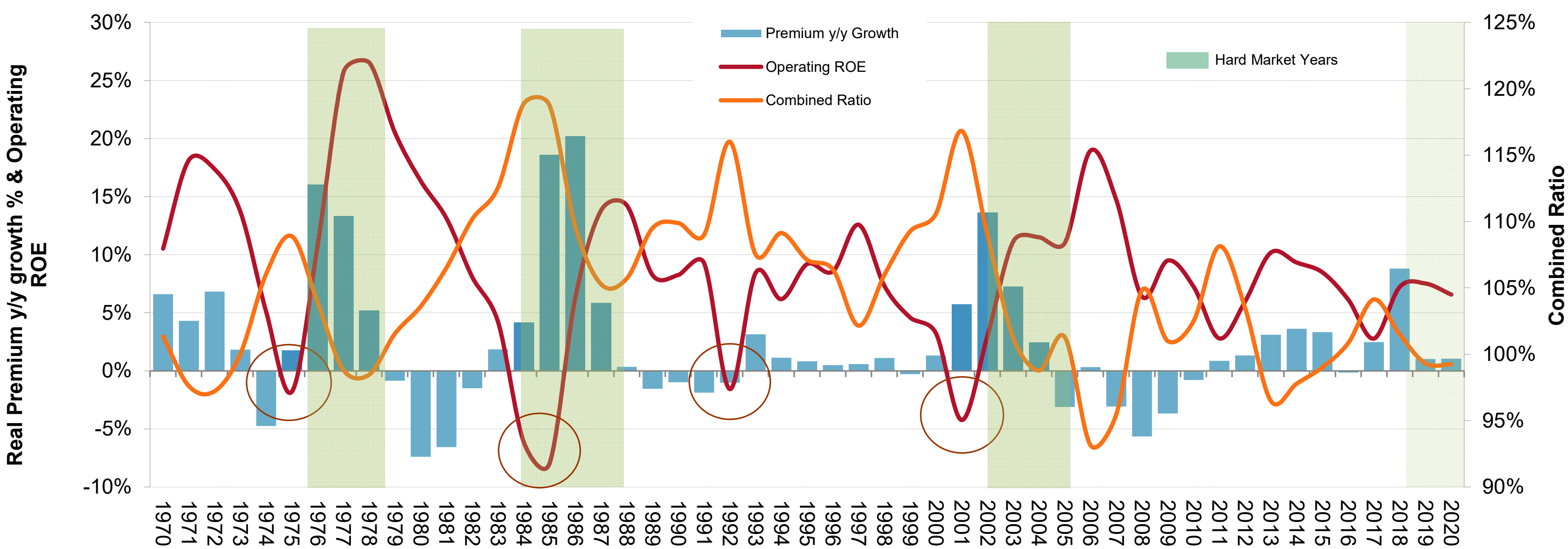
- Catastrophe risk adds uncertainty to insurers' profitability, with substantial tail risk
- Increased severe weather in recent years has emphasized the importance of accurately pricing for potential losses

Highly Recurring Business Model



The P&C Cycle" "Hard" vs. "Soft" Markets

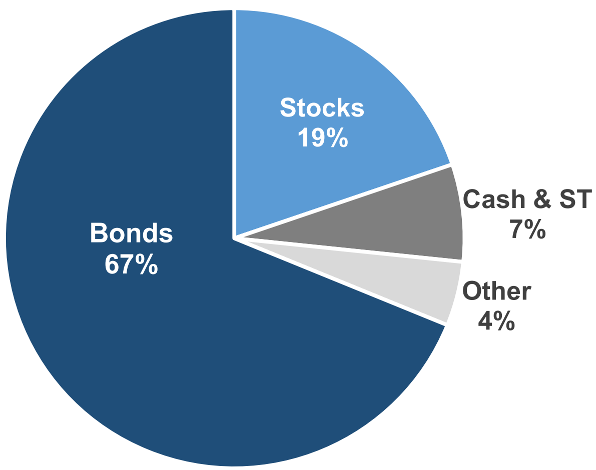
- The P&C Industry has one of the more unique business cycles in the economy. While all P&C lines move differently, the broader industry swings are **driven more by inflections in the combined ratio of longer duration commercial lines** than personal lines
- Periods of concentrated pricing power are referred to as "hard" markets as it is during these dislocated periods that insurance capacity is difficult to obtain for insurance buyers
- Starting in late 2018, most commercial lines have been 'hardening' due to **social inflation and rising loss costs** against a long period of soft pricing (=reserve risk), as well as **low interest rates** and increasing **catastrophes**



Source: Company Data, A.M. Best Aggregates & Averages, Morgan Stanley Research

Yields Matter: Investment Returns Under Pressure

Typical Investment Portfolio



Source: SNL, Morgan Stanley Research

P&C Investment Portfolios Are Conservative

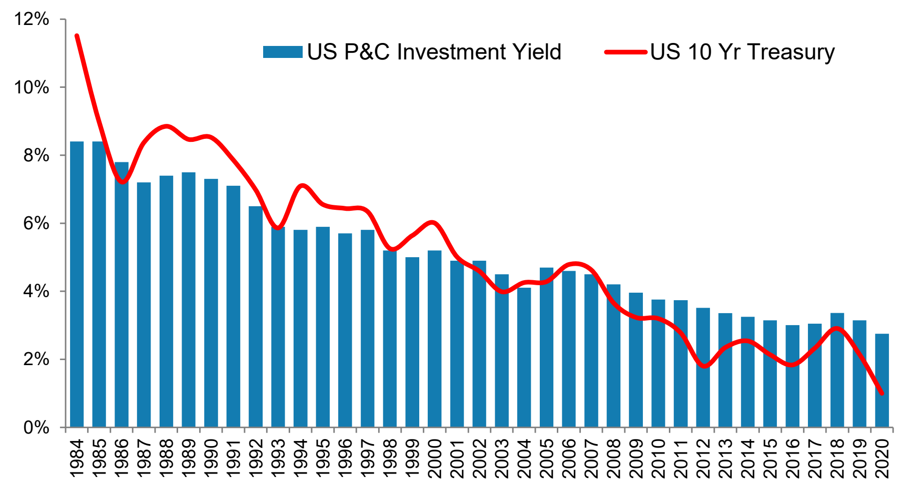
• The imminent threat of payouts connected to large catastrophe losses has forced P&C carriers to be very conservative portfolio managers. P&C portfolios are very liquid (average duration is 2-6 yrs) and high quality (typically invest in A rated or better).

• While largely fixed income investors, P&C Carriers have reduced allocations to bonds by 5% in the last decade, seeking yield in alternative investments such as stocks, loans, real estate, and private equity funds.

Lower Investment Returns

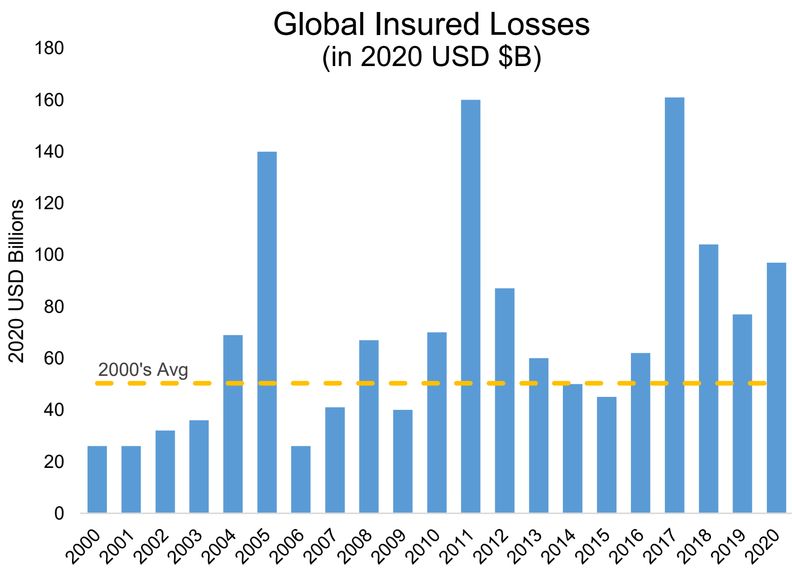
=

Higher UW Return Hurdles (drives pricing)



Source: SNL, Morgan Stanley Research

Heightened Catastrophe Activity



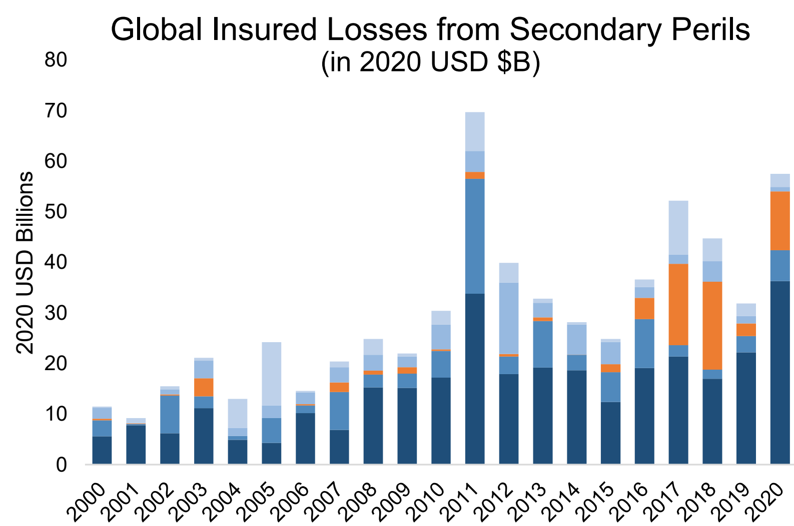
Source: AON Annual Cat Report, Morgan Stanley Research

Changing Risk Perception

- 2020 brought a record number of Atlantic Tropical storms, using the Greek alphabet for only the second time in history
- It is growing more clear the **frequency** and **severity** of natural disasters is increasing, and insurers are re-evaluating how they model exposures

Un-Modeled Risks & Secondary Perils

- Wildfires, Covid, and severe winter storms in Texas are all shining light on risks that historically have been rare
- Severe convective storms (dark blue on right) make up most of secondary peril losses, but wildfires have been growing fastest (orange)



Source: Swiss Re Institute, Morgan Stanley Research

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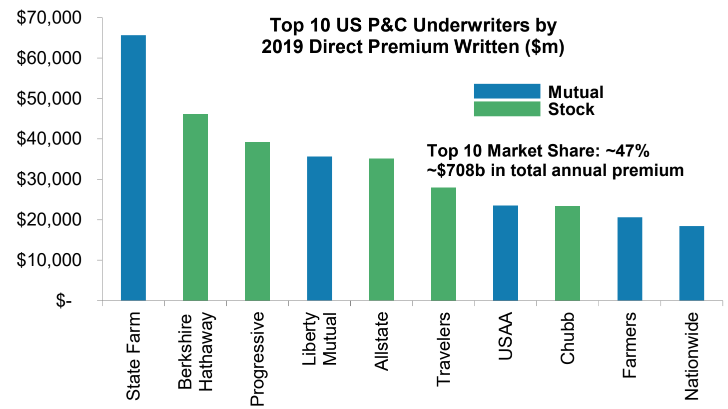
P&C Industry Segments More Consolidated Than Many Appreciate

P&C Insurance: Not A "Commodity" Business

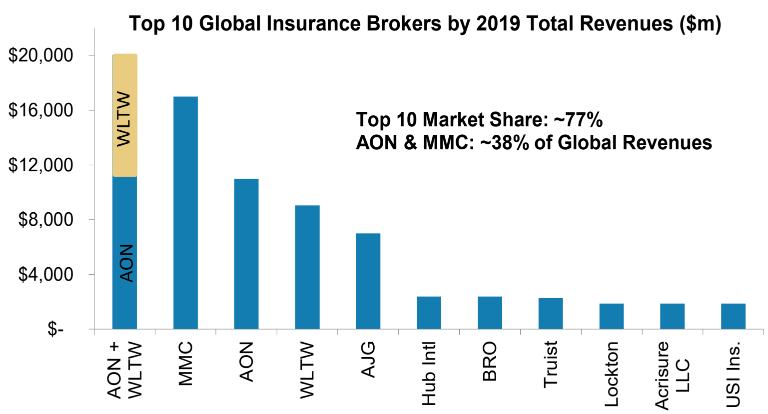
We frequently hear investors label the P&C industry as a "commodity" business. While the P&C industry is certainly plagued by structural over-capacity (2500+ competitors in the US alone) the P&C industry structure and long-term return data argue against the existence of pure "commodity" business. Market share among the top 10 players is 47-77%, depending on the segment, and the long-term ROE and stock return data reveal persistency of outperformance for market-leading companies.

Top 10 US P&C Insurers: 47% Market Share



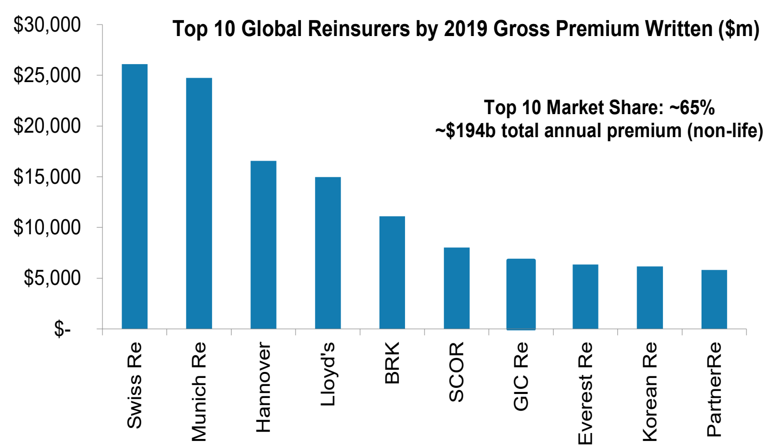
Source: NAIC, Morgan Stanley Research.

Top 10 Global Insurance Brokers: 77% Market Share



Source: A.M.Best, Morgan Stanley Research.

Top 10 Global Reinsurers: 65% Market Share



Source: A.M. Best, Morgan Stanley Research.

US P&C Industry Breakdown

Personal Lines ~ $354B

- Insurance for individuals
- Auto, Homeowners, Renters, Pet, etc.

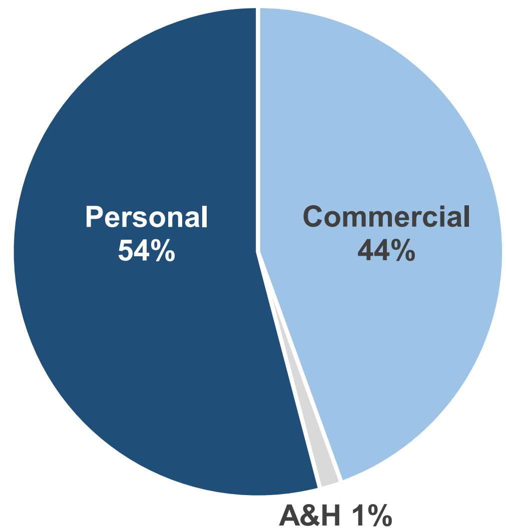
Commercial Lines ~ $291B

- Insurance for businesses
- General Liability, Workers' Comp, Commercial Multiple Peril, Commercial Auto, Marine, Medical Malpractice, Fidelity/Surety, etc.

Accident & Health ~ $9B

- Supplemental insurance for individuals, generally through an employer
- Accidental Death & Disability (AD&D), Critical Illness, Disability, Travel, Stop-Loss Medical, Dental and Vision, etc.

2020 Industry NWP of $655B



Source: SNL, Morgan Stanley Research

Property (47%) = insuring products or items

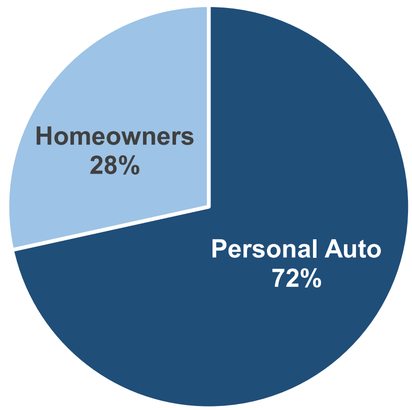
Casualty (53%) = insuring against liabilities

US P&C Market: Personal vs. Commercial

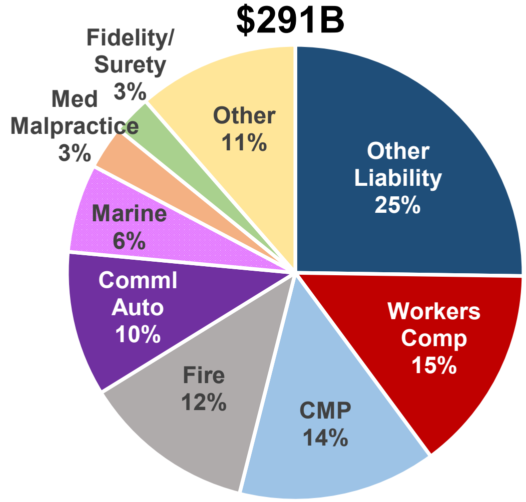
Top 10 Personal	Market Share
State Farm	16.5%
Allstate	9.8%
Progressive	9.6%
Berkshire Hathaway	9.4%
USAA	6.3%
Liberty Mutual	5.2%
Farmers Insurance	4.4%
Travelers	2.7%
American Family	2.7%
Nationwide	2.7%
Total	69.3%

Top 10 Commercial	Market Share
Chubb	5.5%
Travelers	5.3%
Liberty Mutual	4.8%
Zurich	3.8%
AIG	3.3%
Berkshire Hathaway	3.3%
CNA	3.2%
The Hartford	2.7%
Nationwide	2.5%
Tokio Marine	2.2%
Total	36.4%

2020 Personal NWP of $354B



2020 Commercial NWP of $291B



Source: SNL, Morgan Stanley Research

Personal Lines Keys to Success

- Scale
- Pricing Sophistication
- Distribution

Commercial Lines Keys to Success

- Individual Account Underwriting
- Pricing (consistency)
- Reserve expertise

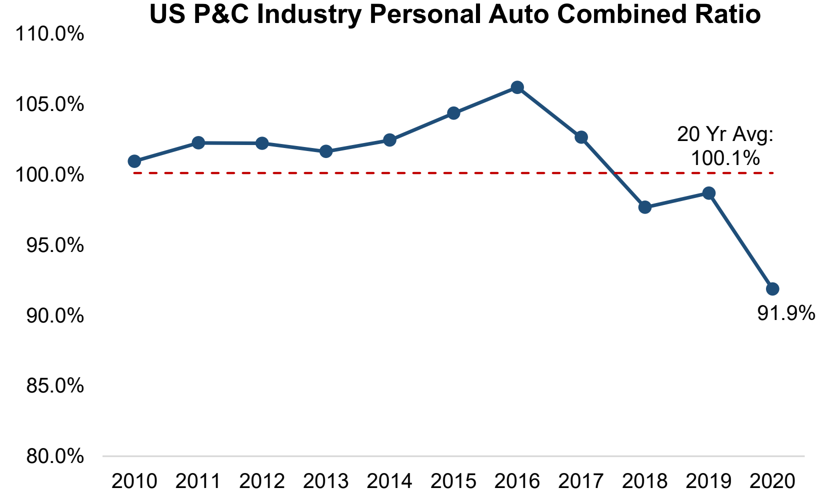
US P&C Market: Personal Auto ~$254B

Top 10 Personal Auto	Market Share % 2020	Market Share % 1996	Premium CAGR
State Farm	16.2%	21.6%	2.2%
Geico (BRK)	13.6%	2.8%	10.6%
Progressive	13.3%	3.0%	10.1%
Allstate	10.4%	13.5%	2.3%
USAA	6.3%	3.1%	6.5%
Liberty Mutual	4.7%	5.2%	3.1%
Farmers	4.0%	7.4%	0.8%
Nationwide	2.3%	4.5%	0.7%
American Family	2.1%	1.9%	3.8%
Travelers	2.0%	2.2%	2.9%
Total	74.7%	65.0%	4.1%
	Total Industry CAGR:		*3.5%*

PGR and Geico have grown rapidly since 1996 compared to peers, in part due to their early adoption of direct distribution

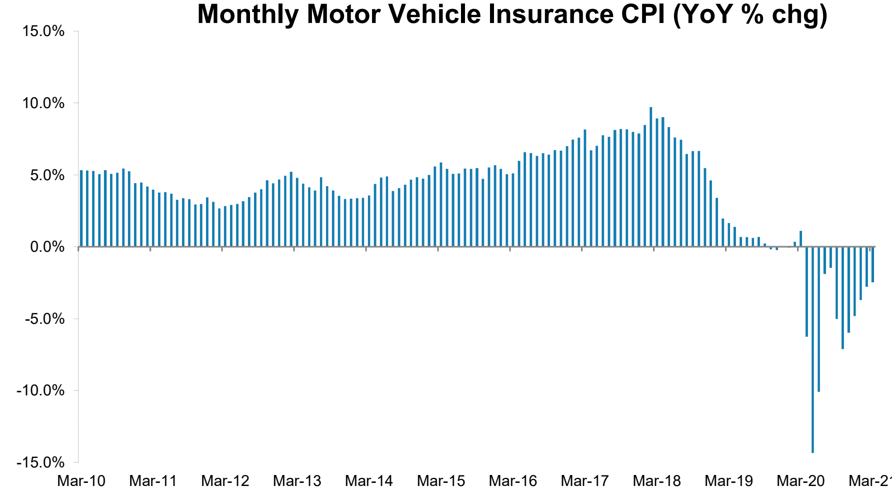
The Personal Auto market is competitive, with insurtech, UBI and OEM entering the market coupled with recent strong profitability as a result of the pandemic

US P&C Industry Personal Auto Combined Ratio



Source: SNL, Morgan Stanley Research

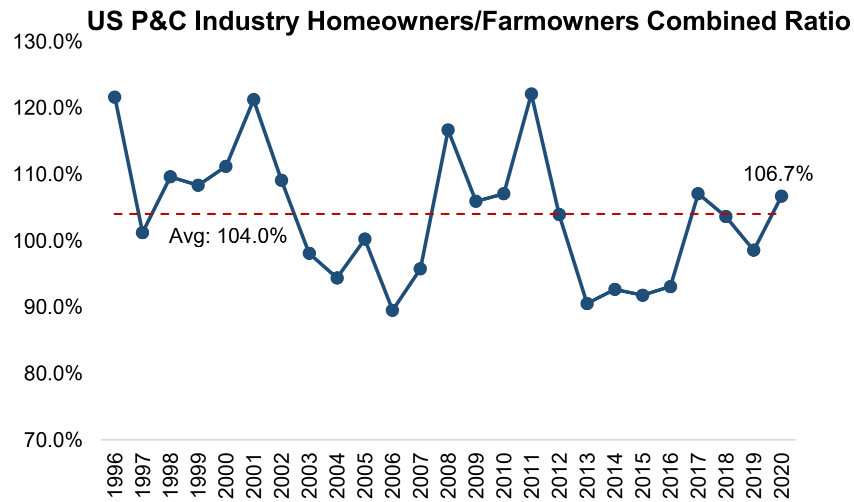
Monthly Motor Vehicle Insurance CPI (YoY % chg)



Source: BLS, Morgan Stanley Research

US P&C Market: Homeowners ~$101B

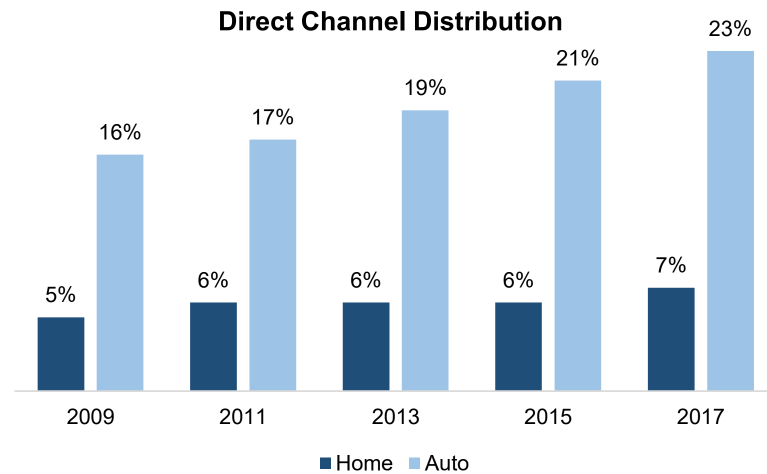
Top 10 Homeowners	Market Share % 2020	Market Share % 1996	Premium CAGR
State Farm	17.9%	23.8%	4.7%
Allstate	8.9%	12.2%	4.6%
USAA	6.7%	3.4%	9.1%
Liberty Mutual	6.3%	6.4%	5.9%
Farmers	5.5%	6.4%	5.3%
Travelers	4.4%	4.4%	6.0%
American Family	4.0%	1.9%	9.3%
Nationwide	3.0%	4.5%	4.2%
Chubb	2.8%	2.4%	6.8%
Progressive	1.7%	0.0%	25.5%
Total	61.2%	65.4%	5.7%
	Total Industry CAGR:		*6.0%*



Source: SNL, Morgan Stanley Research

Homeowners' has been **slow to adopt Direct to Consumer (DTC) distribution,** but new entrants and incumbents alike have more recently pursued growth in the channel

Another theme in the market is integrating **'smart home'** features into insurance policies to mitigate risk of losses



Source: McKinsey, Morgan Stanley Research

US P&C Market: Other Liability ~$74B

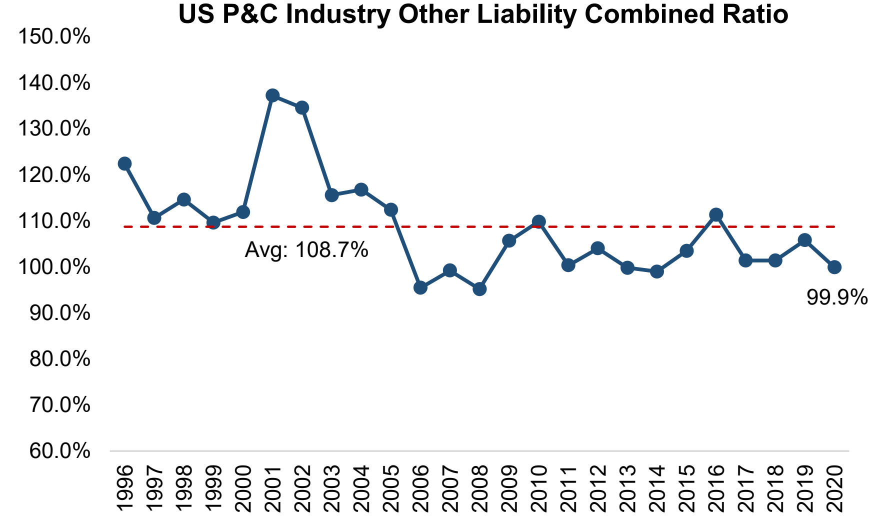
Top 10 Other Liability	Market Share % 2020
Chubb	8.0%
Assurant	4.9%
Travelers	4.7%
Liberty Mutual	4.4%
AIG	4.4%
AXA	4.2%
Berkshire Hathaway	4.0%
Fairfax Financial	3.7%
CNA	3.6%
W.R. Berkley	3.5%
Total	45.2%

Other Liability (claims made and occurrence) is a wide-ranging line of business that protects against legal liability resulting from negligence, carelessness, or failure to act

- Errors & Omissions, Directors & Officers, Umbrella, Construction etc

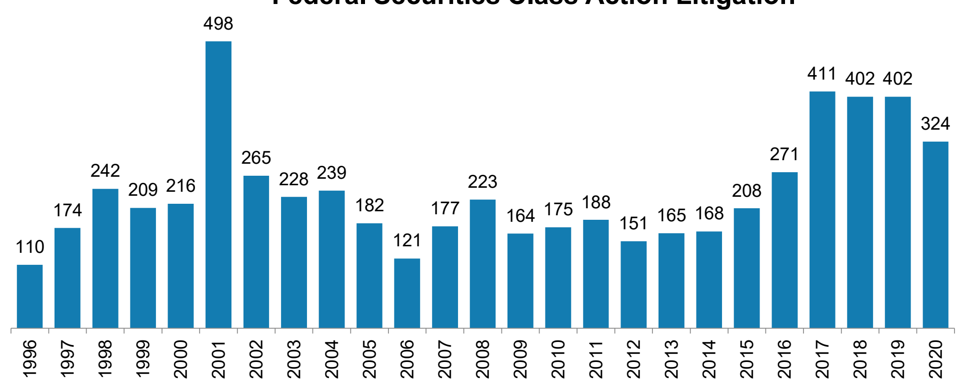
Along with Commercial Auto, Other Liability lines have faced increasing loss costs in the wake of **social inflation** (increased frequency and severity of lawsuits)

US P&C Industry Other Liability Combined Ratio



Source: SNL, Morgan Stanley Research

Federal Securities Class Action Litigation



Source: Stanford Law School, Morgan Stanley Research

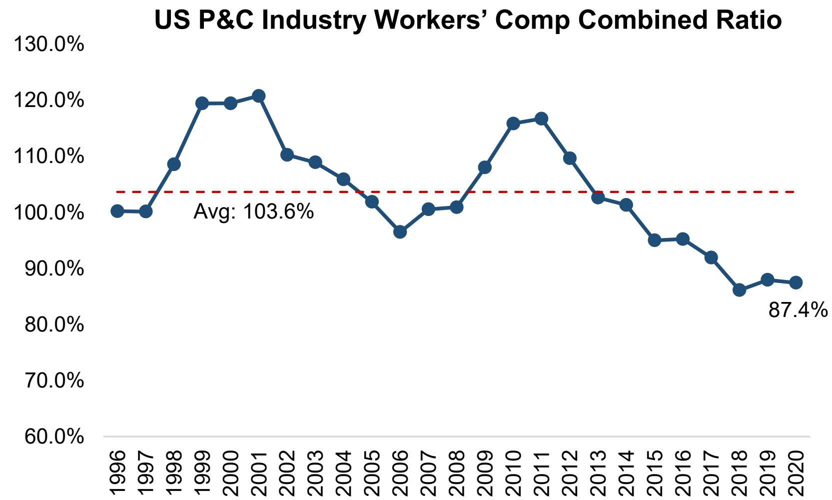
US P&C Market: Workers' Comp ~$43B

Top 10 Workers' Compensation	Market Share % 2020	1996	Premium CAGR
Travelers	7.3%	6.1%	3.2%
The Hartford	5.9%	4.1%	4.0%
Zurich	4.9%	3.3%	4.2%
Chubb	4.5%	3.0%	4.2%
Liberty Mutual	4.2%	11.7%	-1.8%
Berkshire Hathaway	3.9%	0.4%	12.8%
AmTrust Financial	3.8%	0.4%	12.3%
AF Group	3.3%	0.7%	9.6%
State Ins Fund WC	3.2%	0.0%	NA
Old Republic	2.6%	1.5%	4.7%
Total	43.5%	31.2%	3.9%
	Total Industry CAGR:		*2.5%*

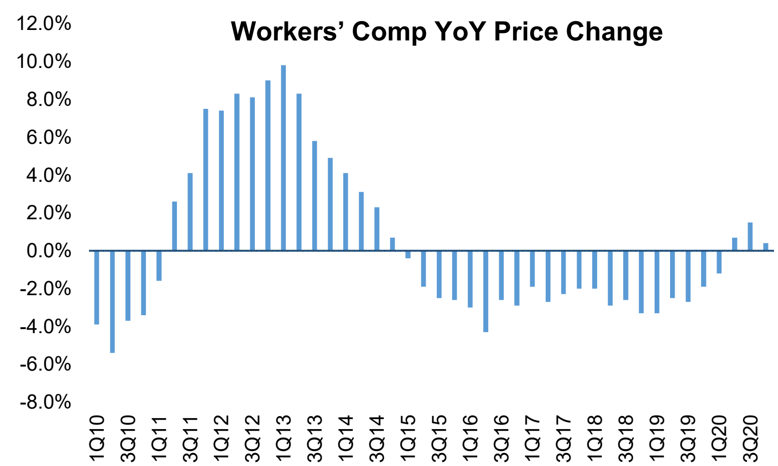
Workers' Comp is among the longest-tailed lines, making up the **largest proportion of industry reserves at 22%**

- Covers medical expenses and lost wages from injury at work

Loss trends, and in turn results, have been very favorable over the last ~5 years, which has led to a softer price environment



Source: SNL, Morgan Stanley Research



Source: CIAB, Morgan Stanley Research

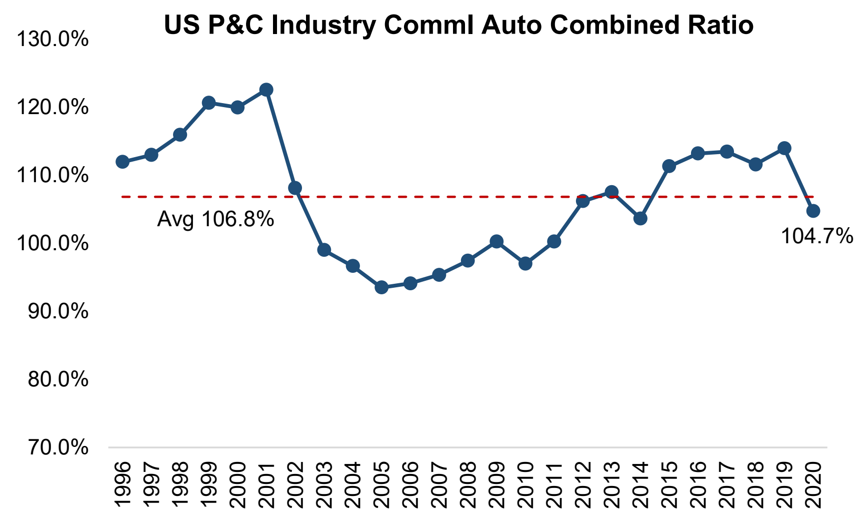
US P&C Market: Commercial Auto ~$30B

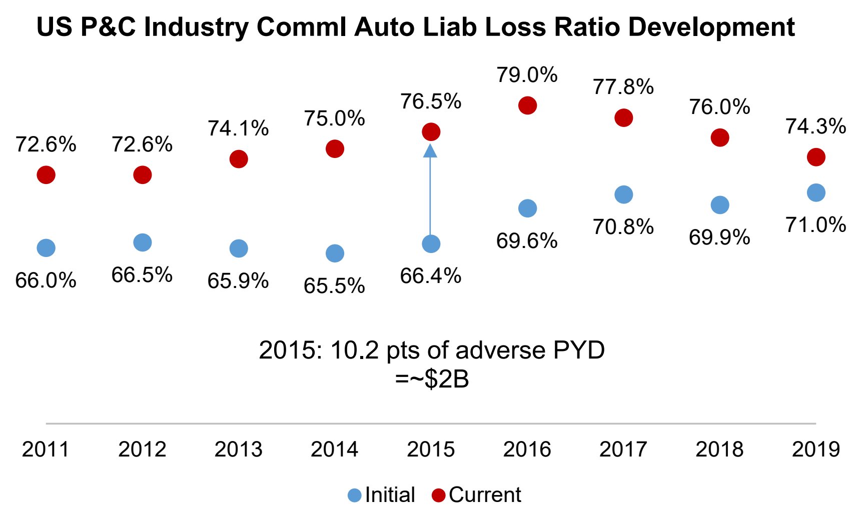
Top 10 Commercial Auto	Market Share % 2020	Market Share % 1996	Premium CAGR
Progressive	12.1%	2.4%	11.0%
Travelers	6.2%	9.5%	2.0%
Old Republic	4.1%	2.7%	5.7%
Liberty Mutual	3.7%	7.1%	1.0%
Nationwide	3.6%	3.4%	4.1%
Zurich	3.5%	4.3%	3.0%
Berkshire Hathaway	3.2%	0.8%	9.8%
Auto-Owners Insurance	2.7%	1.7%	5.9%
Allstate	2.3%	2.5%	3.6%
Chubb	2.0%	2.0%	3.8%
Total	43.5%	36.3%	4.6%
	Total Industry CAGR:		*3.8%*

Commercial Auto (liability and physical damage) covers cars, trucks, or vans that are used for business

Along with Other Liability, the line has seen dramatic **loss cost inflation** from rising frequency and severity of lawsuits and tort trends

- Pricing has been strong in recent years, but carriers are still grappling with reserves from prior years





Why Should Investors Focus on Reserve Analysis?

The numbers are large and small changes can have a big impact

- Loss and loss adjustment expense (L&LAE) reserves are the largest liability on the industry's BS
  - Total US P&C Industry liabilities: $1,268b (at year-end 2018)
  - Loss & LAE reserves: $661b (52% of total liabilities)
  - A 1% increase in reserves equates to a $6.6b pretax hit to earnings

Reserve changes directly impact earnings

- Every $1 increase in reserves lowers pre-tax earnings by $1
- Income statement incurred losses = Losses paid in year + Change in Reserves during year

Reserving is highly subjective; management judgment comes into play

Annual P&C Reserve disclosure is required by US regulators and offers a very detailed line by line look at insurance reserves by accident year

Source: Morgan Stanley Research

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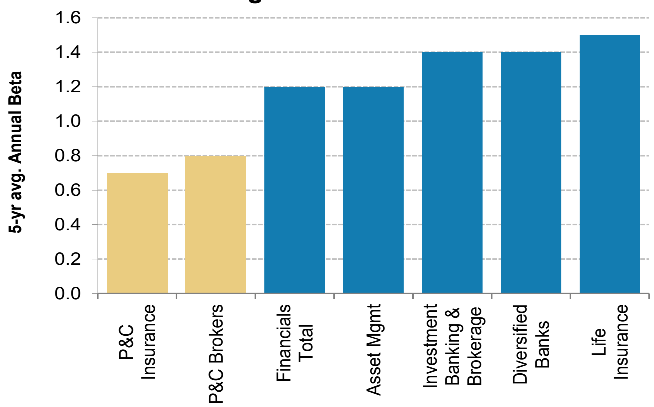
P&C Stock Returns Have Proven Defensive Over the Long Term

Average Beta Across Financials



Source: S&P 500, Morgan Stanley Research.

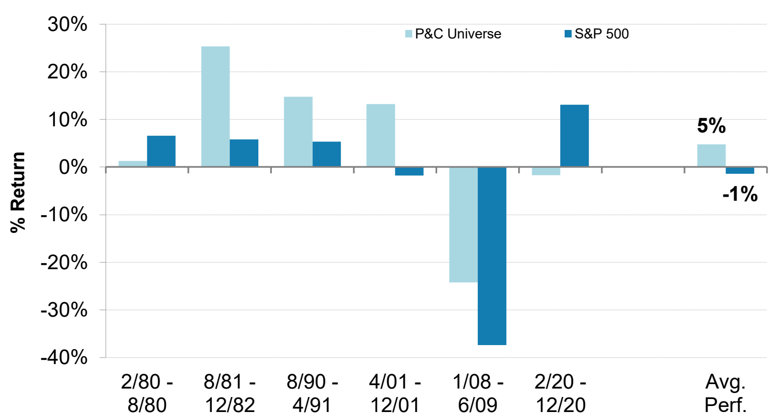
P&C Stocks Have Been Less Volatile Than Most Other Stocks

- P&C stocks have an average beta of ~0.7 ranking the industry below other financials and the S&P 500.

P&C Stocks Have Outperformed In Economic Recessions

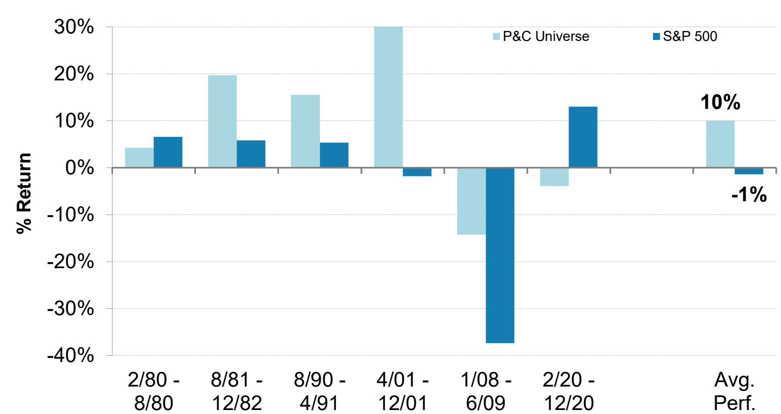
- P&C stocks outperformed in 4 of the last 6 recessions. Carriers posted avg returns of +5%, exceeding the S&P 500 by 6pts; brokers posted avg returns of +10%, exceeding the S&P 500 by 11pts.

P&C Carrier Performance During Recessionary Periods



Source: Company Data, Thomson Reuters, Morgan Stanley Research.

P&C Broker Performance During Recessionary Periods



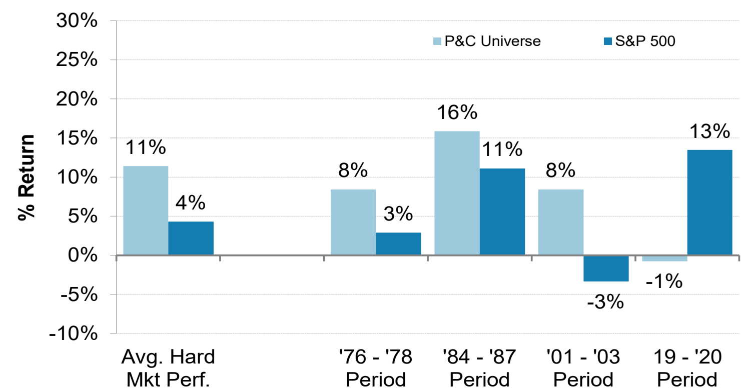
Source: Company Data, Thomson Reuters, Morgan Stanley Research.

The P&C Cycle Is a Key Stock Driver, but Not the Only One

P&C Stocks Have Generally Outperformed In “Hard” Markets…

- P&C stocks have historically outperformed meaningfully when P&C pricing power is rising during a “hard” market.
- Average return is a +11% CAGR, which is 700bps better annually than the S&P 500 during the same period.
- **2020 detracted from the trend** of outperformance due to the potential risk of Covid losses for P&C carriers
- The desire to capture this outperformance leads to constant analysis and speculation in the investment community on “when” the next P&C cycle may begin.

P&C Stocks: Hard Market Average Returns



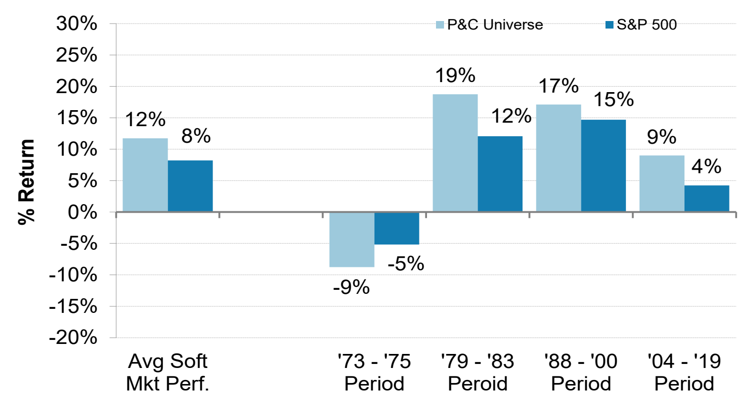
Source: Factset, Thomson Reuters, Morgan Stanley Research.

…But P&C Stocks Have Also Performed Well In “Soft” Markets

- Fewer investors appreciate how well P&C stocks have performed during “soft” P&C markets.
- Average return is a +12% CAGR during soft market periods which is +400bps better than the annual returns of the S&P.

We do not view P&C stocks as “red light/green light” investments around the P&C cycle. Statistically 75% of years the P&C cycle is “soft” so simplistically picking P&C upswings is likely to fail over time. Instead, we offer a researched opinion on the P&C cycle (i.e., where we are at/heading), which then serves as a filter for our investment recommendations.

P&C Stocks: Soft Market Average Returns



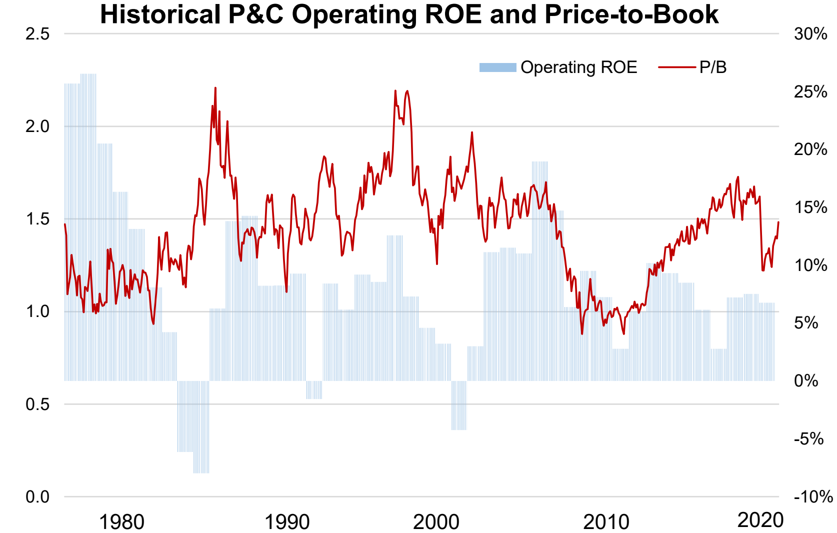
Source: Factset, Thomson Reuters, Morgan Stanley Research.

P&C Valuation: Price/Book vs. ROE Relationship a Key Stock Driver

P&C insurance is a balance sheet based business

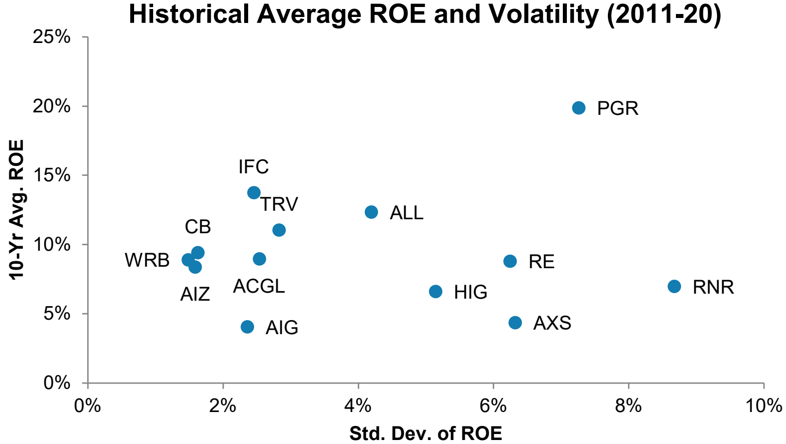
- Therefore Price to Book (P/B) multiple is the most commonly used valuation metric for P&C carriers.
- P&C P/B multiples steadily climbed coming out of the Financial Crisis, and took a sharp drop in 2020 from the pandemic
- Industry ROE is expected to improve in 2021…but catastrophes, reserves, and ongoing Covid impacts could constrain returns
- P/B valuation has a high correlation with ROE. Investors favor companies with higher ROE and lower volatility. Improving ROE is the key driver for turnaround stories.

Historical P&C Operating ROE and Price-to-Book



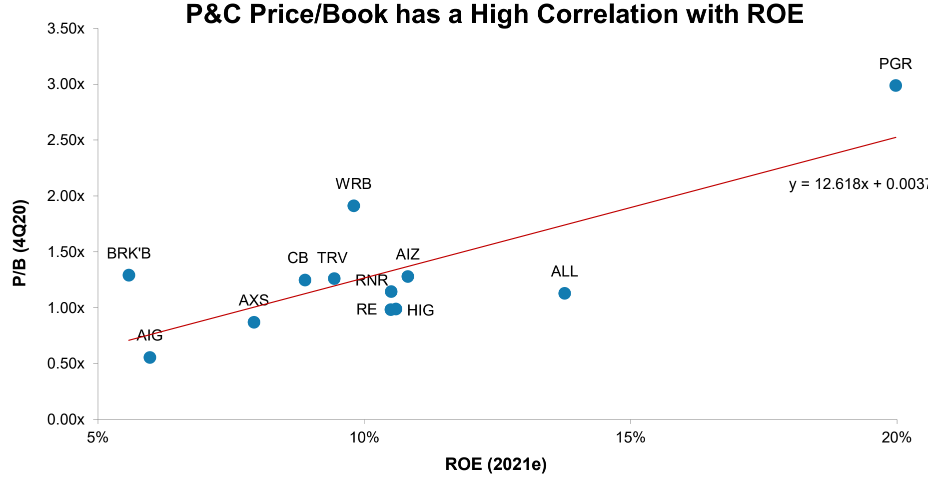
Source: Company Data, FactSet, SNL, Thomson Reuters, A.M. Best Aggregates & Averages, Morgan Stanley Research

Historical Average ROE and Volatility (2011-20)



Source: Company Data, Thomson Reuters, Morgan Stanley Research

P&C Price/Book has a High Correlation with ROE



Source: Company Data, Thomson Reuters, Morgan Stanley Research

Key Drivers of P&C Insurance Carrier ROE

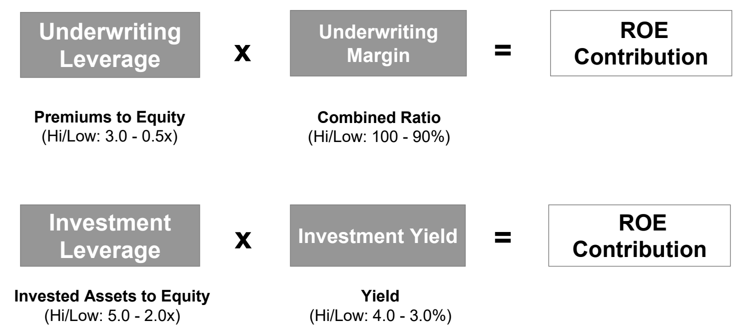
Balance Sheet & ROE Drivers

- Underwriting leverage: varies by line of business
- Underwriting margin: goal to make money (less than 100% combined ratio)
- Investment leverage: higher is better but predicated by lines of business written
- Investment yield: liquidity and safety top priority, duration 2-4 years, 80%+ = AA rated or higher

Income Statement Drivers

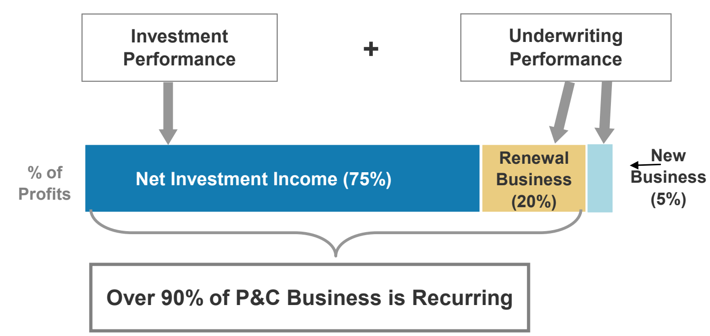
- 90%+ recurring revenues/profits
- Investment income is key = so yields matter
- Underwriting losses = profit volatility making EPS unpredictable

P&C Insurance Balance Sheet & ROE Drivers



Source: Company Data, Morgan Stanley Research

P&C Insurance Income Statement Drivers

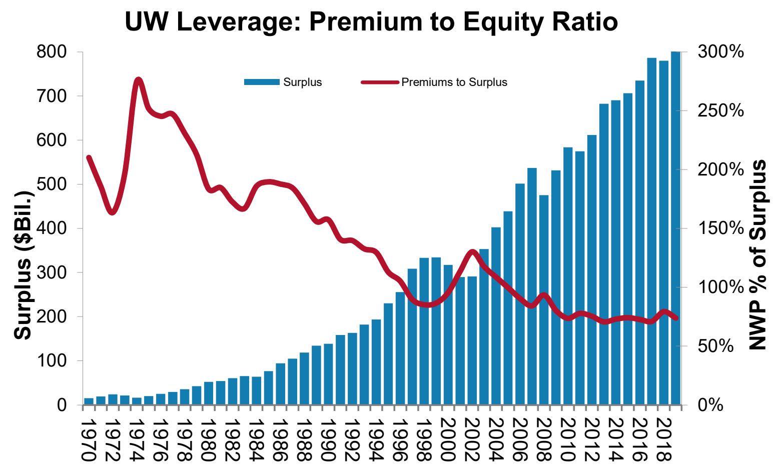


Source: Company Data, Morgan Stanley Research

Underwriting Ops Hinge on Leverage & Profitability

UW Leverage Has Declined as Capacity Builds

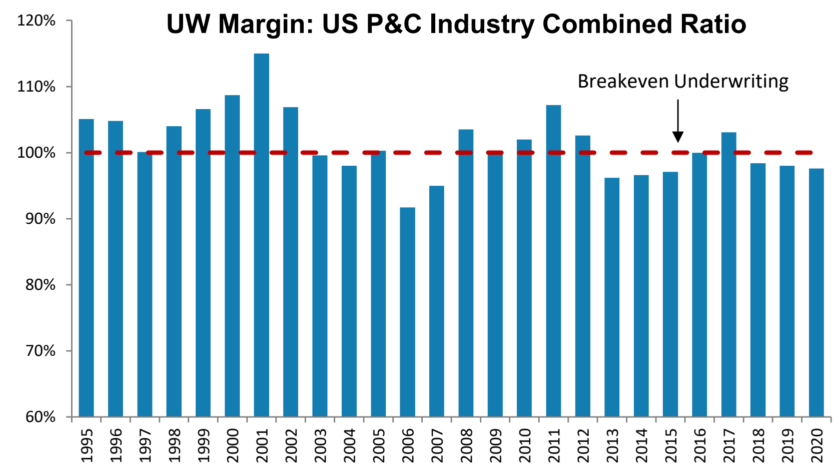
- UW leverage is measured by the Premium to Equity ratio
- The P&C industry capital base has compounded faster than premiums resulting in a structural decline in underwriting leverage
- Excess underwriting capacity remains a structural and growing problem in P&C insurance
- Lines with lower volatility (personal auto) have higher underwriting leverage, while higher volatility lines (property catastrophe) have lower underwriting leverage



Source: Company Data, A.M. Best Aggregates & Averages, Morgan Stanley Research

Underwriting Margin is Rarely Positive

- The P&C industry has made an underwriting profit in just 10 of the last 26 years
- A large percentage of the industry is playing to "not lose" in underwriting, while squeezing profitability out of investments to earn a return
- "Calendar year" underwriting profitability includes current policy year profitability and expenses (the "accident year" combined ratio), plus reserve development on prior years' policies

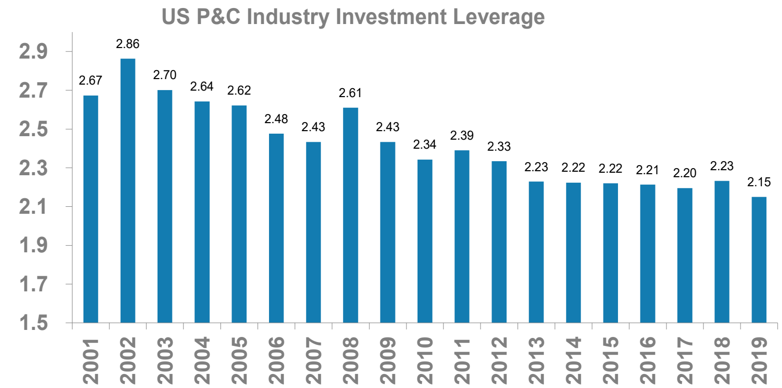


Source: Company Data, A.M. Best Aggregates & Averages, SNL, Morgan Stanley Research

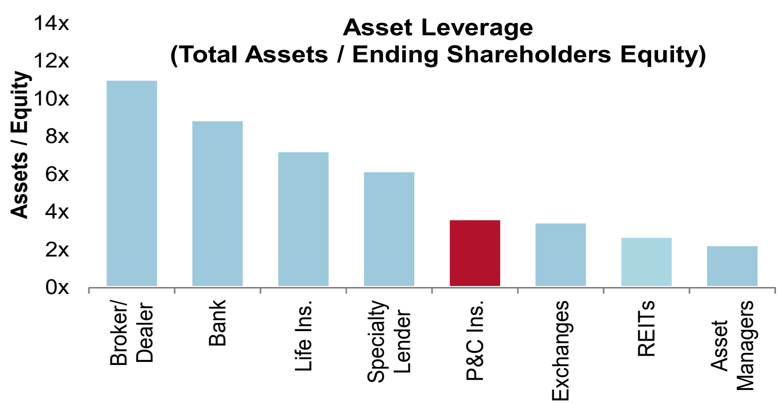
Investment Ops Rely on Leverage & Yield

P&C Investment Returns Under Pressure

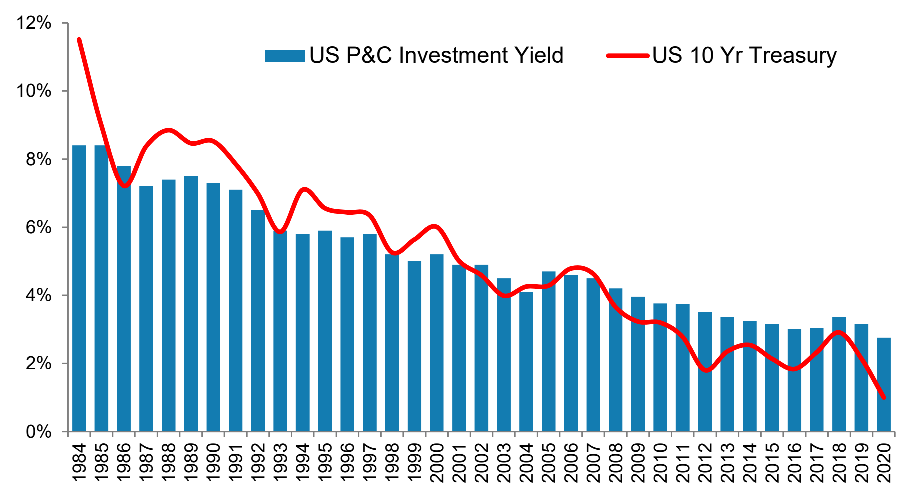
- Investment leverage is defined as assets divided by equity
- Invested assets are largely the "float" built up from premiums collected by the P&C carrier
- P&C industry investment leverage currently averages ~2.2x and ranges from 2x to 4x (depending on the length of claims payout periods) – which is lower than other balance sheet based financials
- **The long-term decline in investment yields has put significant pressure on investment income, which is the single biggest profit driver of any P&C carrier**



Source: A.M. Best Aggregates & Averages, Morgan Stanley Research



Source: SNL, Morgan Stanley Research



Source: SNL, Morgan Stanley Research

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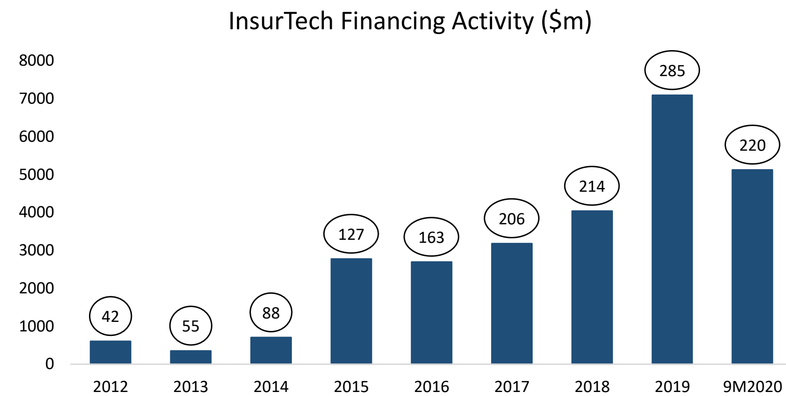
Emerging Trends: Insurance & Technology

Rising Investments in InsurTech

- According to GCA, venture capital funds invested ~$22b in more than 1,000 transactions in InsurTech startups in last 5 years.
- Notable P&C startups include Metromile, Lemonade, and Root.

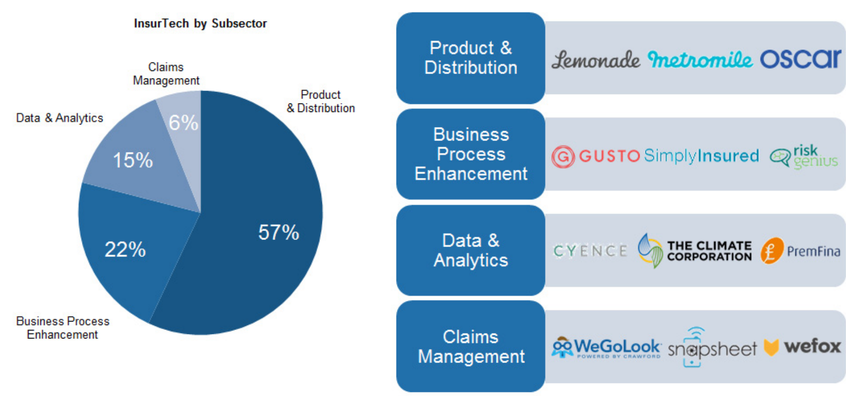


Source: GCA Insurance Technology Sector Summary Q3 2020

InsurTech – Disruptors or Enablers?

- According to Willis Re, InsurTech companies are focusing on four areas of insurance value chain: product & distribution (57% of the startups), business process (22%), data analytics (15%), and claims management (6%).
- According to research from McKinsey, majority (61%) of the InsurTech companies aim to enable and enhance traditional insurance value chain while 30% could disintermediate customers from incumbents and 9% are pure disruptors.

Insurance Value Chain – Disruptors or Enablers?



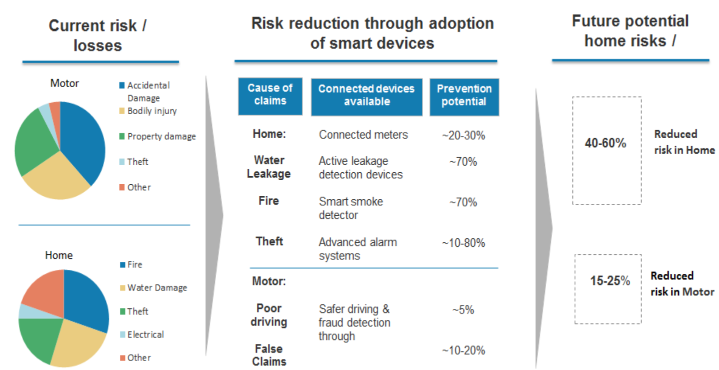
Source: WLTW Quarterly InsurTech Briefing Q4 2017, Morgan Stanley Research, Company Websites

Emerging Trends: Insurance & Technology

Risk Reduction through Adoption of Smart Devices

- Auto and Home Insurance could be more quickly disrupted compared to more complex products like casualty, commercial insurance.
- Technology could reduce 40-60% of risk in Home Insurance and 15-25% in Auto Insurance.

Technology Could Reduce Risk Pools Over Time

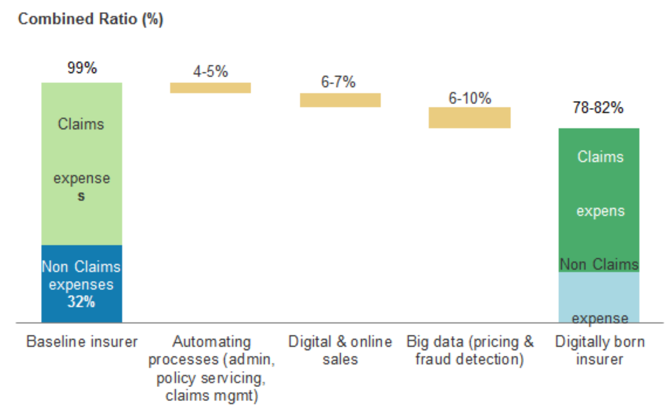


Source: BCG case experience, Smart systems suppliers, BCG Analysis, Morgan Stanley Research

Technology Could Significantly Improve Combined Ratio

- Process automation could reduce 4-5% of combined ratio.
- Digital and online sales could reduce 6-7% of combined ratio.
- Big data and analytics utilized for pricing and fraud detection could reduce 6-10% of combined ratio.

Combined Ratio Could be Reduced by as Much as 21%



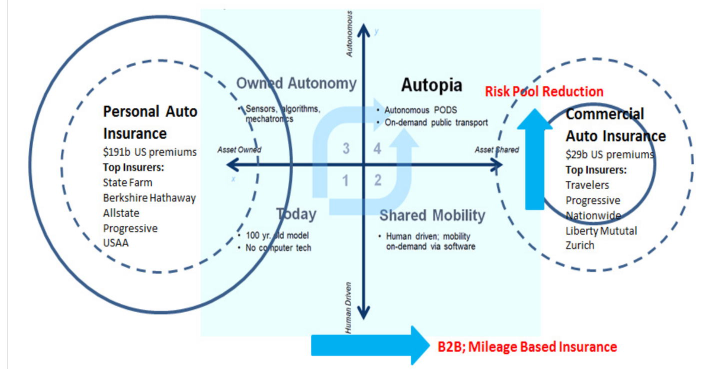
Source: BCG Analysis, Morgan Stanley Research

Emerging Trends: Shared Mobility: Disrupting Auto Insurance One Mile at a Time

The Future of Auto Insurance

- Shared miles could potentially account for 50% of auto insurance market by 2030.
- Auto insurance business model could shift to (1) B2B from B2C and (2) mileage-based insurance.
- Technology could hasten the decline of the risk pool.

Share Mobility: Shifting Auto Insurance Paradigm



Source: SNL, Morgan Stanley Research

Future Auto Insurance Market Scenarios

- While it is still early days, we see the most potential impact on personal auto insurers as (1) the overall risk pool shrinks, and (2) the remaining pie shifts from B2C (personal insurance) to B2B (commercial insurance).

Future Auto Insurance Market Scenarios

	Today (2015)	Future Scenarios (2030)		
		Bear	Base	Bull
US Miles Traveled (b)	3,000	4,000	5,000	6,000
CAGR		*1.9%*	*3.5%*	*4.7%*
Insurance Premiums per Mile ($)	$0.07	$0.02	$0.04	$0.06
% Change		*-75%*	*-50%*	*-25%*
US Auto Insurance TAM ($b)	**220**	**73**	**183**	**330**
% Change		*-67%*	*-17%*	*50%*
Personal Auto (B2C, $b)	191	18	92	248
% Total	*87%*	*25%*	*50%*	*75%*
Commercial Auto (B2B, $b)	29	55	92	83
% Total	*13%*	*75%*	*50%*	*25%*

Source: Morgan Stanley Research

Digital Disruption in Small Business Insurance

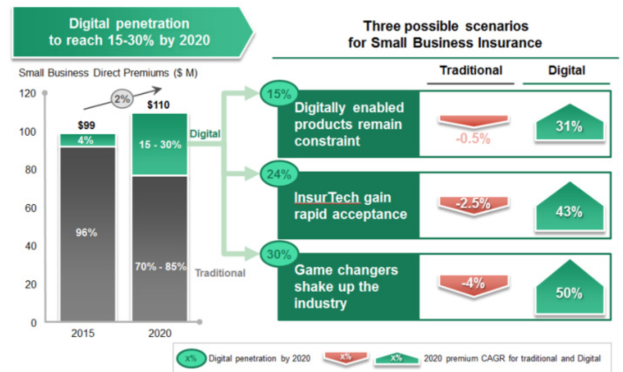
The ~$100b Small Business Insurance (SBI) Market is Ripe for Digital Disruption

- Demographics of small business owners favor digital insurance solutions.
- There are unmet insurance needs of small business owners.

InsurTech Startups and Traditional Carriers are Positioning for the Change

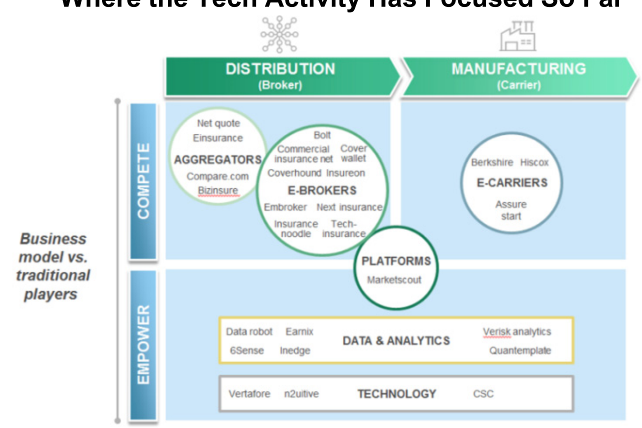
- A growing number of startups are focusing in SBI, leveraging experiences from personal auto and other financial services, including FinTech companies.
- Large incumbents are ramping up their digital efforts to capitalize on this large (~$100b in annual premiums), profitable (~90% combined ratios), and fragmented market.

Digital Insurance Gaining Shares in SBI



Source: The Boston Consulting Group, Morgan Stanley Research

Where the Tech Activity Has Focused So Far



Source: The Boston Consulting Group, Morgan Stanley Research

Emerging Trends: Cyber Insurance an Emerging Growth Opportunity

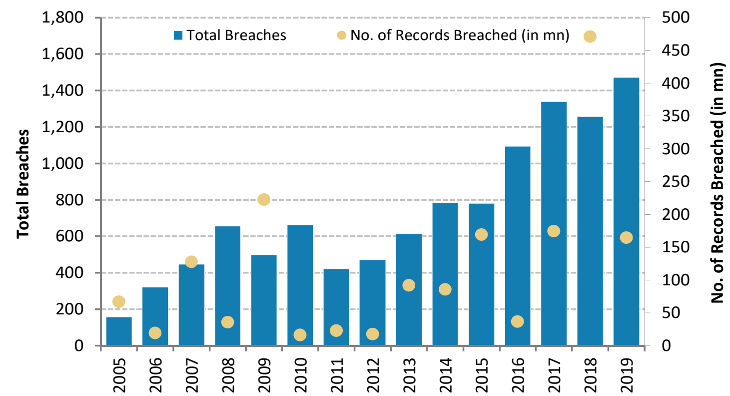
Cyber Risk A Growing Concern

- According to Identity Theft Resource Center, ~1,470 data breaches impacted ~165m records during 2019 in the US.
- McAfee estimates ~$600b annual cost of cybercrime.
- Cyber insurance is an integral part of corporate risk management.

Cyber Insurance An Emerging Growth

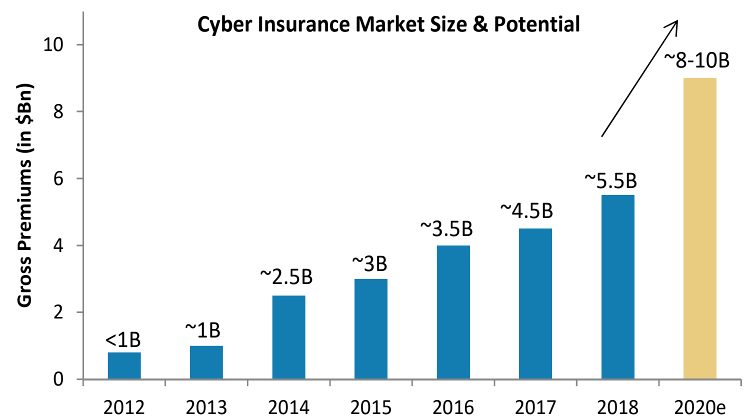
- According to Ponemon survey, only ~19% companies have cyber insurance; only ~12% of potential loss to information assets is insured vs. ~51% coverage for physical assets.
- Currently at $4-5b of annual global premiums, we estimate cyber insurance market to grow 2x to $8-10b by 2020.
- Cyber insurance need is evolving. Changing technology and limited data/modeling challenge cyber insurance underwriting.

Cyber Risk on the Rise



Source: Identity Theft Resource Center, Morgan Stanley Research

Cyber Insurance is an Emerging Growth Opportunity



Source: Travelers 2015 Investor Day Presentation, PWC, Morgan Stanley Research estimates

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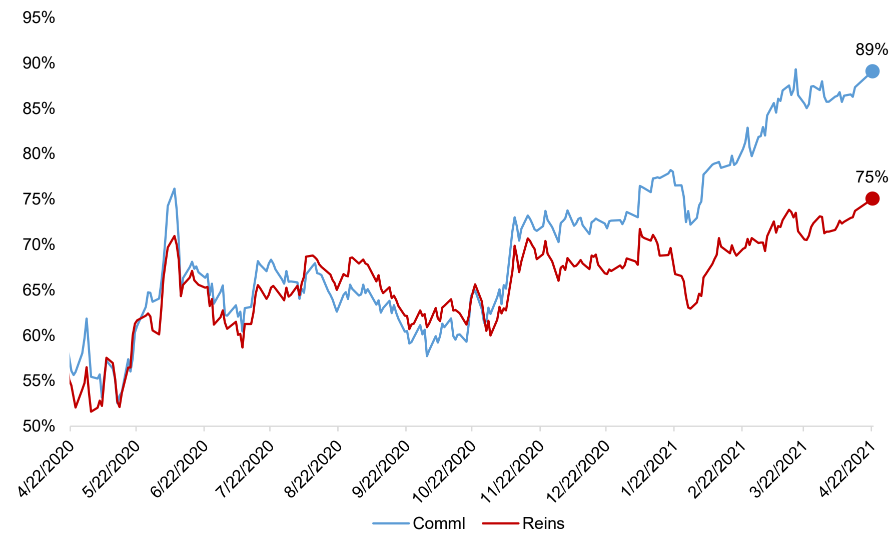
P&C Insurance 2021 Outlook – Has Pricing Peaked?

Industry View: In-Line

- Key themes for 2021 include: commercial lines pricing duration, degree of margin expansion, Covid loss development, reinsurance pricing, and the return of personal auto frequency.
- After years of compounding rate increases across commercial lines, early 1Q21 reporting is showing rate deceleration. Margin expansion is expected to continue into 2022, but in our opinion, is widely priced into commercial lines stocks (~89% recovery to pre-pandemic peak).
- **We prefer AIZ and RE.** Everest Re's clean balance sheet, recent cat mitigation efforts, and portfolio mix rebalancing allow it to benefit from continued price gains with less downside risk relative to peers. AIZ should see strong mobile protection growth, benefitting from Sprint/T-Mobile and 5G trade ins, with continued shift toward capital-light businesses, highlighted by recent sale of Preneed.

P/B Recovery Relative to 2020 Peak: Comml v. Reins



Source: Thomson Reuters, Company Filings, Morgan Stanley Research

Key Themes in 2020:

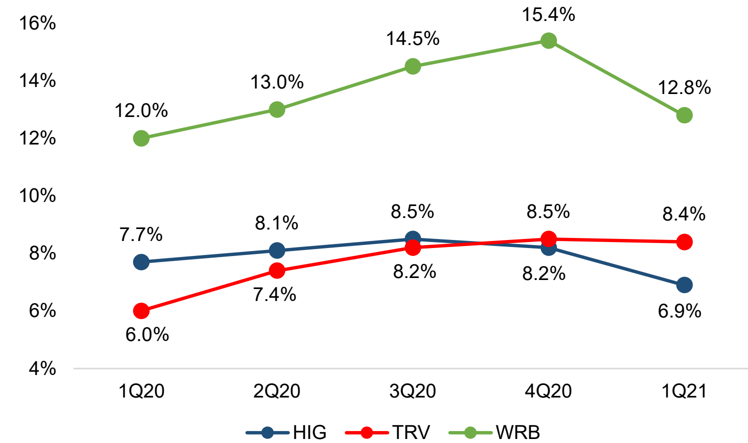
- **Commercial lines outlook:** positives playing out, but caution needed. While decelerating rate will still allow for margin expansion in the quarters ahead, we see declining pricing power and a need to monitor prior year reserves. Commercial lines carrier valuations have made a strong recovery.
- **Reinsurance outlook:** a bit mixed. 1/1 renewals were largely a function of location and loss experience, but saw encouraging positive rate and a more conservative industry view of risk. We are cautious on industry casualty reserves, but see support for continued pricing gains.
- **Personal auto outlook:** margin compression on the horizon. After windfall profits in 2020 from pandemic-induced low frequency, we see the return of losses against a competitive pricing environment leading to margin pressure in the quarters ahead.

P&C Insurance 2021 Outlook – Commercial Lines

Commercial Lines

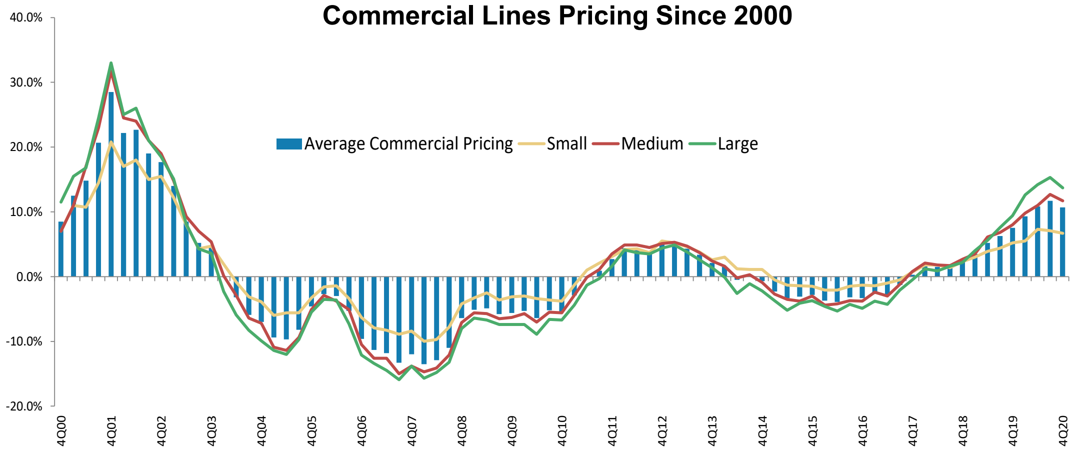
- Commercial carriers have benefited from a favorable pricing environment for the last couple of years now, but we are beginning to see pricing decline.
- Margins should continue to expand throughout 2021 and even into 2022, but benign loss trends remain the wildcard.
- We are cautious on industry casualty reserves, which have faced rising loss costs in the wake of social inflation – and will need to be carefully watched as courts re-open.
- Expectations for sustained margin expansion appears to be largely priced into commercial lines stocks; we see diminishing opportunity in the space.

Reported 1Q21 Pricing Deceleration



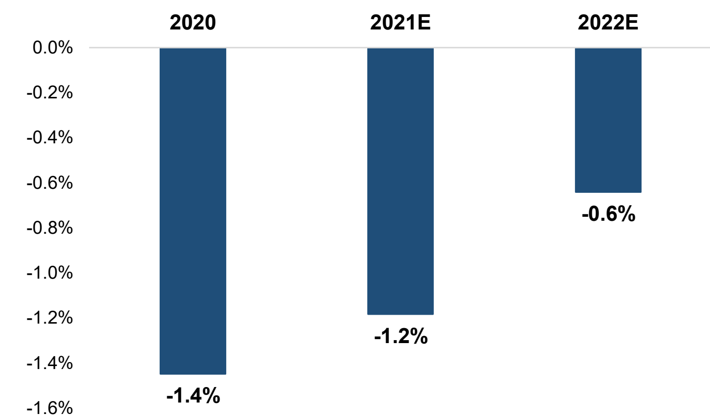
Source: Company Filings, Morgan Stanley Research

Commercial Lines Pricing Since 2000



Source: CIAB, Morgan Stanley Research

Average Core LR Margin Expansion



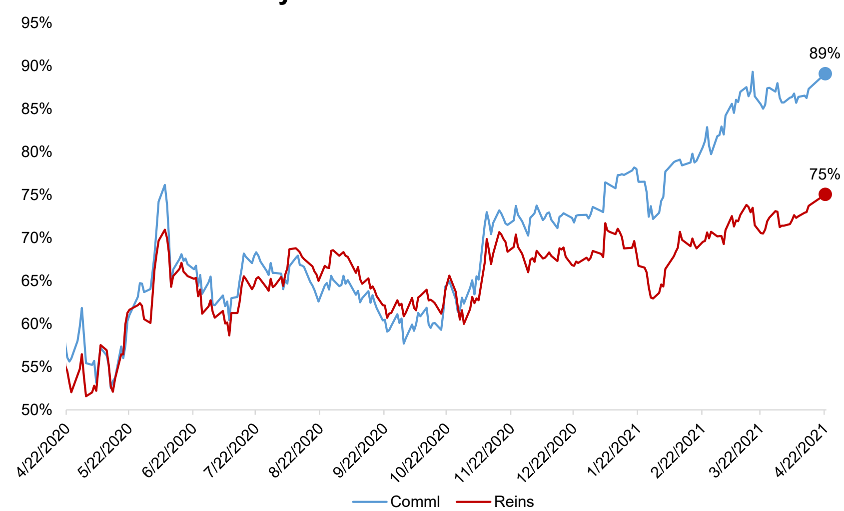
Source: Company Filings, Morgan Stanley Research

P&C Insurance 2021 Outlook – Reinsurers

Reinsurers

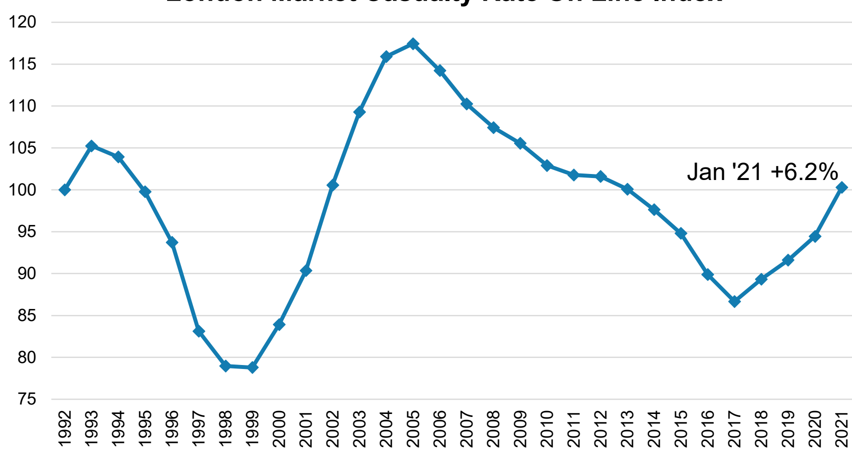
- We view multiples for reinsurers as more attractive, having only recovered ~75% of P/B values relative to pre-pandemic peaks
- Pricing has been more muted versus primary commercial lines, but **elevated cats, concerns on reserves, social inflation, Covid uncertainty, and low investment yields** should all serve to support continued pricing in the segment
- We like **RE,** as the company stands to benefit from the upward lift in pricing, but has limited risks associated with its reserves, catastrophes, and covid…as well as a diversified book of business growing in primary lines.

P/B Recovery Relative to 2020 Peak: Comml v. Reins



Source: Thomson Reuters, Company Filings, Morgan Stanley Research

London Market Casualty Rate On Line Index



Source: Hyperion-X, Morgan Stanley Research

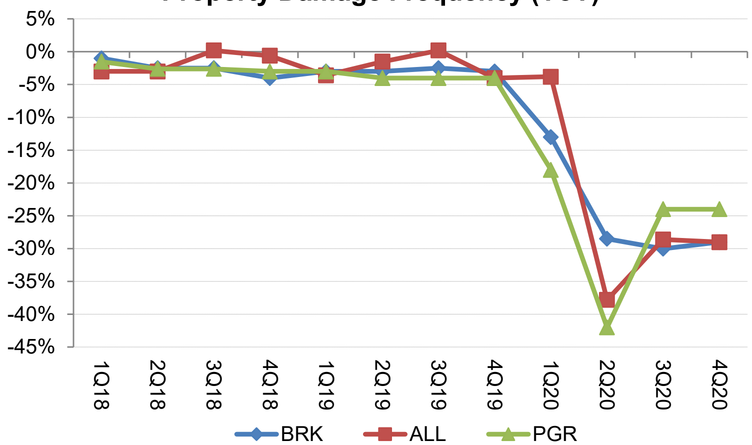
We would note although strong pricing gains have been made in recent years (more so in property), reinsurance pricing was extremely soft over the last decade, and is just now nearing levels from 2000 in Casualty. We believe plenty of upside remains.

P&C Insurance 2021 Outlook – Personal Auto

Personal Lines

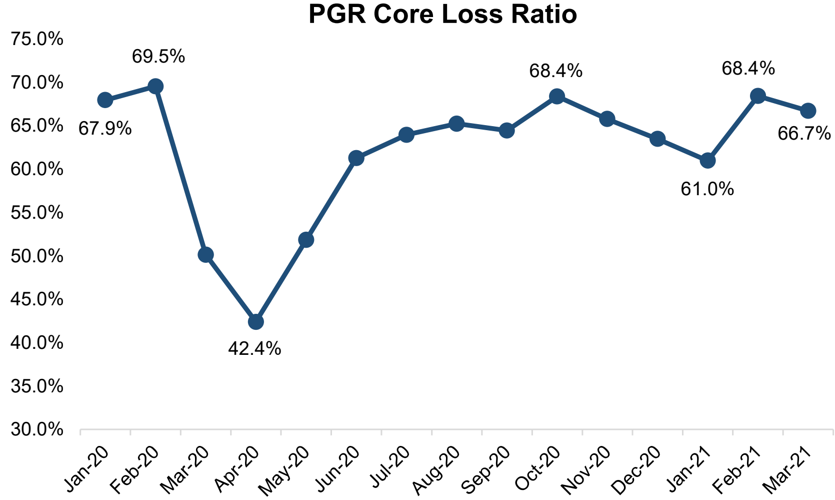
- The fundamentals for personal auto look less favorable than those of commercial lines and reinsurance.
- Pricing was facing pressure prior to the pandemic, and lower frequency from pandemic-induced lower driving has resulted in pricing declines for the last year.
- Although frequency was flattish from 3Q20 to 4Q20, we expect it to pick up in 1H21 as miles driven return to more normalized levels.
- Against a very competitive personal auto environment (and soft pricing) we expect the return of losses to pressure margins in 2021 and into 2022.

Property Damage Frequency (YoY)



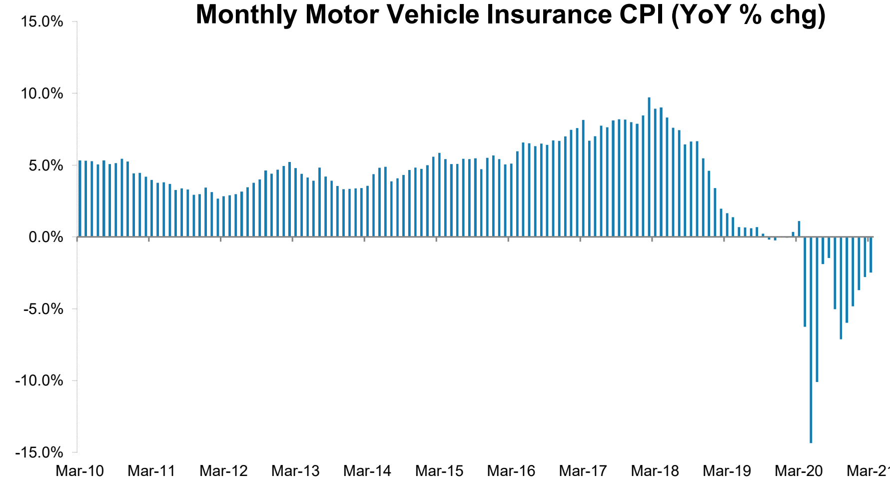
Source: Company Filings, Morgan Stanley Research

PGR Core Loss Ratio



Source: Company Filings, Morgan Stanley Research

Monthly Motor Vehicle Insurance CPI (YoY % chg)



Source: BLS, Morgan Stanley Research

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Everest Re Group, Ltd. Risk Reward (RE.N)

Source: Company data, Morgan Stanley Research.

Price Target 1.25x 2021e Base Case BVPS	**US$312**
Bull 1.45x 2021e Bull Case BVPS	**US$372**
Base 1.25x 2021e Base Case BVPS	**US$312**
Bear 0.80x 2021e Bear Case BVPS	**US$148**

Why Overweight

- **Strong global reinsurance platform.** BVPS CAGR of 10% since mid-1990's and avg ROE of 10% across all parts of P&C cycle. Reduced tail cat exposure to improve consistency of returns.
- **Diversification with insurance growth.** Remains focused on growing insurance segment, which has better return on capital. Strong growth avenue with pricing environment, expect to contribute meaningfully to revenues and EPS.
- **Improved reserve adequacy.** With recent reinsurance reserve charge, we see limited risk of material strengthening in the near term.

Risks to Price Target

- **Risks to Upside.** Better P&C pricing, stronger underwriting margin expansion.
- **Risks to Downside.** Catastrophe losses, investment losses, inadequate reinsurance pricing, reserve charges.

Assurant, Inc. Risk Reward (AIZ.N)

Source: Company data, Morgan Stanley Research.

Price Target 15.0x 2022e Base Case EPS	**US$172**
Bull 18.0x 2022e Bull Case EPS	**US$215**
Base 15.0x 2022e Base Case EPS	**US$172**
Bear 10.0x 2022e Bear Case EPS	**US$97**

Why Overweight

- **Leading specialty franchise with high-teens EPS growth potential.** We see accelerating growth in product protection and stabilizing lender-placed insurance to drive ~19% EPS CAGR in 2021-23e.
- **Sale of Global Preneed allows AIZ to focus on high-growth, capital light business model.** Sale of Preneed lowers interest rate sensitivity. 25% of net proceeds to be deployed in strategic investments in company, particularly Connected World.
- **Strong cash flow generation and shareholder returns.** ~100% of segment earnings distributed to the parent company. ~63% of shares repurchased since 2004. 75% of net Preneed proceeds to be used for buyback; ~8% accretion to 2022-23e EPS.

Risks to Price Target

- **Risks to Upside.** Faster acceleration in Lifestyle earnings growth; more aggressive returns to shareholders; accretive M&A; benign catastrophe activity
- **Risks to Downside.** Slower revenue growth and margin expansion; loss of large distribution partners; further headwind in lender-placed insurance; large catastrophe losses.

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May 2021

Property & Casualty Insurance: Industry Comps

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	Rating	Price ($) 4/26/2021	YTD 2021	Mkt Cap ($M)	Div Yield	EPS 2020	EPS 2021E	EPS 2022E	P/E 2020	P/E 2021E	P/E 2022E	BVPS 2020	BVPS 2021E	BVPS 2022E	P/BVPS 2020	P/BVPS 2021E	P/BVPS 2022E	P/BVPS ex. AOCI 2020	P/BVPS ex. AOCI 2021E	P/BVPS ex. AOCI 2022E	P/TBVPS 2020	P/TBVPS 2021E	P/TBVPS 2022E	ROE 2020	ROE 2021E	ROE 2022E
AIG	O	47.53	25.5%	40,823	2.7%	$2.52	$4.38	$5.52	18.9	10.8	8.6	76.46	74.84	79.91	0.62	0.64	0.59	0.77	0.73	0.68	0.62	0.64	0.59	3.3%	5.8%	7.2%
AIZ	O	155.17	13.9%	9,428	1.7%	8.61	9.35	11.58	18.0	16.6	13.4	96.30	94.50	99.47	1.61	1.64	1.56	1.83	1.80	1.72	3.08	3.02	3.01	9.6%	10.2%	11.9%
ALL	E	125.30	14.0%	37,558	1.7%	14.74	12.49	12.02	8.5	10.0	10.4	91.50	84.60	93.08	1.37	1.48	1.35	1.55	1.57	1.42	1.50	1.64	1.48	17.9%	13.9%	13.3%
AXS	E	54.30	7.8%	4,635	3.1%	(2.07)	3.47	4.91	(26.3)	15.6	11.1	55.09	53.12	56.13	0.99	1.02	0.97	1.08	1.04	0.98	1.00	1.05	0.99	-3.7%	6.3%	8.8%
BRKb	E	270.86	16.8%	624,668		4.57	10.62	11.92	59.3	25.5	22.7	191.35	207.57	224.96	1.42	1.30	1.20	1.40	1.29	1.19	1.70	1.54	1.41	2.5%	5.4%	5.6%
LMND	E	97.56	-20.4%	5,756	0.0%	(3.65)	(3.20)	(2.95)	(26.7)	(30.5)	(33.1)	9.53	16.90	14.37	10.24	5.77	6.79	10.24	5.77	6.79	10.24	5.77	6.79	-29.2%	-24.5%	-24.5%
PGR	E	99.86	1.0%	58,960	18.4%	7.51	6.02	5.93	13.3	16.6	16.8	29.12	32.58	35.72	3.43	3.07	2.80	3.69	3.27	2.97	3.50	3.02	2.76	28.5%	19.3%	17.2%
RE	O	266.00	13.6%	13,309	0.0%	7.46	23.67	31.91	35.6	11.2	8.3	243.25	247.30	271.12	1.09	1.08	0.98	1.09	1.08	0.98	1.09	1.08	0.98	3.1%	9.6%	11.9%
ROOT	E	10.98	-30.1%	2,683	0.0%	(6.66)	(2.03)	(1.99)	(1.6)	(5.4)	(5.5)	9.41	2.09	0.14	1.17	5.24	78.06	1.17	5.24	78.06	1.17	5.24	78.06	-59.6%	-65.6%	-178.5%
RNR	E	171.08	3.2%	8,567	0.8%	0.09	11.94	17.90	N/A	14.3	9.6	138.46	149.04	165.58	1.24	1.15	1.03	1.23	1.15	1.03	1.28	1.19	1.06	0.2%	8.4%	11.5%
TRV	U	155.73	10.9%	39,691	2.2%	10.45	11.07	12.16	14.9	14.1	12.8	115.68	117.22	124.70	1.35	1.33	1.25	1.47	1.39	1.31	1.88	1.56	1.46	9.7%	9.6%	10.2%
WRB	E	80.44	21.1%	14,430	0.6%	2.32	3.93	4.67	34.7	20.5	17.2	35.49	37.92	42.47	2.27	2.12	1.89	2.24	2.02	1.81	2.33	2.18	1.94	7.1%	11.1%	11.8%
Median			**13.6%**		**1.7%**				**14.9**	**14.2**	**10.7**				**1.36**	**1.32**	**1.23**	**1.44**	**1.34**	**1.25**	**1.70**	**1.56**	**1.46**	**3.3%**	**9.6%**	**11.5%**

	Rating	Price ($) 4/26/2021	YTD 2021	Mkt Cap ($M)	Div Yield	Adjusted EPS 2020	Adjusted EPS 2021E	Adjusted EPS 2022E	Price/Adjusted EPS 2020	Price/Adjusted EPS 2021E	Price/Adjusted EPS 2022E	EV/EBITDA Ratio 2020	EV/EBITDA Ratio 2021E	EV/EBITDA Ratio 2022E	P/FCF Ratio 2020	P/FCF Ratio 2021E	P/FCF Ratio 2022E	Organic Growth 2020	Organic Growth 2021E	Organic Growth 2022E	Adjusted EBIT Margin 2020	Adjusted EBIT Margin 2021E	Adjusted EBIT Margin 2022E	Adjusted EBITDA Margin 2020	Adjusted EBITDA Margin 2021E	Adjusted EBITDA Margin 2022E
AON	E	229.52	8.6%	52,174	0.8%	9.81	10.96	12.65	23.4	20.9	18.1	17.7	16.4	14.8	20.3	25.5	23.3	1.5%	4.0%	5.4%	28.5%	29.1%	30.6%	30.0%	30.6%	32.1%
AJG	E	135.83	9.8%	26,924	1.3%	4.72	5.00	5.10	28.8	27.2	26.6	16.2	15.0	13.9	16.0	23.0	20.0	2.0%	4.7%	5.1%	20.8%	20.6%	20.6%	29.9%	28.8%	28.4%
BRO	E	49.80	5.0%	14,310	0.7%	1.68	1.82	1.89	29.7	27.4	26.3	18.9	17.1	16.2	21.1	21.7	20.4	3.8%	4.4%	4.1%	26.1%	25.8%	25.7%	31.1%	31.2%	30.9%
MMC	E	127.20	8.7%	65,046	1.6%	4.97	5.37	5.91	25.6	23.7	21.5	16.8	16.2	15.1	21.4	21.4	19.7	0.7%	3.8%	4.4%	21.2%	21.6%	22.2%	25.5%	31.2%	30.9%
WLTW	E	231.30	9.8%	30,036	1.3%	11.72	12.27	13.50	19.7	18.8	17.1	13.2	13.5	12.7	19.4	23.2	20.7	1.4%	3.9%	5.4%	20.8%	20.6%	21.0%	27.1%	25.1%	25.2%
Median			**8.7%**		**1.3%**				**25.6**	**23.7**	**21.5**	**16.8**	**16.2**	**14.8**	**20.3**	**23.0**	**20.4**	**1.5%**	**4.0%**	**5.1%**	**21.2%**	**21.6%**	**22.2%**	**29.9%**	**30.6%**	**30.9%**

Source: Thomson Reuters, Morgan Stanley Research Estimates

In Case You Missed it

1Q21 Preview: High Cats, Core CL Margins Still Strong, but Pricing Duration in Question
April 16, 2021

Higher Pricing to Remain; Upgrade RE to OW, Stay OW AIG &AIZ
March 24, 2021

AIZ: Sale of Global Preneed and 2021 Outlook Update
March 9, 2021

Highlights from Annual AIFA Conference 2021
March 2, 2020

AIG: Valuation Deep Dive: Raising PT, Staying OW
February 25, 2021

Commercial Price Increases Continue
February 24, 2021

Personal Auto Pricing, OEMs – Thoughts on Competition
February 10, 2021

Update on Covid Litigation; Not Concerned on Recent Ruling
January 25, 2021

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State of the CRE & REIT Market

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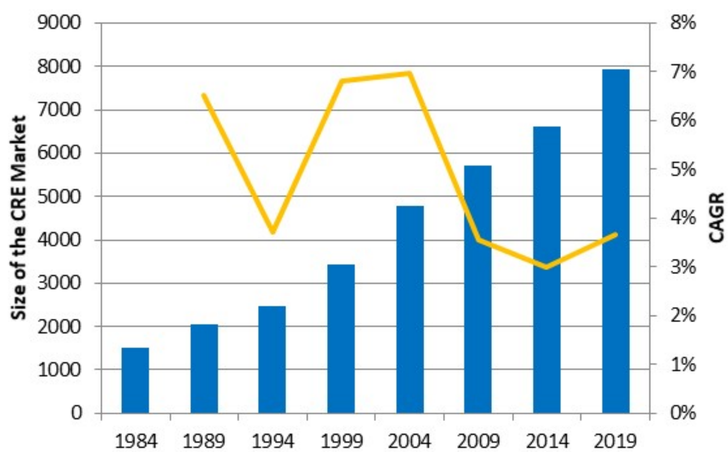
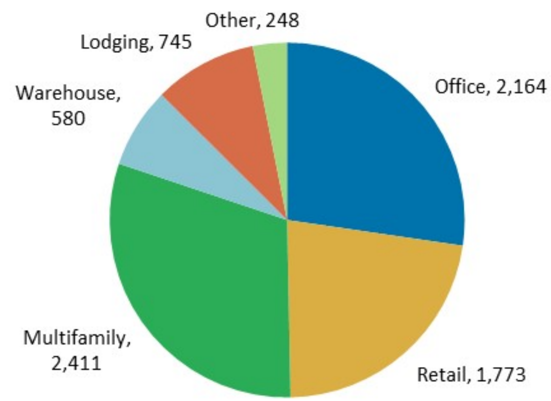
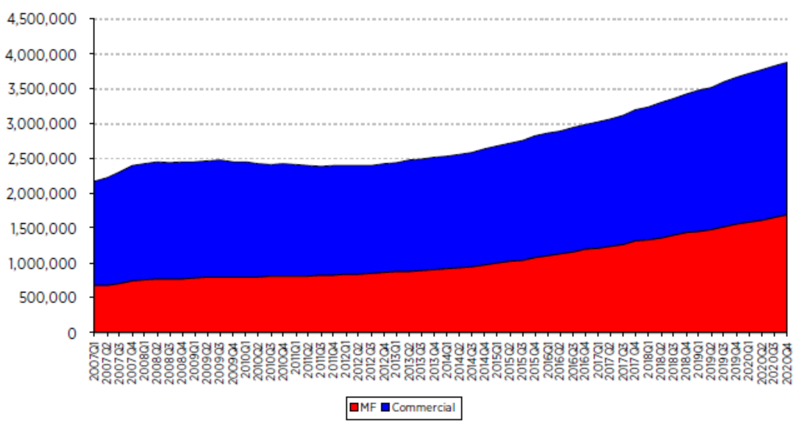
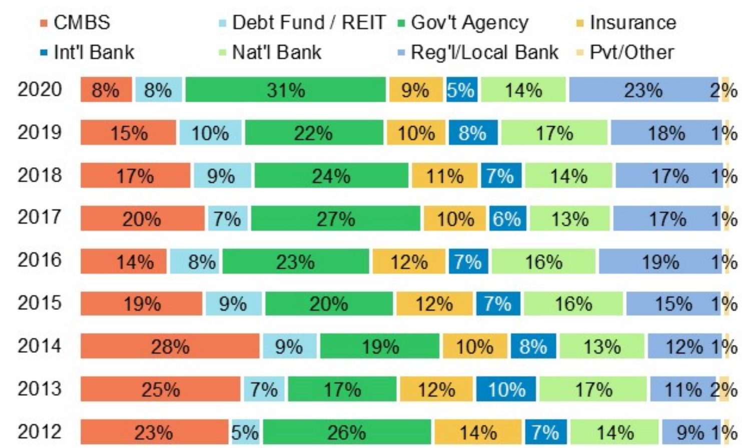
Sizing Up the $7.6 Trillion CRE Market









Source: MBA, Haver Analytics, RCA, Costar, NCREIF, Bloomberg, NAREIT, Morgan Stanley Research

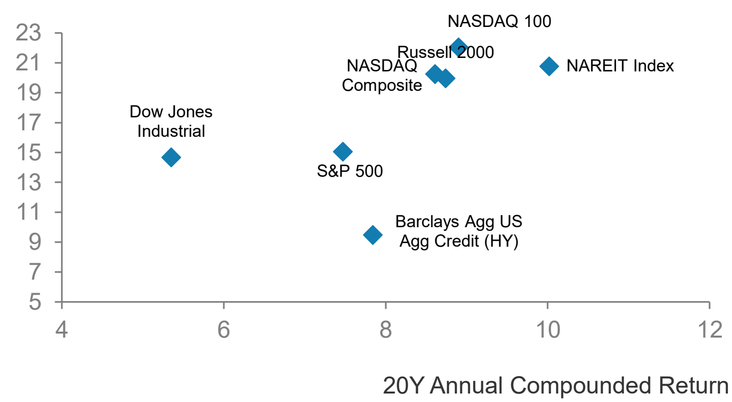
Industry Overview - What Is a REIT?

A tax election that allows a corporation or trust to use the pooled capital (of many investors) to purchase and manage income property (equity REIT) and avoid corporate taxes as long as the REIT pays out 90% of net taxable income (including gains on sale) in form of dividends.

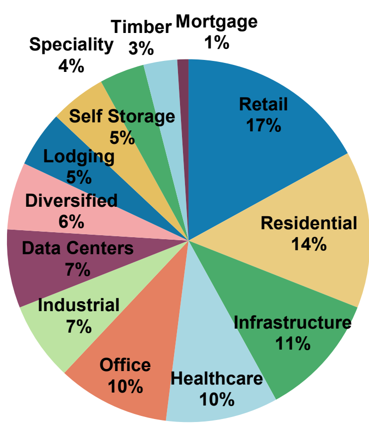
They must own at least 75% of their total assets in real estate assets, cash & government securities.

Derive at least 75% of gross income from rents from real property, interest on mortgages on real property, gains from sale of real property & REIT dividends

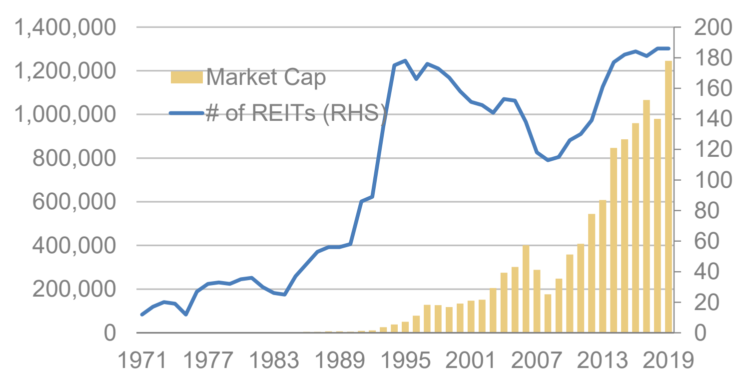
20Y Annualized Volatility of Returns



REIT Subsectors



NAREIT Real Estate Index Historical Market Cap



Source: NAREIT, Factset, Morgan Stanley Research

Key Industry Milestones

- **REITs born out of common law business trusts,** or Massachusetts trusts, which existed in late 1800s (many formed to own investment properties)
- **REITs created when Congress passes Real Estate Investment Trust Act of 1960**
  - Modeled after regulated investment companies (RICs) & receive pass-through tax treatment due to passive nature of business
- **Dawn of Modern REIT Era**
  - Kimco IPO in November ‘91
- **REIT Modernization Act of 2001**
  - Allows REITs to own 100% of a “Taxable REIT Subsidiary” (TRS)
  - Enabling REITs to provide formerly disallowed services to REIT tenants without disqualifying rents received
- **Classified as Own GIC Sector**
  - At the close of business of August 31, 2016, equity REITs were officially be reclassified from the Financials Sector. Elevated to an 11th headline Real Estate Sector of the GICS

Three Ways of Valuing REITs

1 Implied Cap Rate

Methodology: 12m fwd NOI minus other income and NOI from non-core real estate property types. Divide this number by the adjusted enterprise value of the company.

Why we use it: We believe it may be more informative to examine the real estate values that the stock market is currently implying in REIT valuations.

Pros: We find this metric extremely useful in making relative valuation calls. Like NAV, it adjusts for debt and other income. It is also readily comparable to private market cap rates.

Cons: The main usefulness of implied cap rates is looking for relative value between two or more comparable companies, or one company over time. Unlike NAV, it says nothing about absolute value.

2 Forward FFO Multiples

Methodology: Current stock price divided by NTM or next year's FFO estimate

Why we use it: Multiples give us an indication of where we stand today relative to the past, both in terms of the company and of the industry as a whole. They also provide a basis of comparison for two or more companies.

Pros: It provides a quick and typically effective method of comparing various companies. It also gives us an indication of where we are in a particular cycle.

Cons: Forward multiples are based on projected FFO versus stock price. They are a "down and dirty" method of valuation and do not adjust for growth rates, leverage, or "quality of earnings." Given the differences between FFO and AFFO, we think AFFO is superior, but consensus AFFO estimates are less available.

3 Net Asset Value

Methodology: Annualized most recently quarter or forward 4Q NOI (adjusted for partial period acquisitions, dispositions, and developments) divided by capitalization rate. Add the value of work in progress to arrive at "real estate value." To reach NAV per share, deduct debt and preferred from adjusted real estate value, and divide by the shares outstanding

Why we use it: Analogous to break-up or liquidation value, many investors view NAV as the actual worth of a company.

Pros: Premium to NAV at which a company trades, helps identify exactly how much investors are paying for management expertise and external growth prospects, access to capital, etc.

Cons: NAV doesn't take into consideration quality of management, operating efficiencies of a portfolio, future acquisition and development pipelines, or the anticipated growth in NOI

Source: SNL, Datastream, Thomson Reuters, Morgan Stanley Research

REIT Quant Model Identifies 6 Macro Factors the Drive Total Returns

Our quant team previously created a model for the Real Estate sector using a technique called stepwise regression. Stepwise regressions tell us which variables to include in a model, and the coefficients are those that are statistically significant for that sector/sub-industry.

The model (which forecasts the "macro" component of REIT returns) also helps to isolate real estate (residual) drivers of returns.

For REITs, the most important macro variables are the equity market, the level and slope of the yield curve, and crude oil. The sector has a particularly strong, negative sensitivity to the slope of the yield curve; moderate sensitivity to the level of the yield curve; and a slight, negative sensitivity to the crude oil price.

REITs Macro Model Scenarios

Choose a value for each of the 6 inputs below to calculate the expected return for each of the indexes

2-Year Treasury Yield	10-Year Treasury Yield	Baa-10 year Credit Spread
Flat	Flat	Flat
S&P 500	**Crude Oil (WTI)**	**US Dollar Index (DXY)**
Flat	Flat	Flat

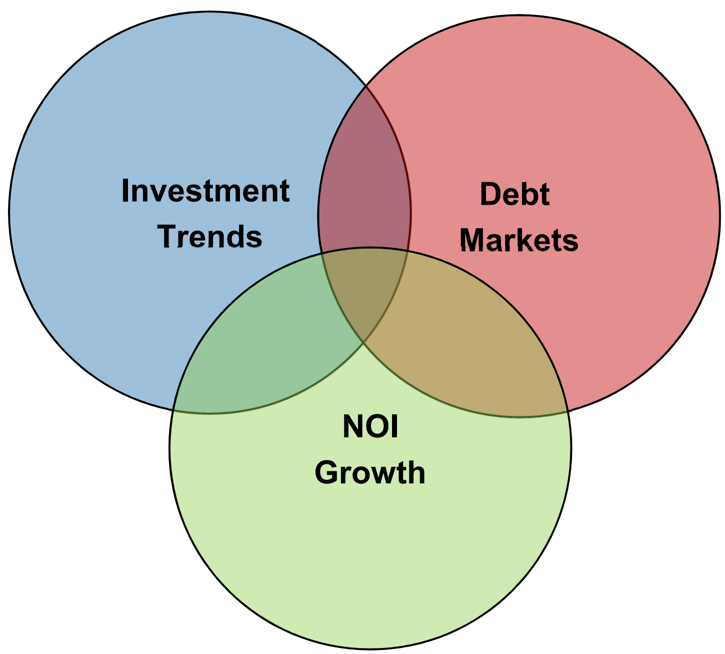
Yield Curve Scenario Selected: Flat Steady

Real Estate Index	Contributions to Expected Return						
	Yield Curve Rise / Fall	Yield Curve Steepen / Flatten	Credit Spreads Widen / Narrow	Equity Market Rise / Fall	Crude Oil Rise / Fall	Dollar Stronger / Weaker	Expected Return Based on Model
Real Estate Sector	NA	NA	NA	NA	NA	NA	0.00%
Office REITS Subindustry	NA	NA	NA	NA	NA	NA	0.00%
Residential REITS Subindustry	NA	NA	NA	NA	NA	NA	0.00%
Retail REITS Subindustry	NA	NA	NA	NA	NA	NA	0.00%
Specialized REITS Subindustry	NA	NA	NA	NA	NA	NA	0.00%

How Do We Analyze REITs?

A four pillar approach:

1. A top-down view of CRE
2. REIT valuations relative to the broader CRE market and other investment alternatives
3. Analysis of sub-sectors
4. Stock picks

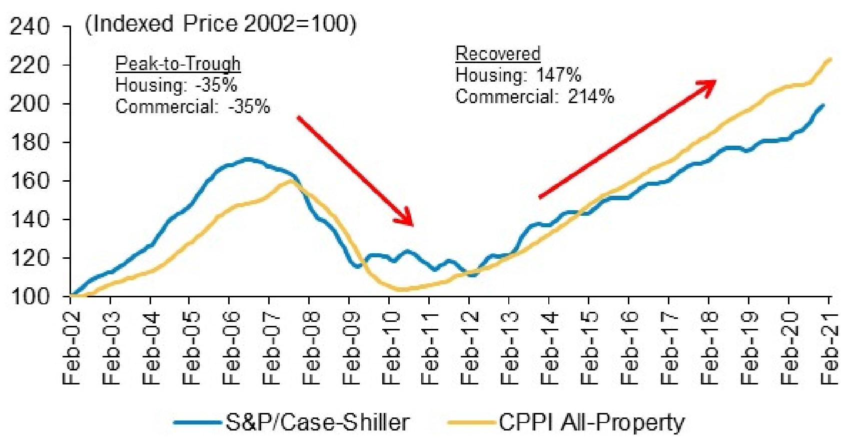


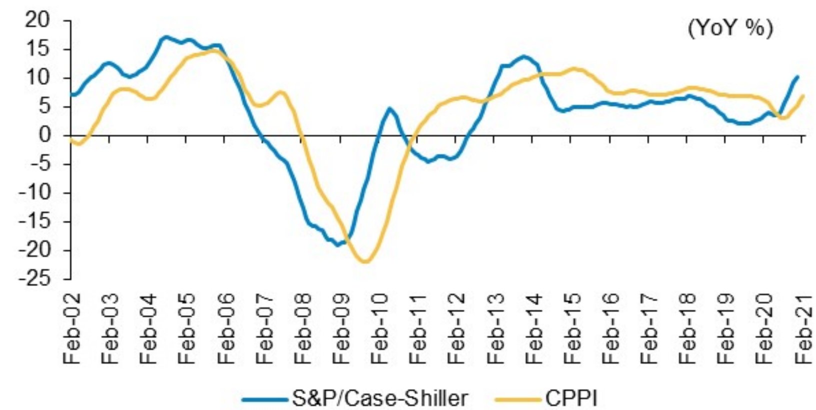
Source: NAREIT, Yield Book, SNL Financial, Morgan Stanley Research

The Big CRE Picture

CRE Prices Have Continued to Rise by 7% YoY

~40% above their '07 peaks (core commercial +15% vs. apartments 96%)

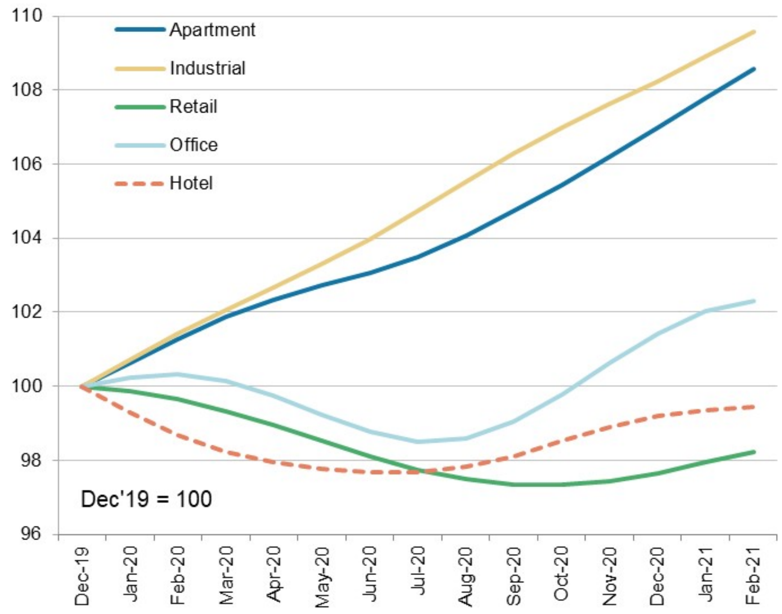


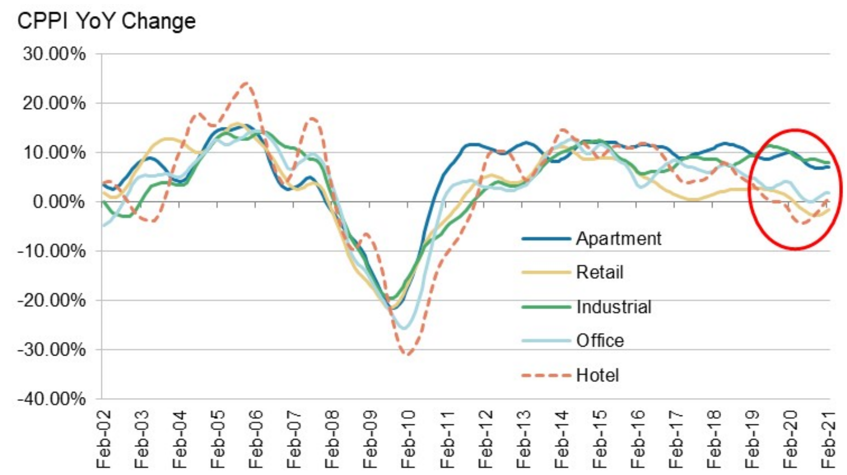


Source: RCA, Morgan Stanley Research

Divergent Recovery Path Across Property Types

Apartments and Industrial have led while retail, office, and hotel lag





Source: RCA, Morgan Stanley Research.

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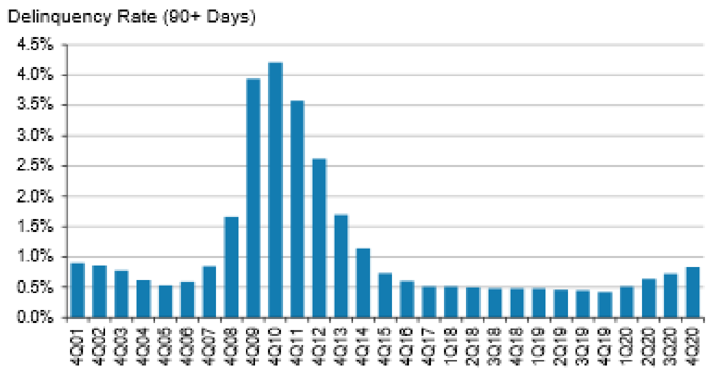
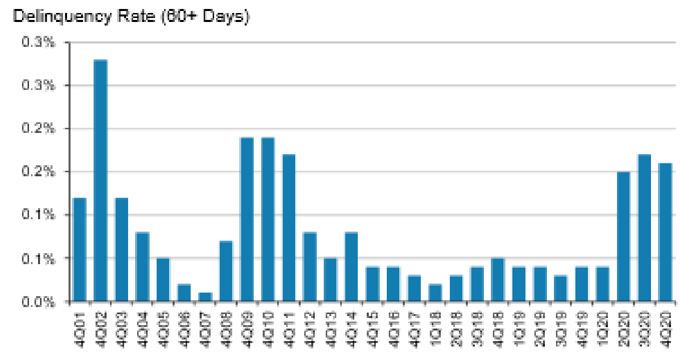
#1. Debt Markets Bent, but Didn't Break

Delinquencies have generally declined

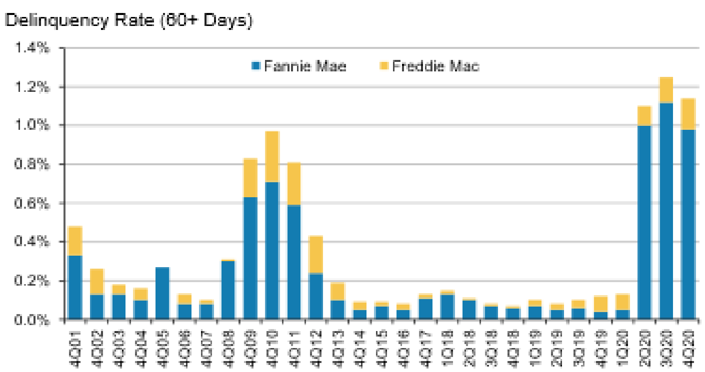
Banks & Thrifts



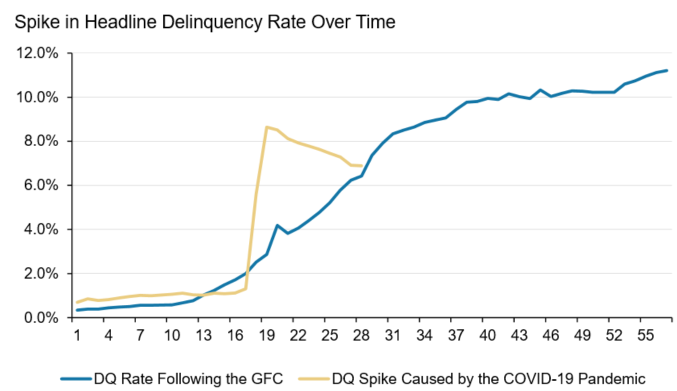
Life Insurance Cos



Government Sponsored Entities



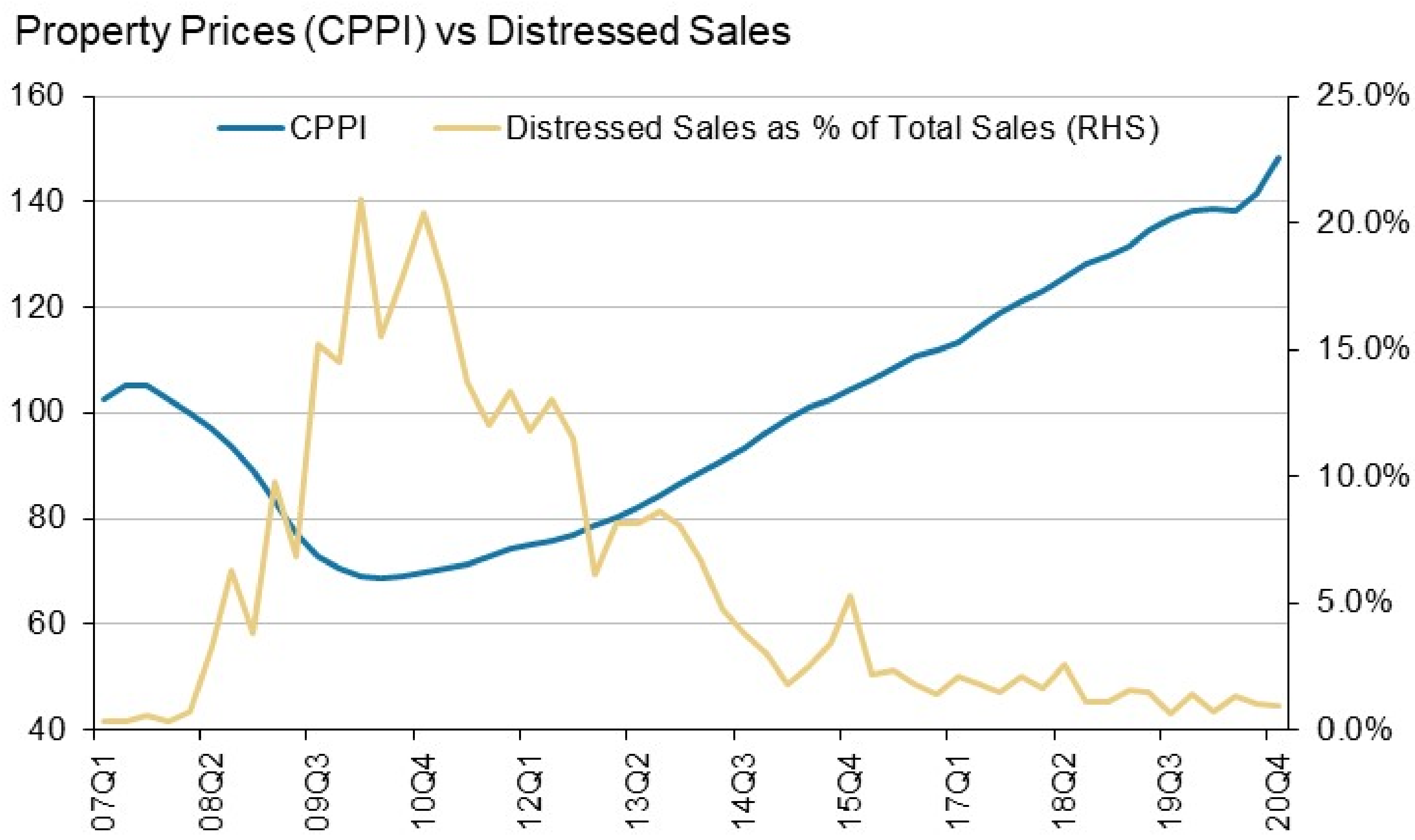
CMBS 2.0 Conduit



Source: MBA, Trepp, Morgan Stanley Research

#2. Distress Is Very Limited

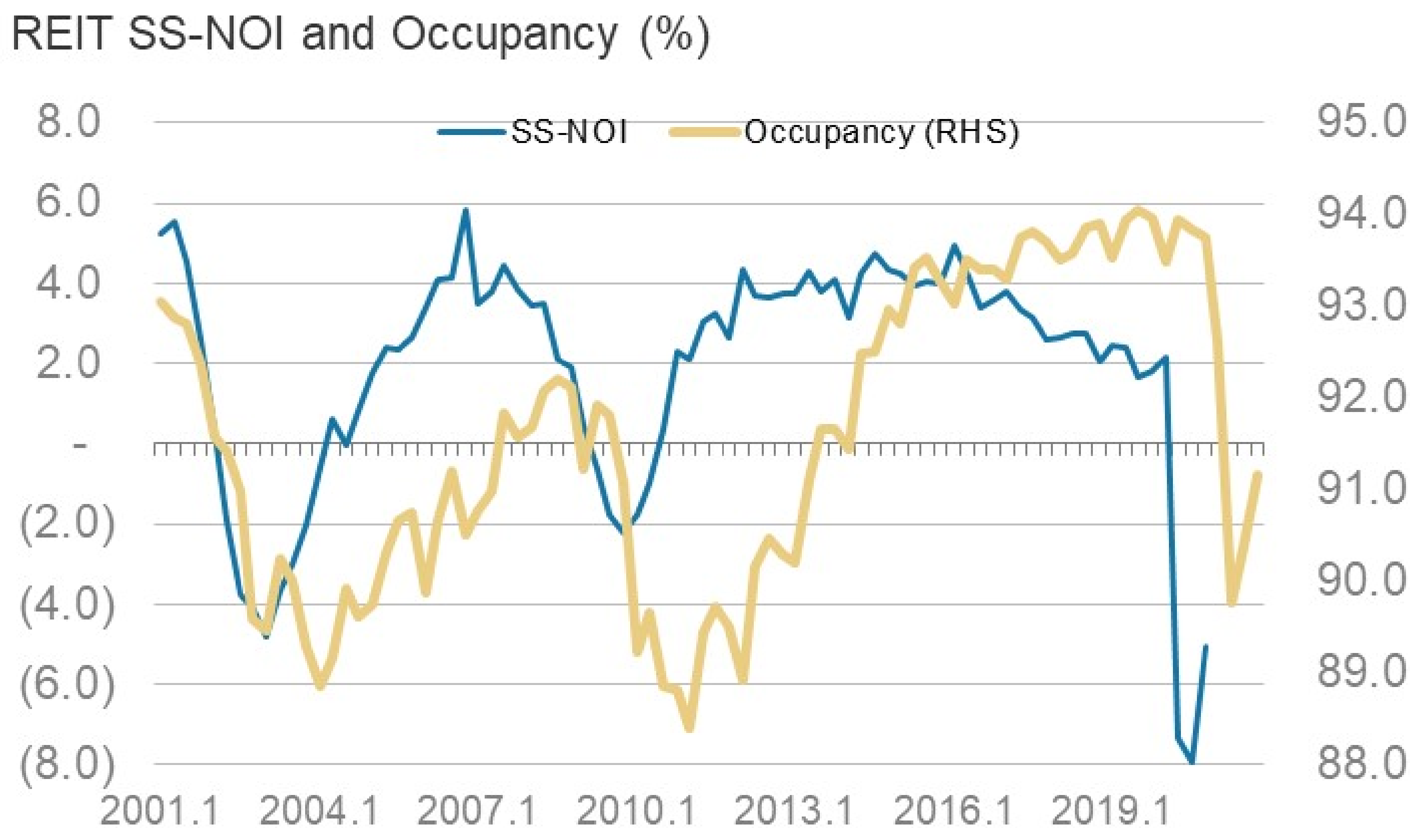
Distressed sales represent only 1% of total transaction volumes



Source: RCA, Morgan Stanley Research

#3. Fundamentals Are Stabilizing Faster than Anticipated

SS-NOI (-5%) and occupancy (91.2%) improved sequentially in 4Q20



Source: NCREIF, Morgan Stanley Research

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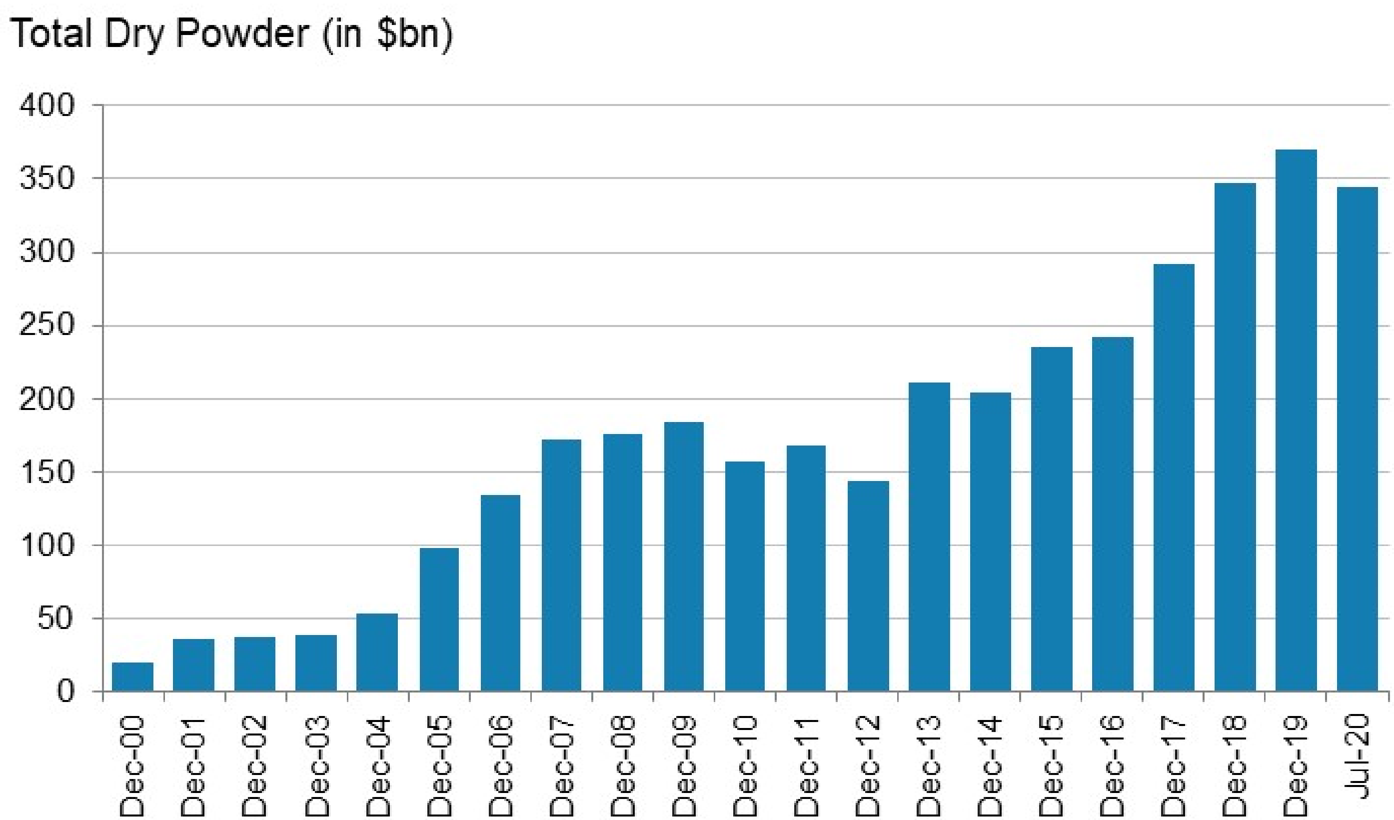
#4. $350bn of Dry Powder on the Sidelines

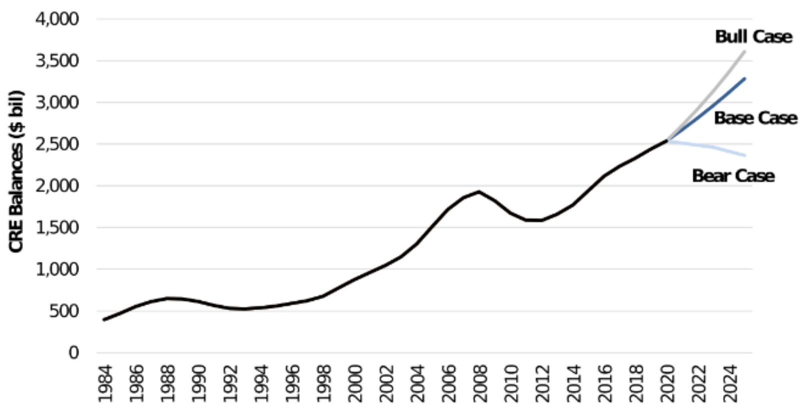
+$1tn of buying power targeting CRE

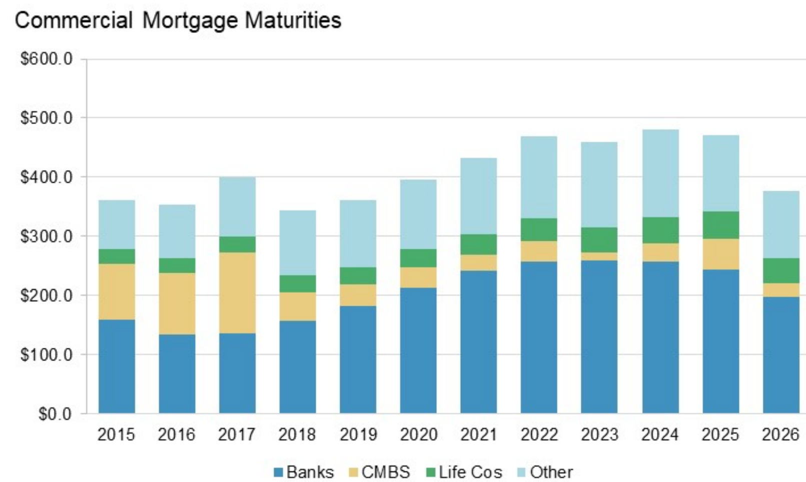


Source: Preqin, Morgan Stanley Research

#5. Wall of Maturities Is Not a Wall of Worry

There is $2.3tn of CRE mortgages maturing over next 5 years

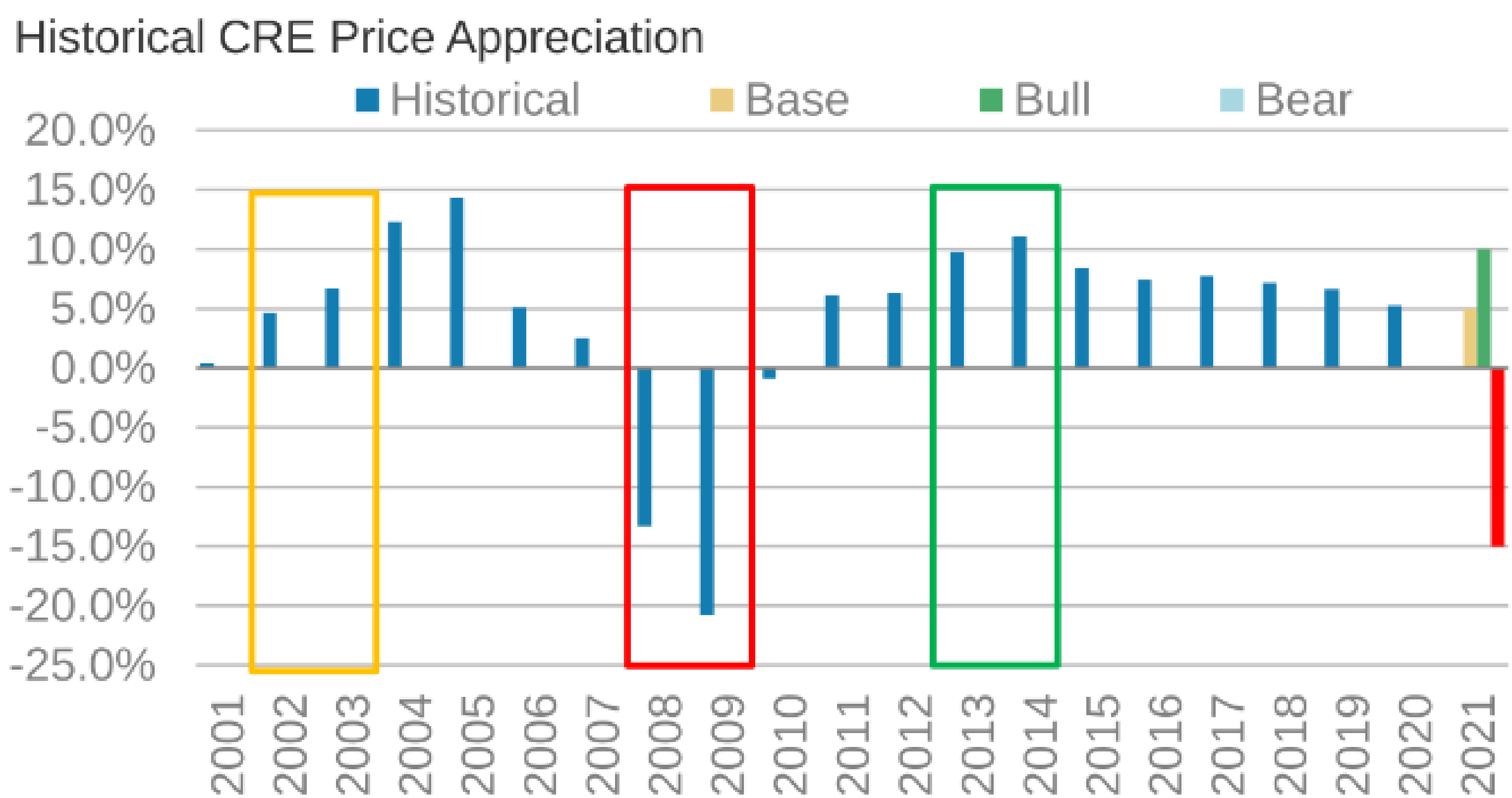




Source: Trepp, FDIC, Morgan Stanley Research. Note: CRE includes Nonfarm Nonresidential, Construction/Development, Multifamily and Farmland Loans for FDIC-Insured Commercial Banks and Savings Institutions

We Raise Our Forecast for CRE Property Prices to +5%

Our bull case is +10% vs -10% to -15% for the bear

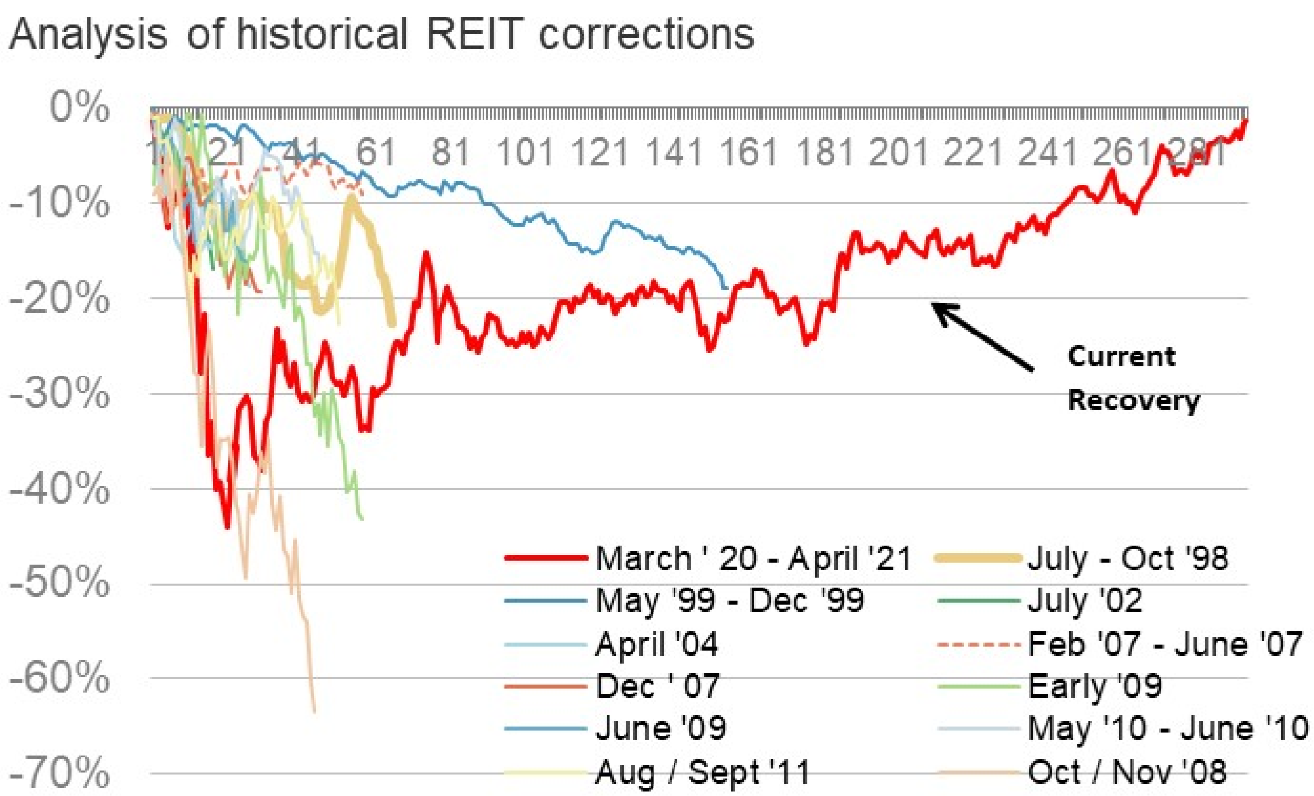


Source: RCA, Morgan Stanley Research

Implications for REITs

REITs Have Rallied Back Along with the Broader Markets

The sell-off was the 2nd worst ever; REITs have not fully recovered



Source: Thomson Reuters, Morgan Stanley Research

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REITs Had One of Their Worst Years Ever in 2020…

4th worst absolute year and 3rd worst relative year

	1Q21			Full Year			Delta in 10Y Treasury Rates	
Year	REITs	S&P	Diff	REITs	S&P	Diff	1Q	Full Year
2021	8.8%	6.2%	2.6%				0.83	
2020	-27.0%	-19.6%	-7.4%	-7.6%	18.4%	-26%	-1.25	-1.00
2019	16.3%	13.6%	2.6%	25.8%	31.5%	-6%	-0.28	-0.77
2018	-8.1%	-0.8%	-7.3%	-4.6%	-4.4%	0%	0.33	0.28
2017	1.0%	6.1%	-5.1%	5.1%	21.8%	-17%	-0.06	-0.04
2016	6.3%	1.3%	5.0%	8.6%	12.0%	-3%	-0.50	0.18
2015	4.7%	1.0%	3.8%	2.5%	1.4%	1%	-0.25	0.10
2014	10.0%	1.8%	8.2%	30.4%	13.7%	17%	-0.31	-0.86
2013	8.1%	10.6%	-2.5%	2.5%	32.4%	-30%	0.09	1.27
2012	10.7%	12.6%	-1.9%	17.8%	16.0%	2%	0.33	-0.12
2011	6.5%	5.9%	0.6%	8.7%	2.1%	7%	0.18	-1.42
2010	10.1%	5.4%	4.7%	28.5%	15.1%	13%	-0.01	-0.54
2009	-32.7%	-11.0%	-21.7%	28.6%	26.5%	2%	0.45	1.63
2008	2.1%	-9.4%	11.6%	-38.0%	-37.0%	-1%	-0.61	-1.81
2007	3.4%	0.6%	2.8%	-16.8%	5.5%	-22%	-0.06	-0.68
2006	15.2%	4.2%	10.9%	35.9%	15.8%	20%	0.46	0.31
2005	-7.4%	-2.1%	-5.3%	12.1%	4.9%	7%	0.26	0.17
2004	12.0%	1.7%	10.4%	31.5%	10.9%	21%	-0.41	-0.03
2003	1.1%	-3.1%	4.2%	36.7%	28.7%	8%	-0.02	0.43
2002	8.3%	0.3%	8.0%	3.6%	-22.1%	26%	0.35	-1.24
2001	-0.5%	-11.9%	11.4%	12.8%	-11.9%	25%	-0.20	-0.06
2000	2.7%	2.3%	0.4%	26.8%	-9.1%	36%	-0.44	-1.33
1999	-4.8%	5.0%	-9.8%	-4.6%	21.0%	-26%	0.59	1.79
1998	-0.7%	13.9%	-14.7%	-16.9%	28.6%	-45%	-0.09	-1.09
1997	0.2%	2.7%	-2.5%	18.6%	33.4%	-15%	0.49	-0.68
1996	2.0%	5.4%	-3.4%	35.9%	23.0%	13%	0.76	0.85
1995	-1.6%	9.7%	-11.4%	12.9%	37.6%	-25%	-0.63	-2.25

Source: Thomson Reuters, Morgan Stanley Research

…but Are Performing Much Better in 2021 YTD

Generated returns of +14.3%, beating S&P 500 by 300bp

Sector	WTD	T-1Month	2Q	1Q	YTD	YoY	Since Peak
CMBS AAA	0.0%	0.6%	0.9%	-2.1%	-1.3%	5.1%	3.7%
CMBS BBB-	0.2%	0.8%	0.7%	6.2%	6.9%	28.9%	-8.0%
IG Corp	-0.2%	1.6%	1.0%	-4.5%	-3.5%	4.4%	2.2%
HY Corp	0.0%	1.8%	0.9%	0.8%	1.7%	17.9%	7.7%
US Treasuries	0.0%	0.9%	0.8%	-4.3%	-3.5%	-4.2%	1.2%
US Long Maturity Ts	-0.3%	3.1%	2.4%	-13.5%	-11.4%	-15.2%	-4.2%
S&P 500	-0.5%	6.5%	4.9%	6.2%	11.3%	47.3%	27.2%
Equity REITs	0.4%	6.5%	5.1%	8.8%	14.3%	35.3%	-0.9%
Industrial	0.0%	10.7%	6.1%	7.0%	13.5%	29.3%	15.6%
Office	0.4%	0.9%	3.4%	11.6%	15.3%	16.1%	-17.1%
Strips	0.3%	5.6%	6.7%	26.0%	34.4%	88.9%	1.5%
Malls	-0.4%	0.6%	3.7%	32.2%	37.2%	120.4%	-14.2%
Apartments	0.5%	5.7%	4.2%	16.5%	21.4%	21.5%	-5.8%
Manufactured Housing	0.6%	7.4%	6.2%	0.0%	6.2%	19.3%	-6.6%
Single Family Rental	1.8%	9.9%	5.4%	9.5%	15.4%	43.7%	14.9%
Healthcare	-0.4%	3.8%	3.9%	6.8%	11.0%	42.5%	-7.4%
Storage	1.3%	14.5%	9.2%	10.2%	20.4%	50.1%	28.7%
Triple Net	0.2%	7.1%	5.0%	6.0%	11.3%	57.9%	-4.0%
Lodging	-0.6%	-5.4%	0.1%	19.0%	19.2%	70.1%	-6.3%
Student Housing	1.1%	5.4%	2.6%	2.1%	4.8%	38.5%	-3.8%
Data Center	1.2%	10.2%	5.5%	-2.2%	3.1%	4.5%	11.7%
Infrastructure	0.2%	10.5%	4.5%	5.8%	10.5%	2.5%	5.1%

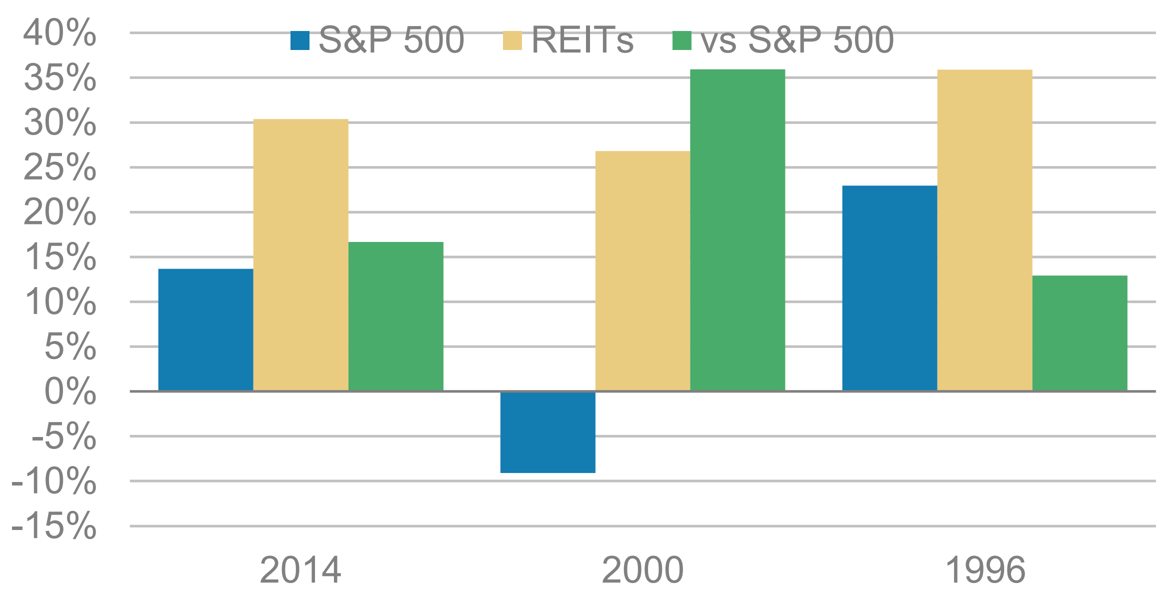
Source: Bloomberg, Morgan Stanley Research

REITs Historically Outperform on the Rebound

We analyze the performance in three notable years

- In the years following notable relative underperformance, REITs historically stage strong rebounds.
- For instance, they generated returns of +30.4% in 2014, +26.8% in 2000 and +35.9% in 1996 after underperforming by -30% in 2013, -26% in 1999, and -25% in 1995.

Historical Bounce Back Years



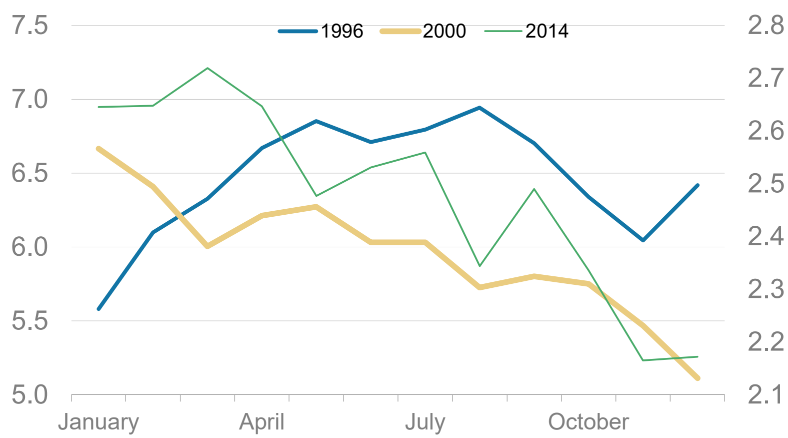
Source: Bloomberg, Morgan Stanley Research

Bounce Back Years Driven by Falling Rates

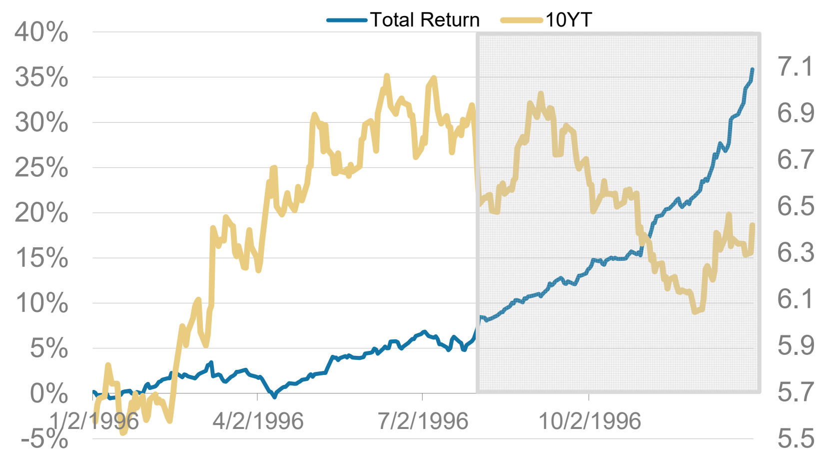
Rates declined in 2014, 2000, and 1996

- 2021 is different than prior bounce-back years as we expect 10-year Treasury rates to rise to 1.45%.
- By comparison, in 2014, 10-year Treasury rates declined 90 bps after rising 130 bps the prior year, and in 2000 they declined 130 bps after rising 180 bps the year before.
- While rates rose 85 bps in 1996, 10-year Treasury rates declined 90 bps over the final 3 months of the year, coinciding with a 25 percentage point increase in total returns (or ~70% of the full-year returns) over that period of time.

10YTs in Bounce Back Years



1996: Total returns vs 10YTs

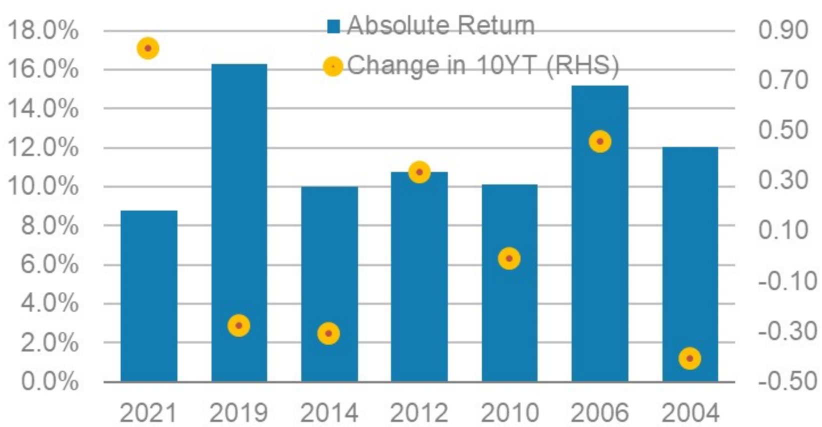


Source: Bloomberg, Morgan Stanley Research

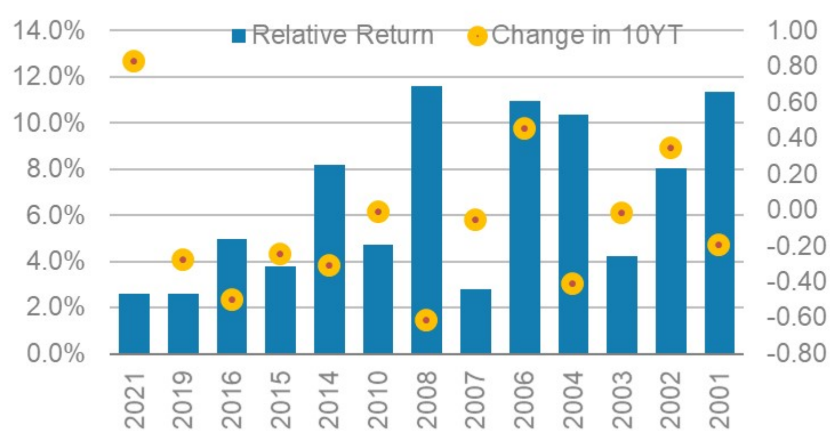
REITs Have Outperformed Despite Rising Interest Rates

1Q21 was 7th best absolute start since ‘95 and 13th best relative

Absolute Returns vs Change in 10YT



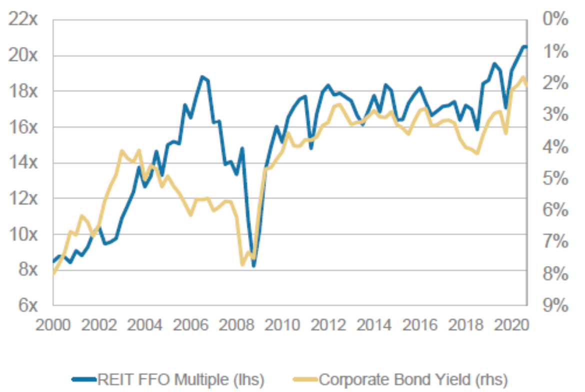
Relative Returns vs Change in 10YT

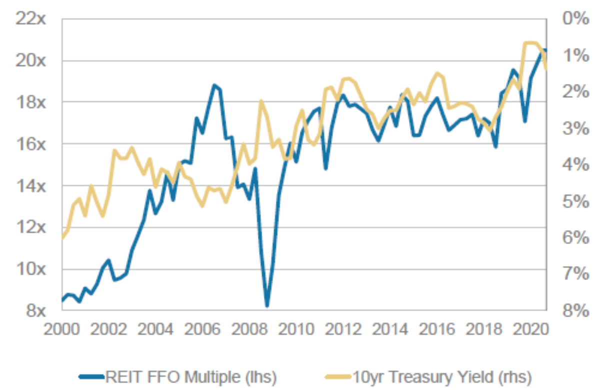


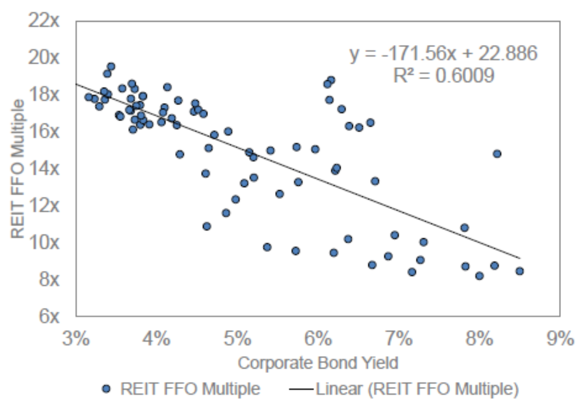
Source: Bloomberg, Morgan Stanley Research

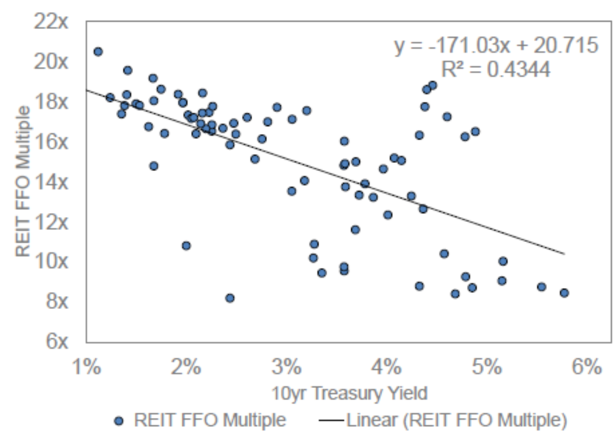
Multiples vs. Rates

FFO multiples are more highly correlated to Corp Yields vs. 10YTs









Source: Bloomberg, Thomson Reuters, Morgan Stanley Research

Reflation Rotation Drives Returns

YTD Subsector performance is nearly the mirror image of 2020

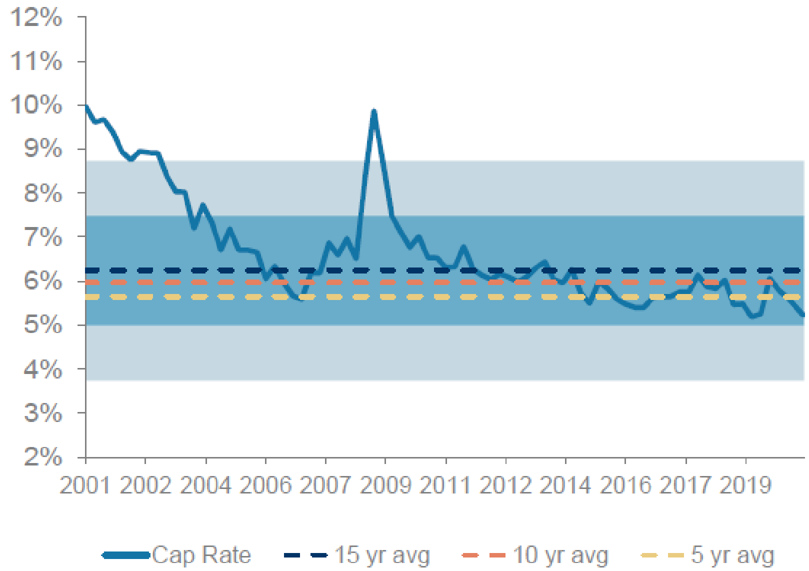
Sector	YTD '21	FY '20
Malls	37.2%	-39.9%
Strips	34.4%	-26.8%
Lodging	19.2%	-26.5%
Office	15.3%	-26.2%
Apartments	21.4%	-15.0%
Healthcare	11.0%	-8.9%
Triple Net	11.3%	-4.9%
Student Housing	4.8%	-4.4%
Manufactured Housin	6.2%	-1.2%
Single Family Rental	15.4%	6.3%
Infrastructure	10.5%	8.0%
Industrial	13.5%	12.6%
Storage	20.4%	12.9%
Data Center	3.1%	21.8%

Source: Bloomberg, Morgan Stanley Research

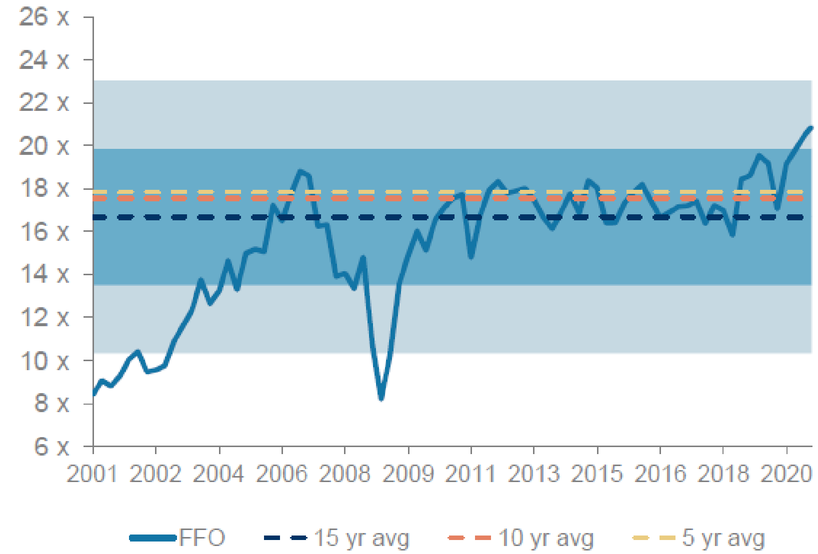
REITs Look Expensive in Absolute Terms

FFO multiples stand at historical highs, implied cap rates near historical lows

Implied Cap Rates



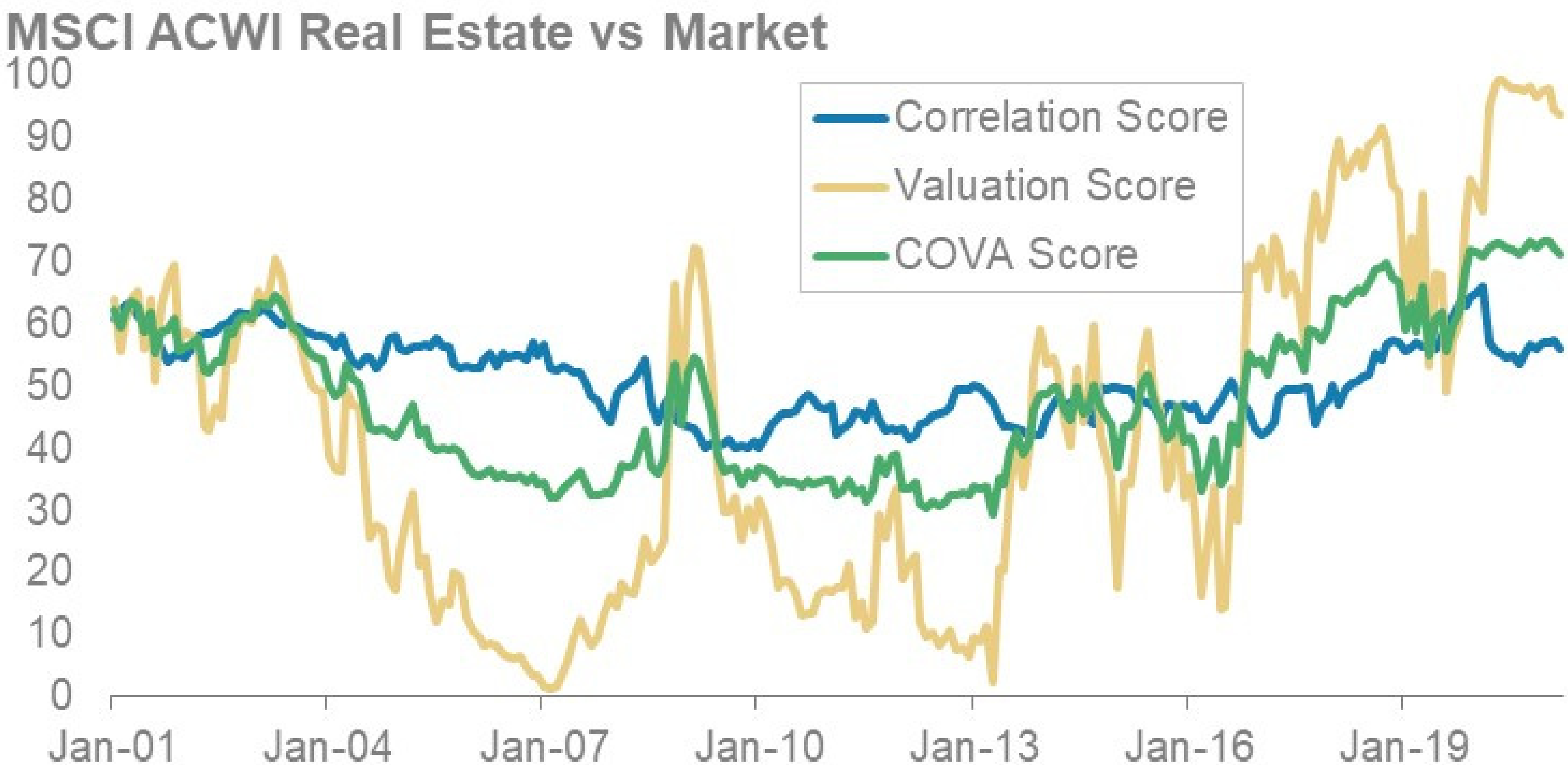
FFO Multiples



Source: Bloomberg, Thomson Reuters, Morgan Stanley Research; As of March 12, 2021

…but Cheap Relative to Broader Markets

Correlation-valuation (COVA) scorecard suggests REITs are as cheap to the broader markets as they've ever been



Source: Morgan Stanley Research

…but Cheap Relative to Broader Markets (Cont)

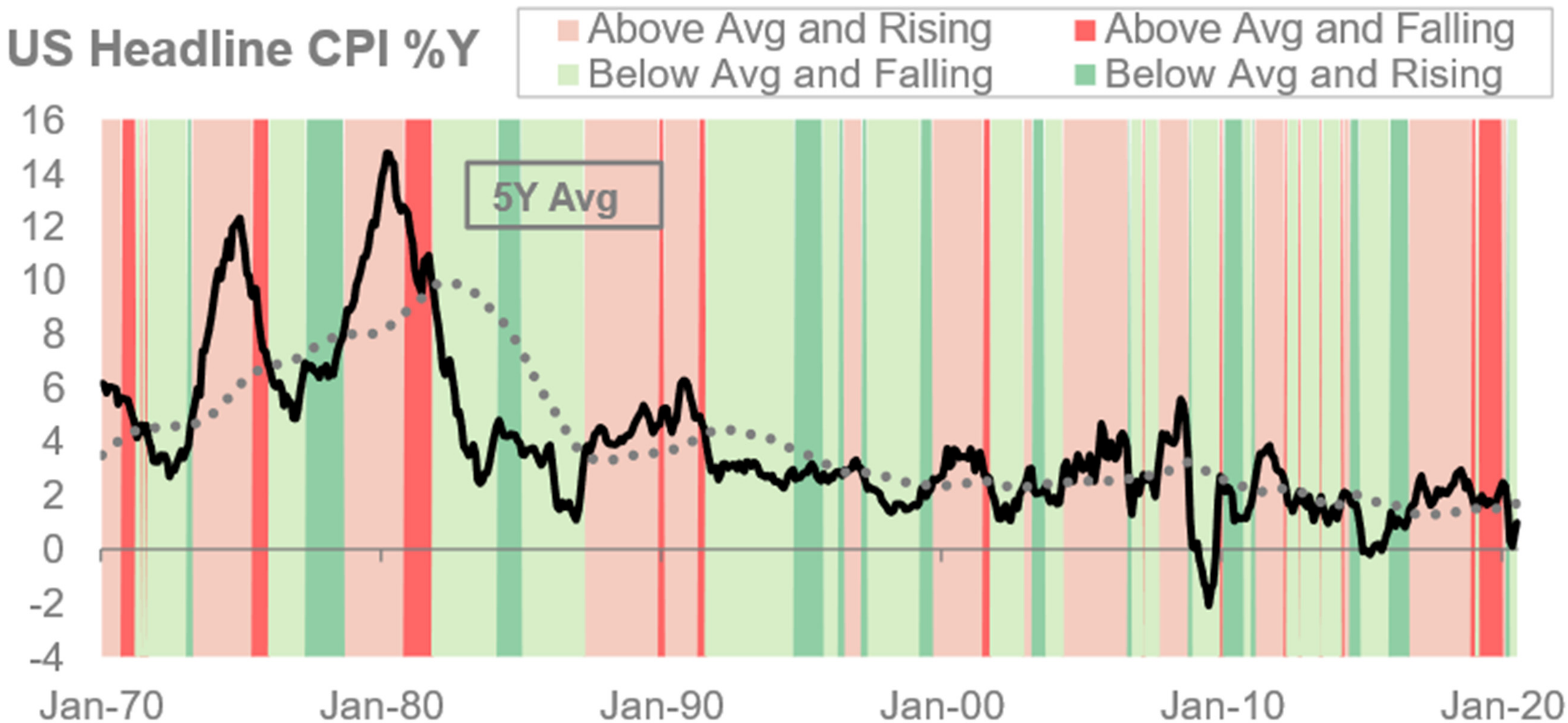
Top Assets Based on COVA Scorecard

Long/ Short	Asset		Corr.		Stability		Downside Beta		Valuation		Cost of Carry	Overall COVA score	Hedge Ratio ($mn per $1mn of equity risk)
Short	US HY XS	●	90	●	100	●	70	●	86	●	97	87	1.9
Long	Cons Staples vs Mkt	●	80	●	85	●	68	●	98	●	99	85	2.1
Short	US IG XS	●	79	●	100	▲	57	●	93	●	92	81	12.1
Long	Utilities vs Mkt	●	68	●	78	●	67	●	98	●	79	77	3.8
Long	Healthcare vs Mkt	●	70	●	71	▲	58	●	88	●	93	76	2.8
Long	Telecom vs Mkt	●	75	▲	64	▲	65	●	93	●	76	75	2.7
Short	BTP Spread 10y	●	69	●	72	▲	53	●	99	●	77	73	5.1
Short	ZARUSD	●	79	●	99	●	74	◆	29	●	91	73	2.3
Short	EM Credit XS	●	77	●	92	●	68	▲	65	▲	65	72	5.6
Short	AUDUSD	●	83	●	79	●	71	▲	54	●	74	72	2.2
Long	USDKRW vol	●	76	●	93	▲	52	●	69	●	80	72	9.5
Long	AUDUSD vol	●	88	●	82	▲	56	▲	45	●	89	71	10.2
Long	Real Estate vs Mkt	▲	52	▲	58	▲	58	●	98	●	90	71	1.5
Long	MSCI EM vol	●	90	●	100	▲	60	◆	26	●	88	71	11.3
Long	EU 10y vol	●	68	●	73	▲	53	●	70	●	94	71	10.6
Long	US HY vol	●	87	●	100	▲	55	▲	53	▲	66	70	10.8
Short	NZDUSD	●	76	●	74	●	68	▲	55	●	71	69	2.7
Long	JPYUSD	▲	56	▲	64	▲	61	●	88	●	76	68	8.8
Long	Topix vs S&P 500	▲	66	▲	46	▲	51	●	93	●	74	67	3.1
Short	CADUSD	●	84	●	84	▲	66	▲	55	▲	47	67	3.4

Source: Morgan Stanley Research

Rising Inflation = Rising Returns

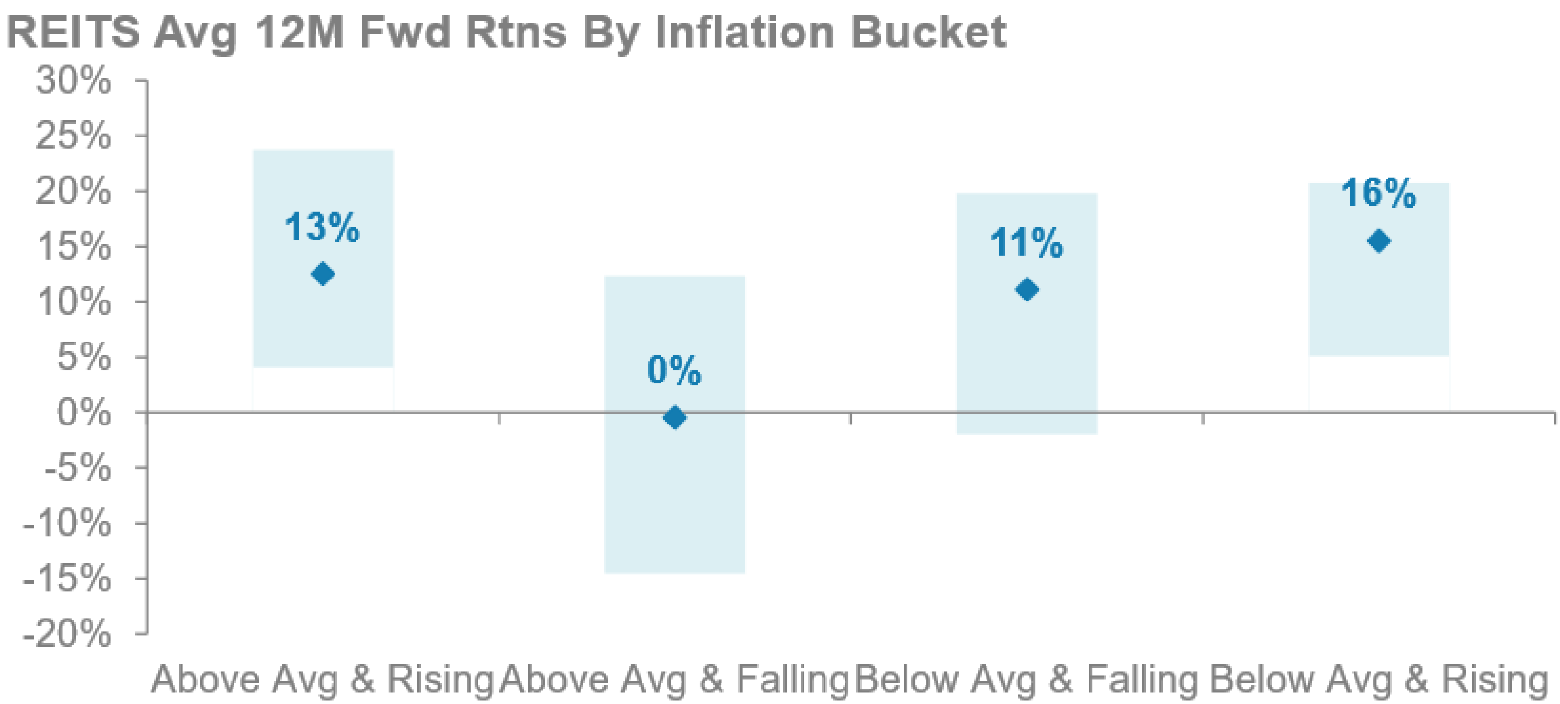
We decomposed historical US inflation into four regimes



Source: Bloomberg, Morgan Stanley Research

Rising Inflation = Rising Returns (Cont)

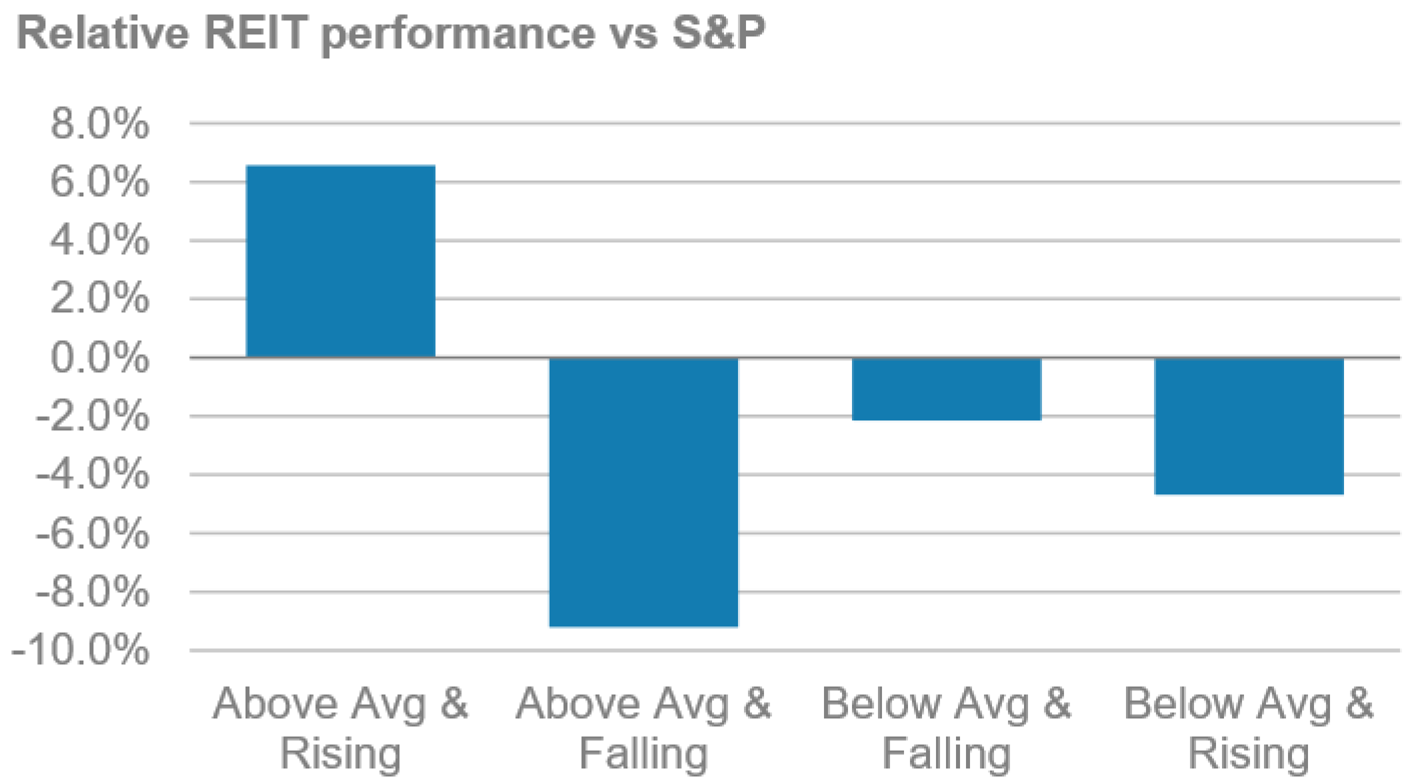
REITs performs the best when inflation is "Below Trend and Rising"



Source: Bloomberg, Morgan Stanley Research

Rising Inflation = Rising Returns (Cont)

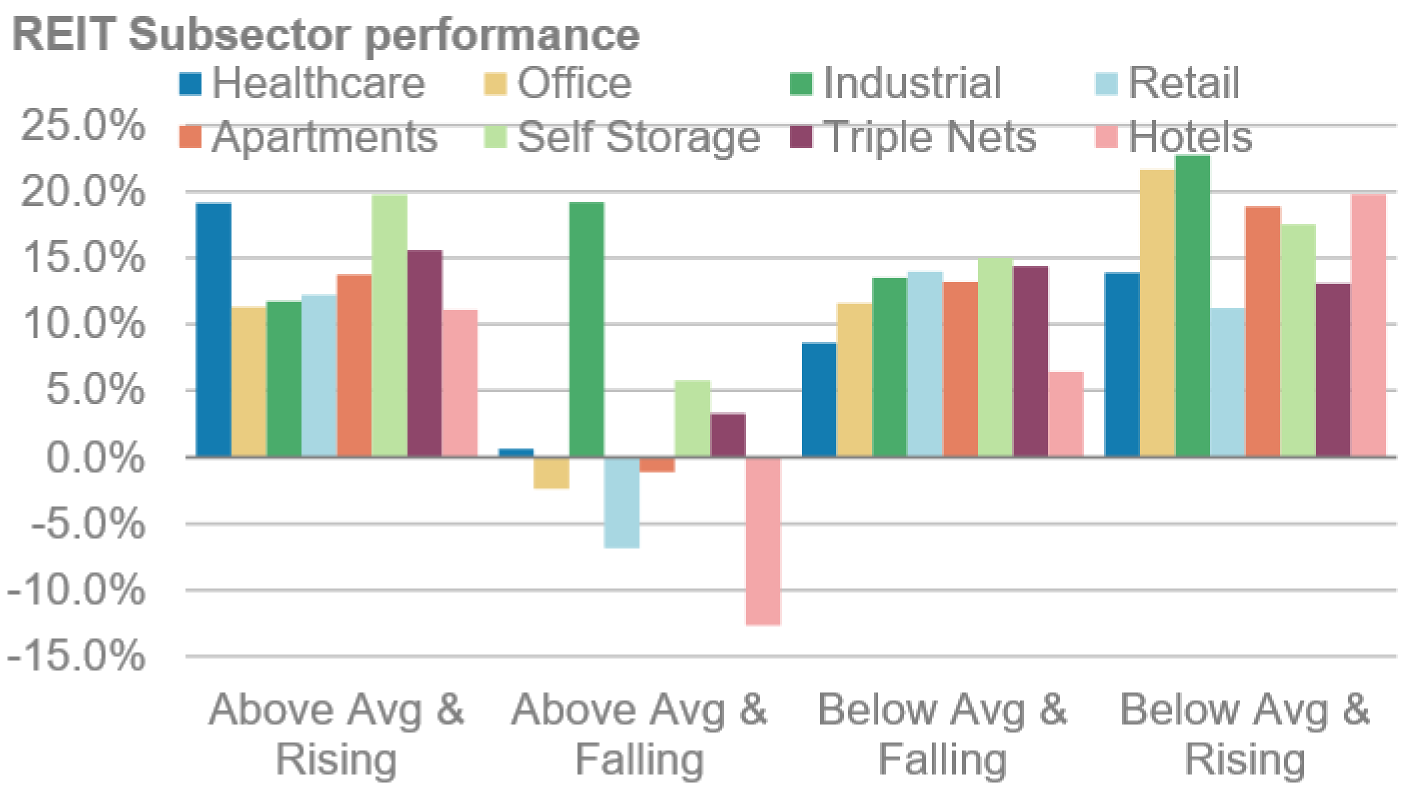
REITs underperform the S&P in 3 out of 4 regimes



Source: Bloomberg, Morgan Stanley Research

Rising Inflation = Rising Returns (Cont)

We analyze subsector performance

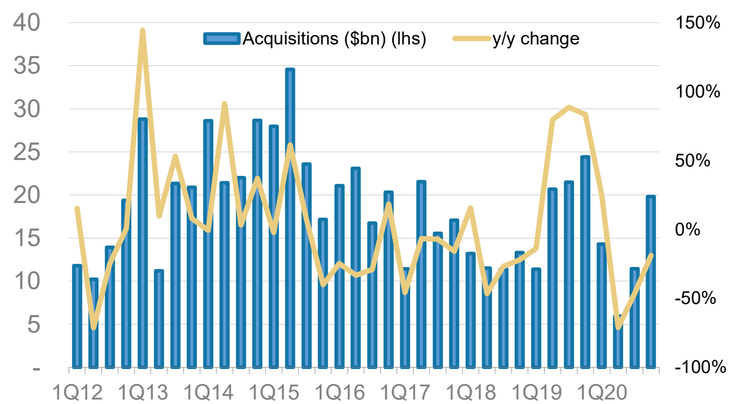


Source: Bloomberg, Morgan Stanley Research

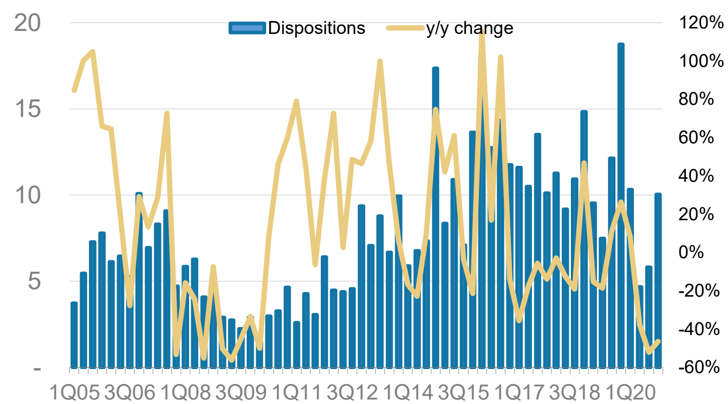
Appendix A: REIT Trend Overview

Acquisitions & Dispositions

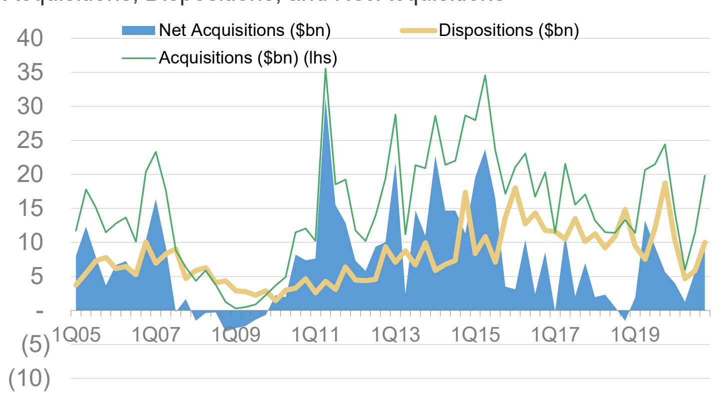
Acquisitions ($) and y/y % change



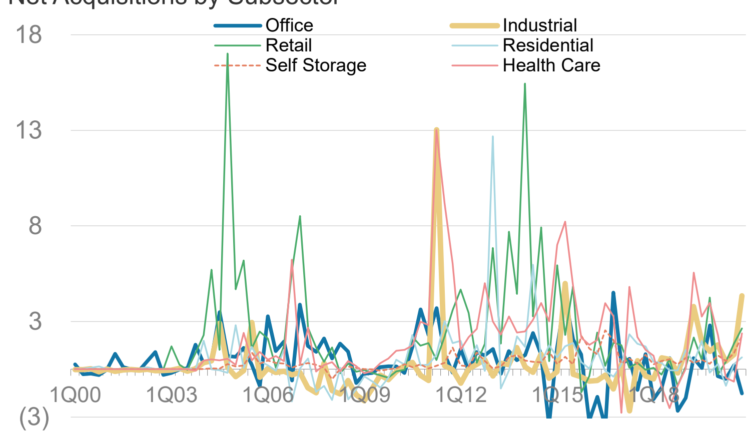
Dispositions ($) and y/y % change



Acquisitions, Dispositions, and Net Acquisitions



Net Acquisitions by Subsector

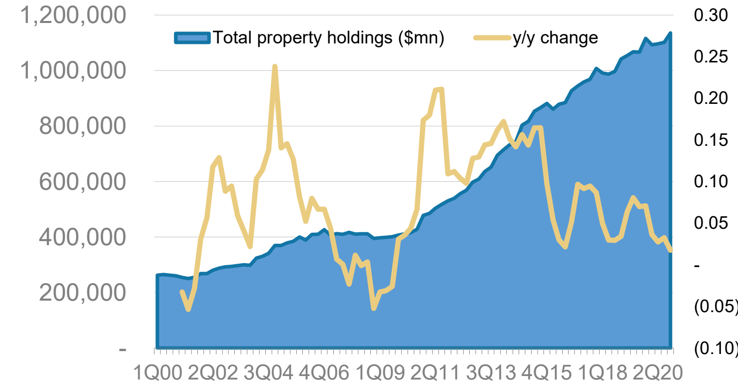


Source: NAREIT, Morgan Stanley Research

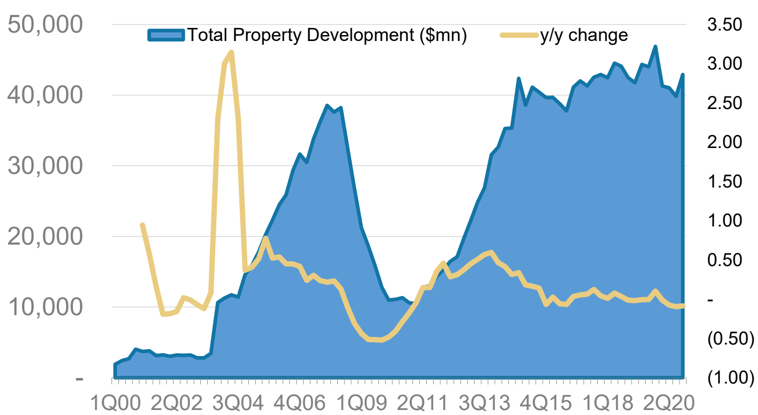
Property Holdings & Development Pipeline

- Total REIT property holdings stood at $1.14 trillion as of 4Q20, up 1.8% y/y and 3.0% sequentially.
    - Office, retail, lodging/resorts, and infrastructure REITs saw their property holdings decline sequentially,
    - While Data Centers (+68.1%) and Self storage (+35.4%) had the largest sequential increase.

Total Property Holdings (Underappreciated Book Value) and Y/Y Change



Property Development Pipeline and Y/Y Change



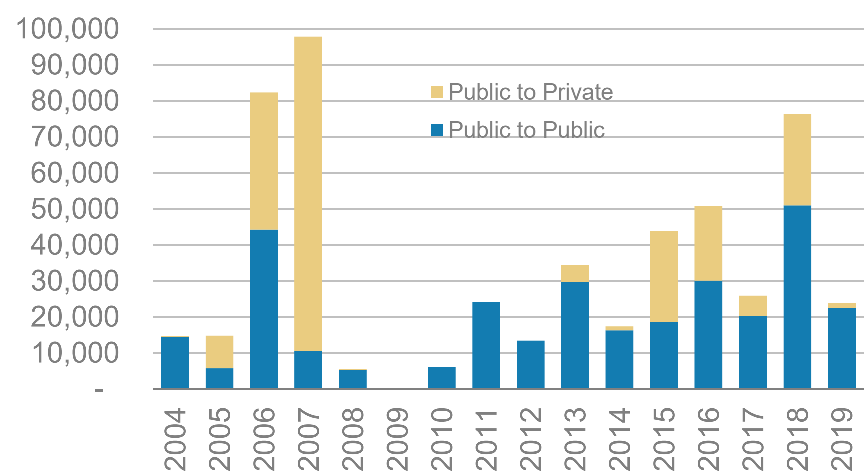
- Total REIT property development stood at $42.9bn as of 4Q20, a 8.5% decline y/y but +7.7% sequentially.
    - Industrial (+20.0%) had the largest seq. increase, followed by Self Storage (+18.9%).
    - All REIT sectors saw sequential increases other than Retail, Health Care, and Specialty.

Source: NAREIT, Morgan Stanley Research

M&A

- In 2019, completed and pending mergers and acquisitions of US REITs declined to $25.9 billion, from $78.3 billion in 2018, a year that saw the acquisitions of GGP and Forest City Realty Trust by Brookfield Asset Management.
- The 2019 total represented the lowest aggregate deal value since 2014. Of that activity, $22.5 billion (87%) resulted from REIT-to-REIT deals, on par with the 10-year average of $23.3 billion, while $1.3 billion (13%) resulted from acquisitions of REITs by non-REITs, down from the 10-year average of $8.4 billion.
- While the monthly REITWatch report published by NAREIT does not include 2020 merger data yet, we highlight SPG's purchase of TCO, which closed in Dec-20.

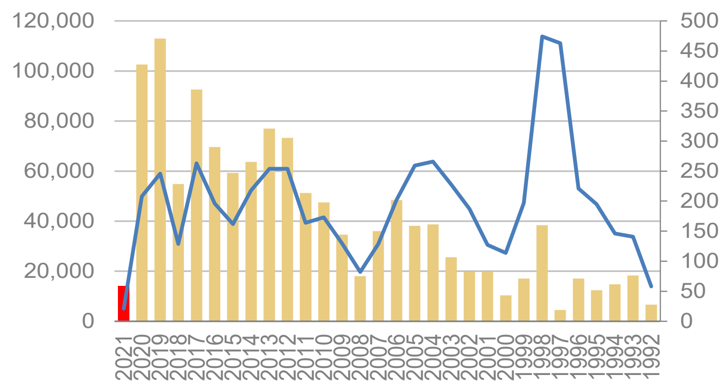
Historical REIT M&A



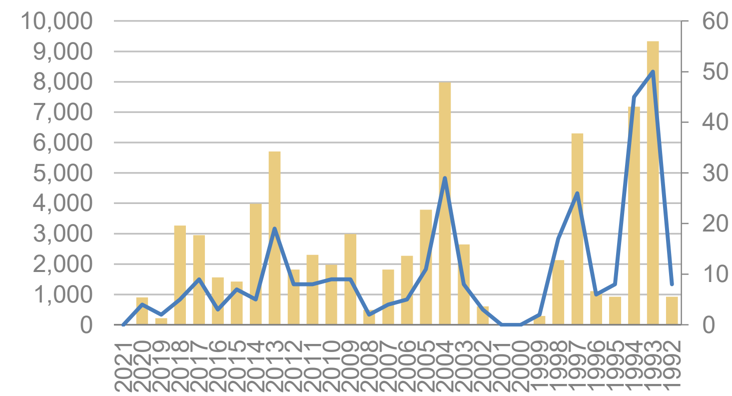
Source: NAREIT, Morgan Stanley Research

Summary of Historical REIT Issuance

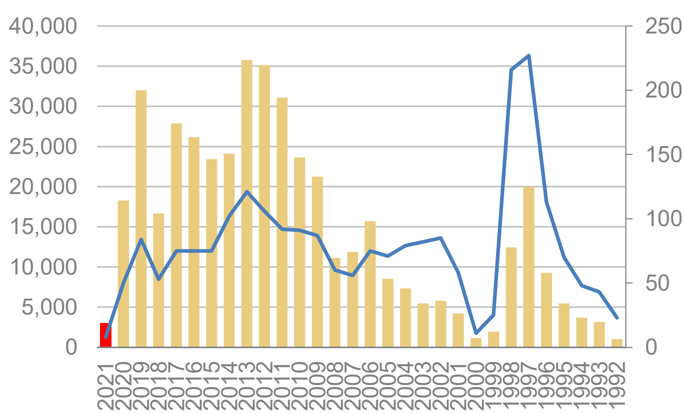
Historical Total Capital Raised (IPO, Secondary Equity, Debt)



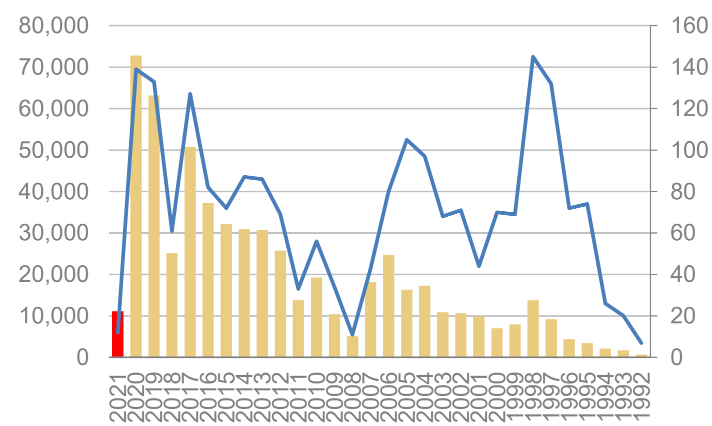
Historical REIT IPO Issuance



Historical REIT Secondary Common Shares



Historical REIT Secondary Senior Unsecured

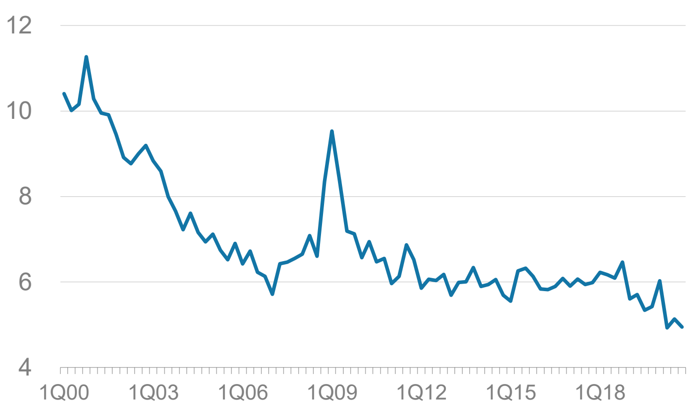


*2021 data through end of February
Source: NAREIT, Morgan Stanley Research

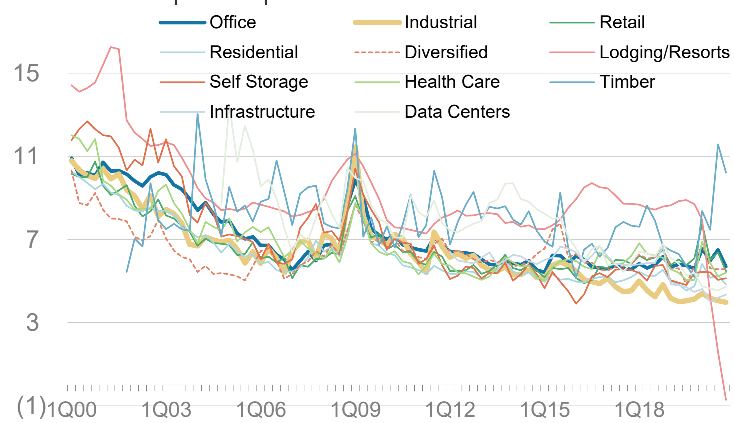
Appendix B: Valuations

Implied Cap Rates

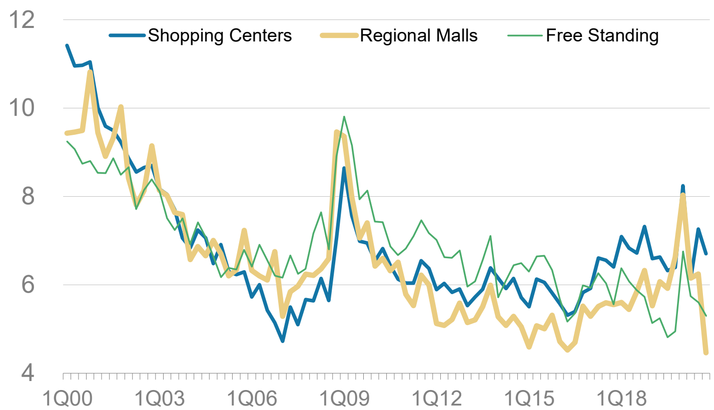
All REITs Implied Cap Rate



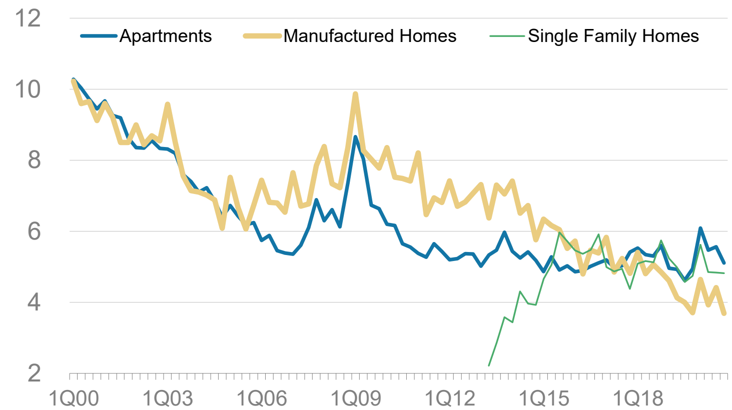
REIT Sector Implied Cap Rates



Retail Subsector Implied Cap Rates



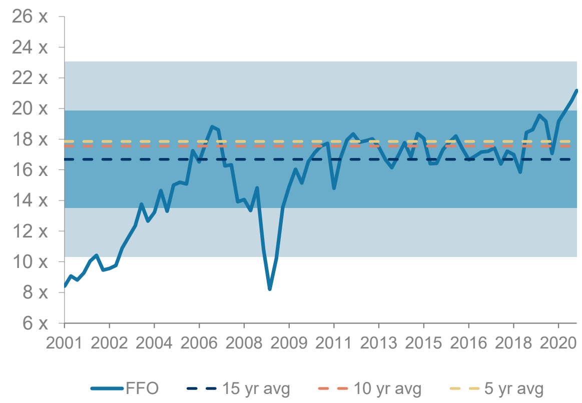
Residential Subsector Implied Cap Rates



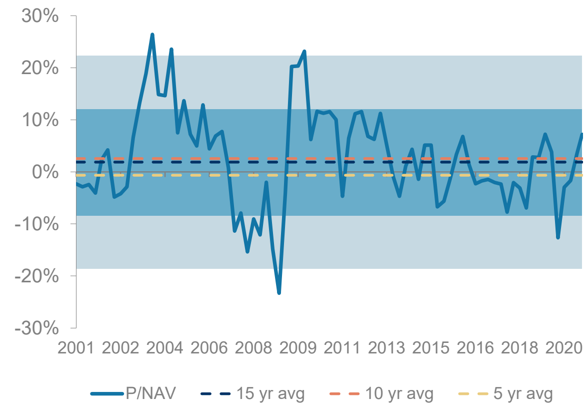
Source: NAREIT, Morgan Stanley Research

Historical REIT Valuation

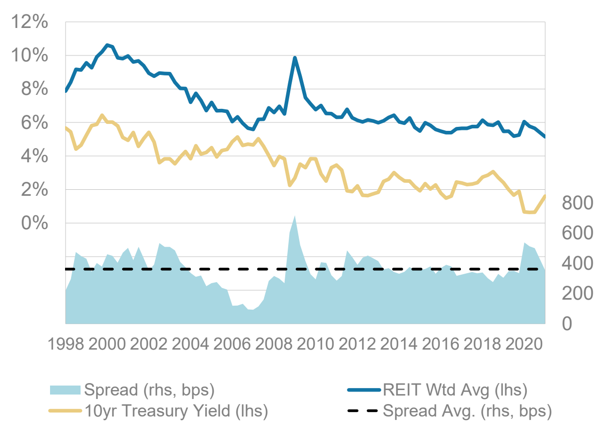
Historical FFO Multiples



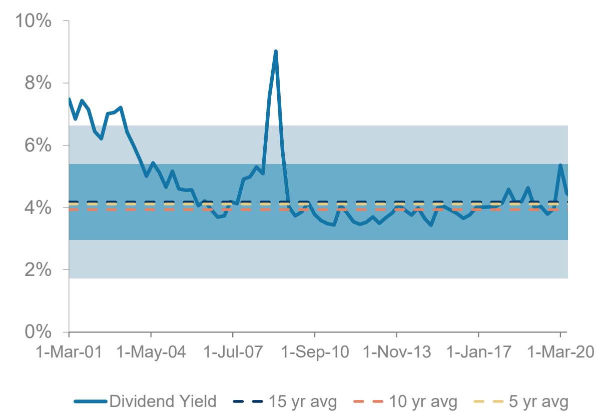
Historical Price to NAV



Historical Implied Cap Rates vs. 10YT



Historical Dividend Yield



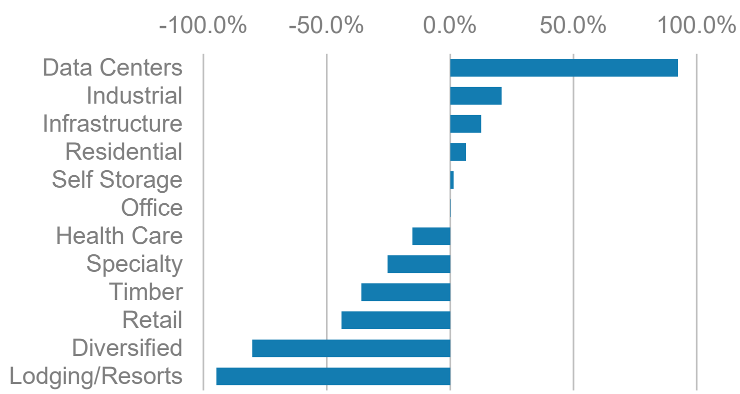
Source: Bloomberg, Thomson Reuters, Morgan Stanley Research

Morgan Stanley

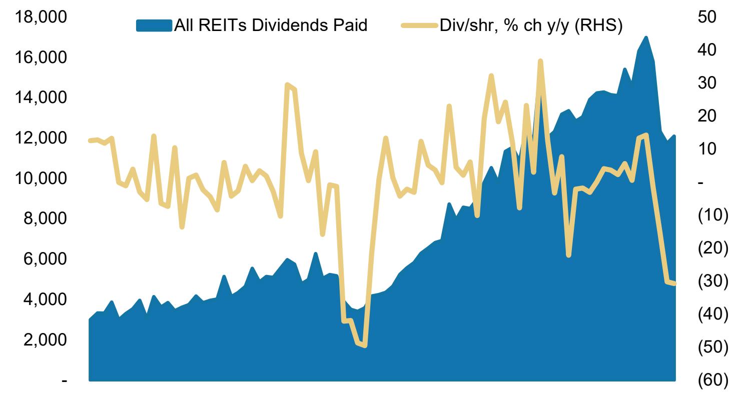
May 2021

Dividends

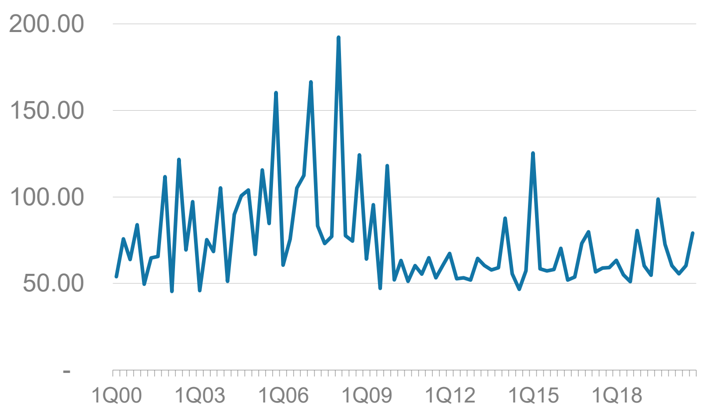
Y/Y Change in Dividends paid 4Q20



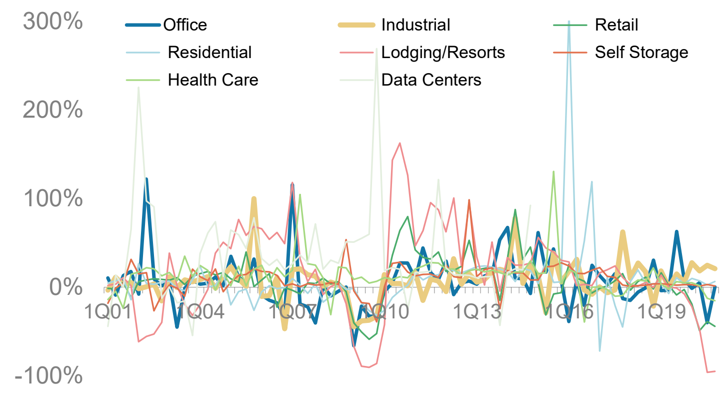
Dividends Paid and % Change Y/Y



All REITs Dividend Payout (%)



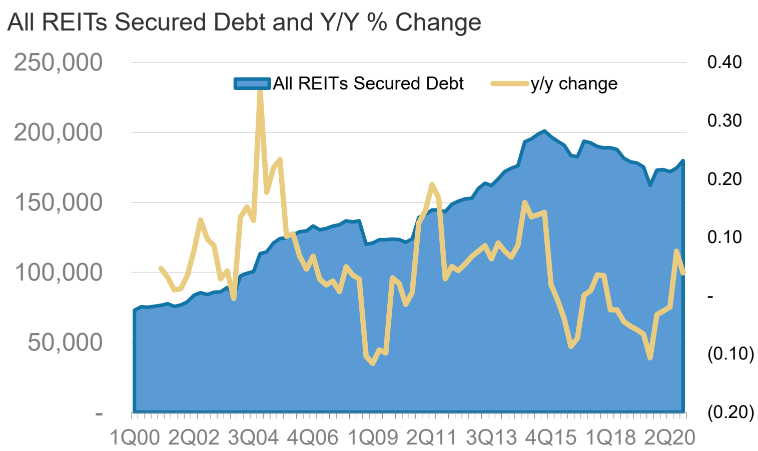
Y/Y % Change in Dividends ($) Paid

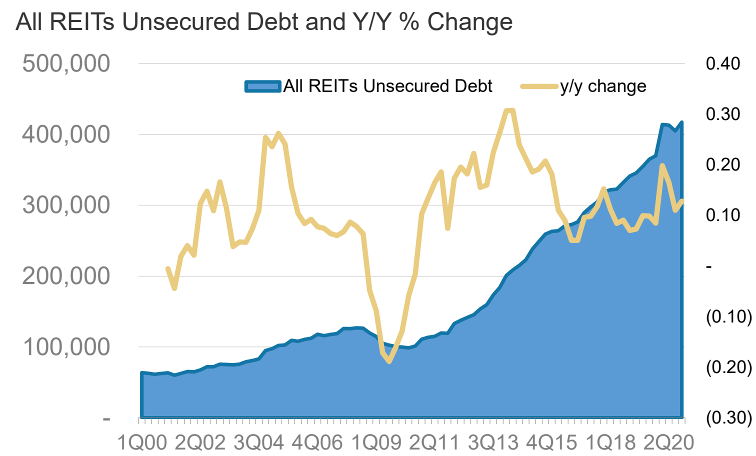


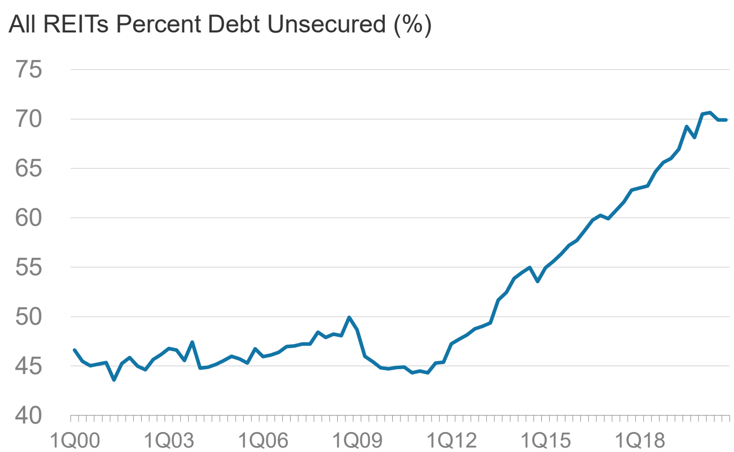
Source: NAREIT, Morgan Stanley Research

Appendix C: Balance Sheet

Secured & Unsecured Credit







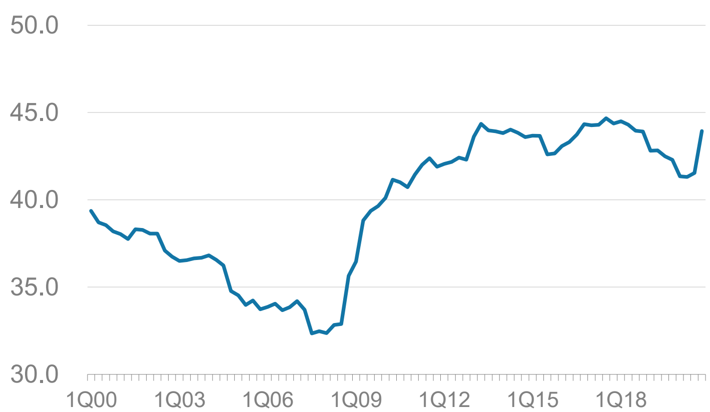
Source: NAREIT, Morgan Stanley Research

Balance Sheet Data

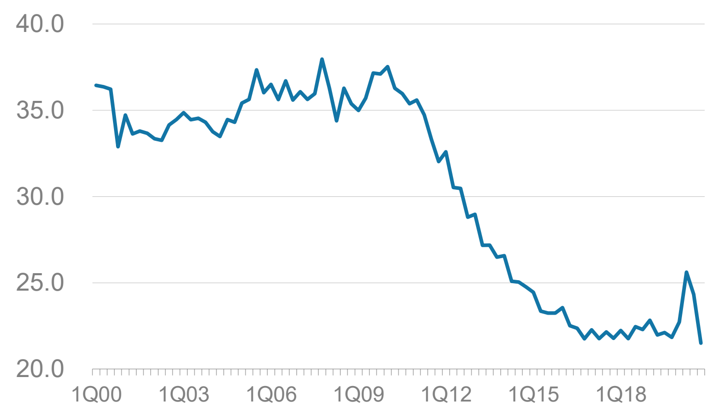
All REITs Debt/Book Assets (%)

All REITs Debt/Market Assets (%)

All REITs Shareholders Equity (Total)/Assets (%)

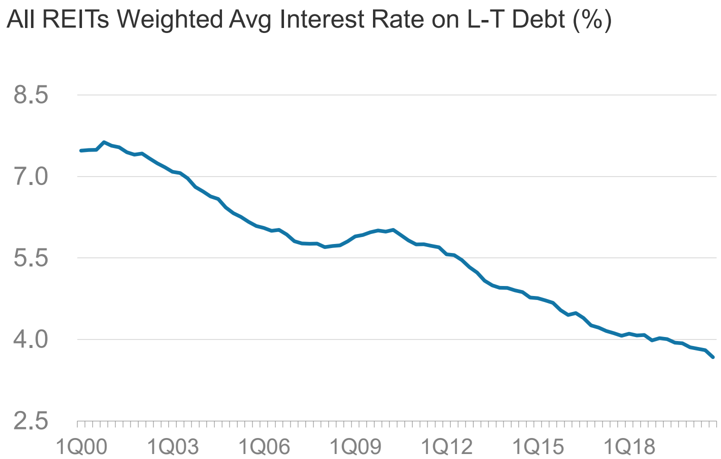


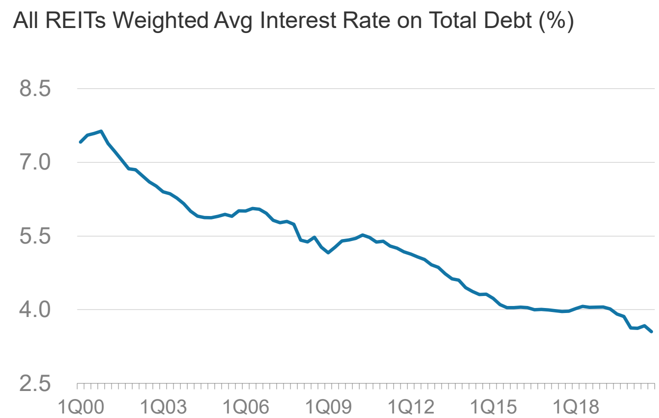
All REITs Interest Expense/NOI (%)

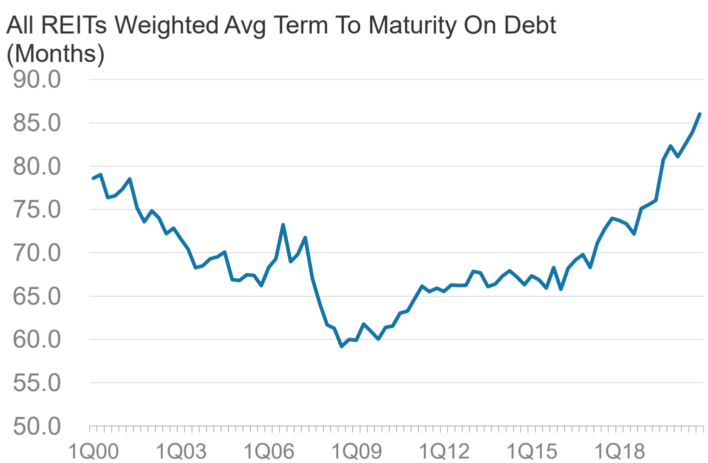


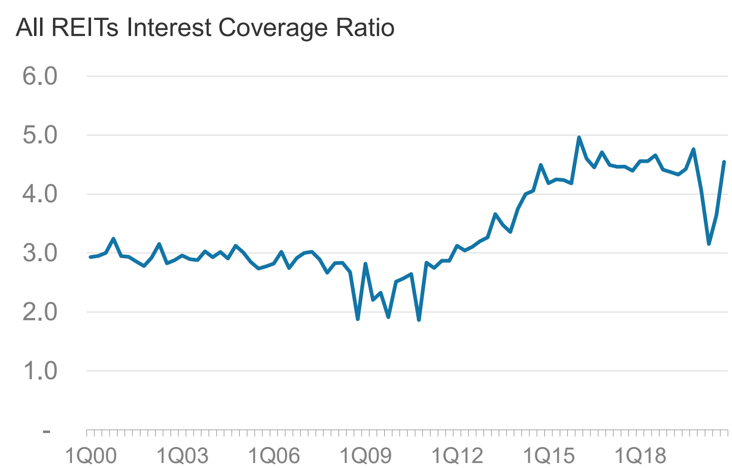
Source: NAREIT, Morgan Stanley Research

Balance Sheet Data Cont.







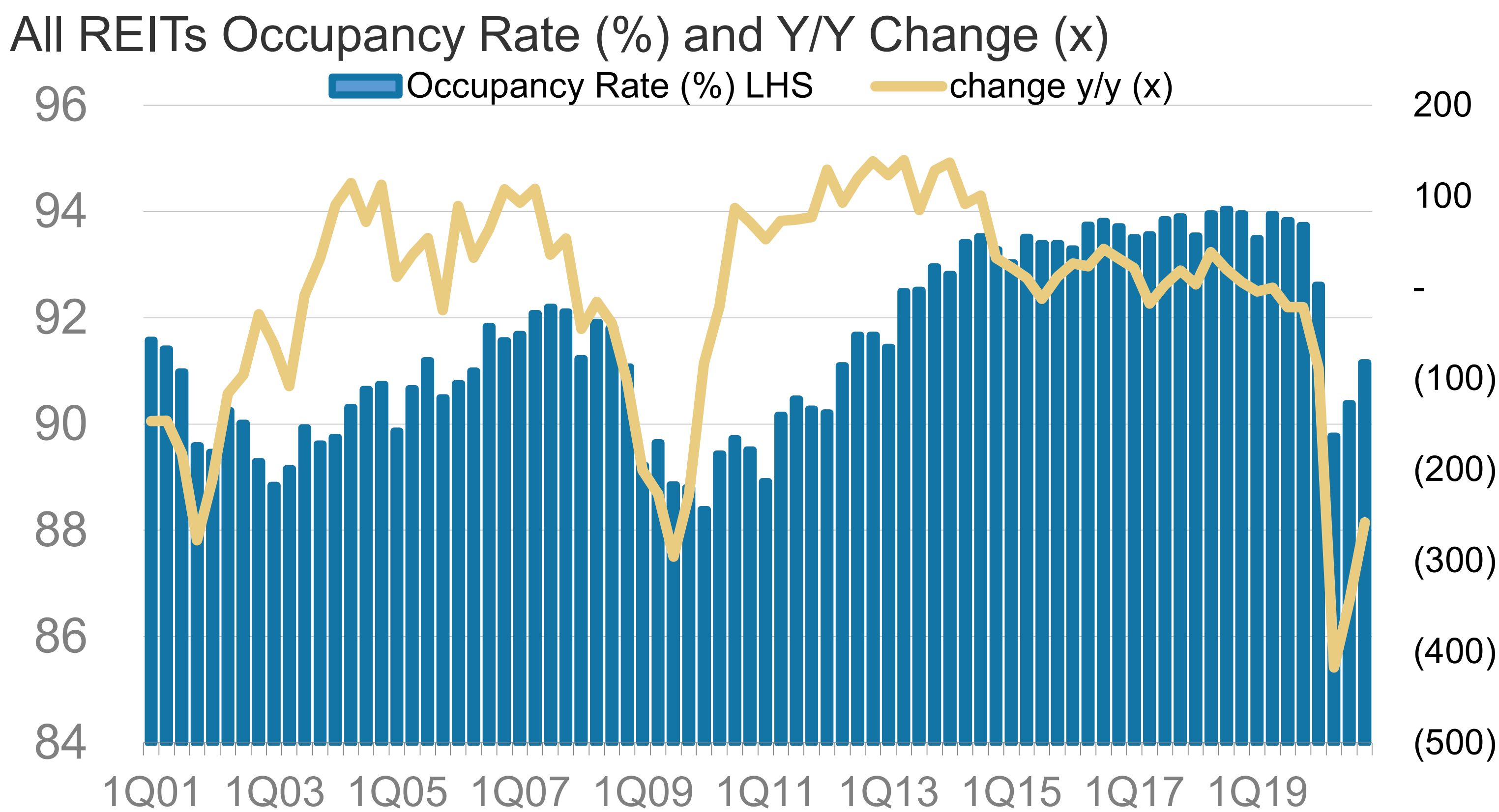


Source: NAREIT, Morgan Stanley Research

Appendix D: Fundamentals

Occupancy

REIT occupancy in 4Q20 was 91.6%, 258bps lower y/y but 77bps higher q/q.

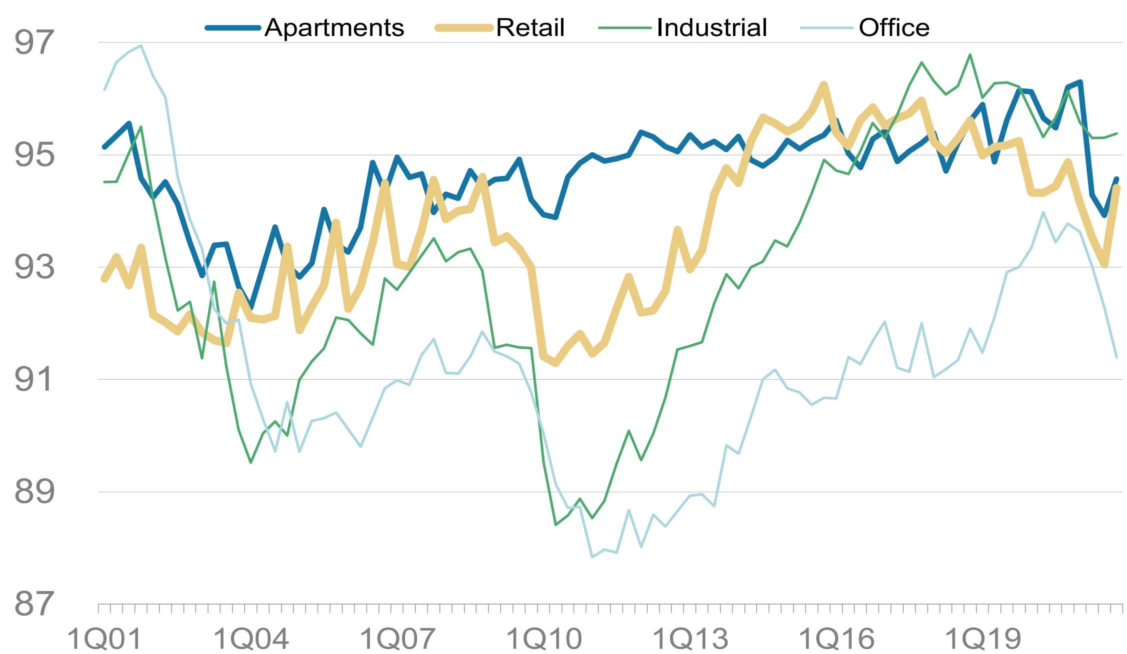


Source: NAREIT, Morgan Stanley Research

Occupancy Cont.

- Among various REIT subsectors that report occupancy, a clear divergence was seen between:
  - COVID winners (Industrial, occupancy only -75bps y/y in 4Q),
  - COVID laggards that are inflecting off of the lows (Apartments, with occupancy -163bps y/y in 4Q but +65bps q/q & Retail, with 4Q occupancy -46bps y/y but 136bps higher q/q),
  - COVID laggards that didn't show improvement in 4Q (Office, with occupancy -75bps in 4Q and -88bps q/q).

Occupancy Rate (%) Various REIT Subsectors

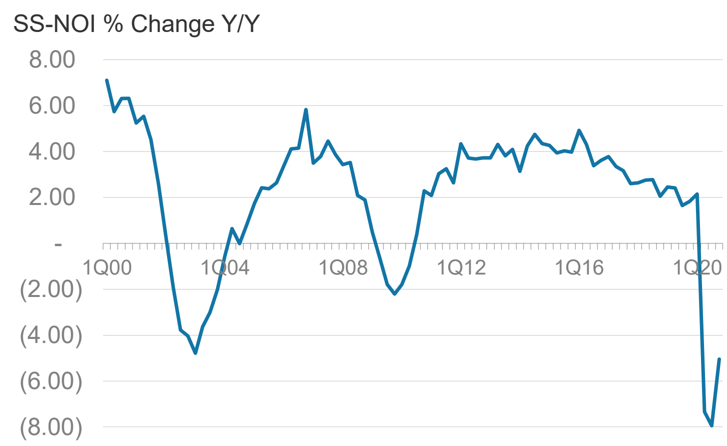


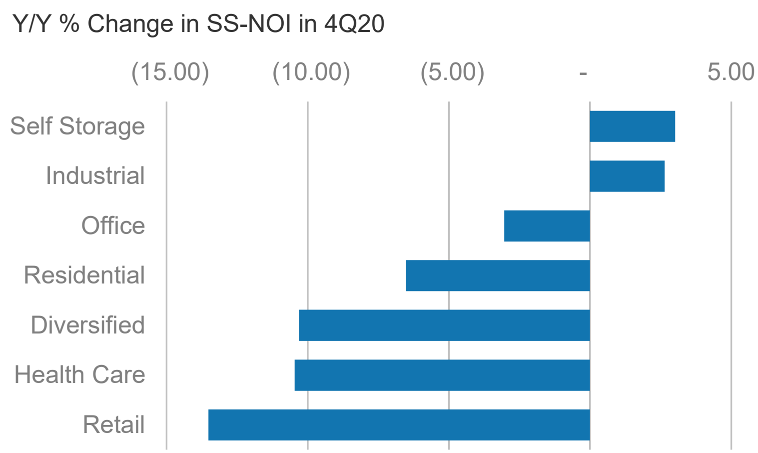
Source: NAREIT, Morgan Stanley Research

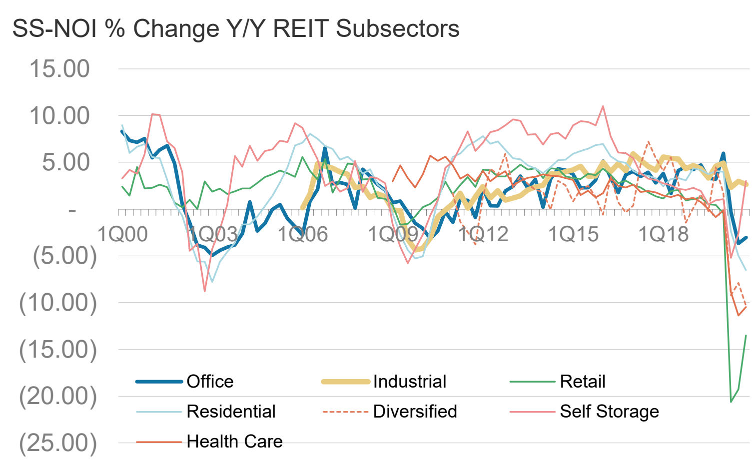
Same-Store NOI

SS-NOI Declined by 5.1%

- On average across all REIT subsectors, Same-Store NOI declined by -5.1% in 4Q, with the declines led by retail, health care, and diversified REITs
- It wasn't all bad in the quarter however, as Self-Storage and Industrial REITs posted positive SS-NOI (not every REIT subsector discloses SS-NOI; hence, Data Centers and other COVID beneficiary subsectors are not included).







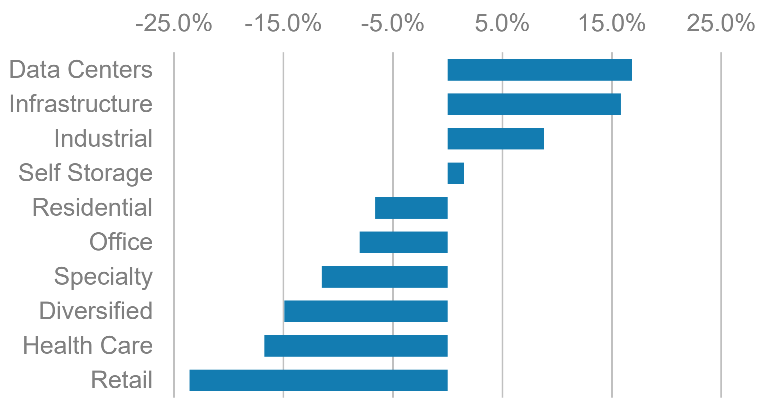
Source: NAREIT, Morgan Stanley Research

FFO

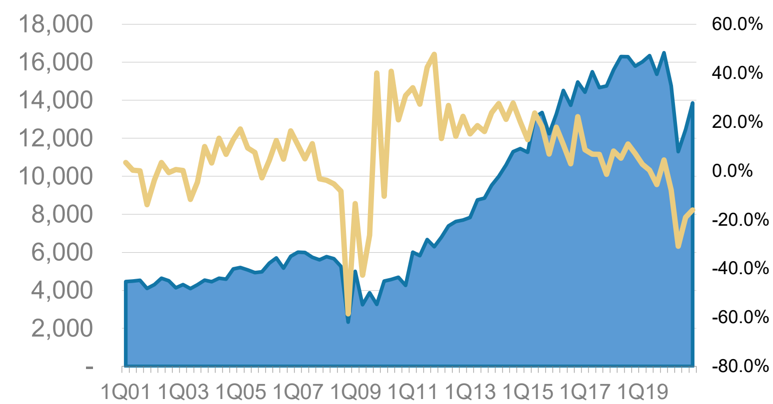
FFO Declined by 16.0%

- On average across all REIT subsectors, FFO declined by -16.0%, with lodging/resorts declining by a staggering 146%, and retail, health care, and diversified REITs also declining by ~15%+ (note that we excluded lodging/resorts from this chart).
- Data Centers, Infrastructure, and Industrial REITs posted the largest y/y FFO growth.
- That said, the y/y decline was better than 3Q's 19.0% and 2Q's 30.9%.

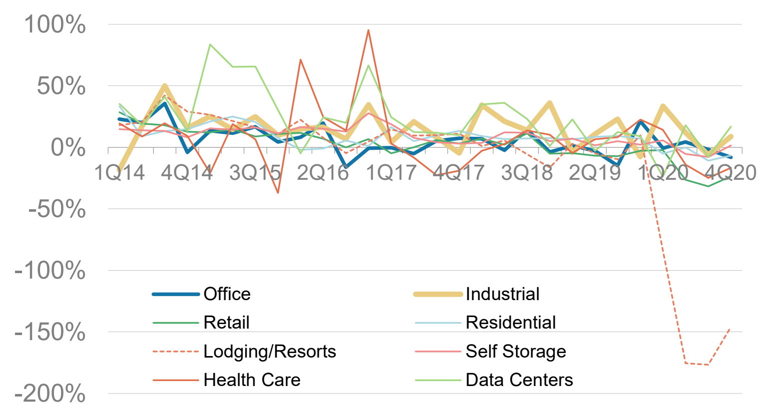
Y/Y Change in FFO in 4Q20



Quarterly FFO for all Equity REITs and Y/Y Change



FFO Y/Y Change REIT Subsectors

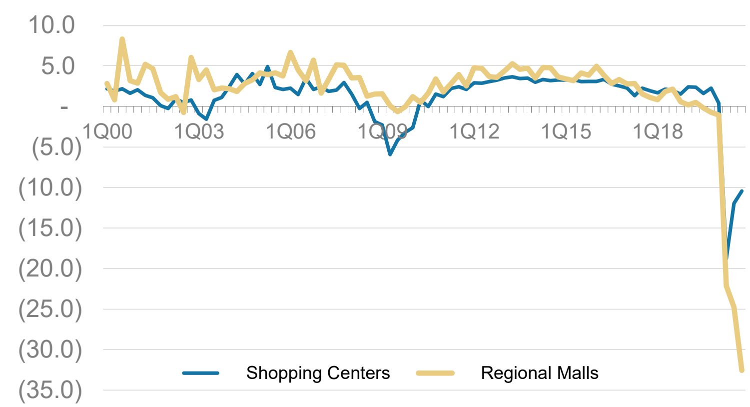


Source: NAREIT, Morgan Stanley Research

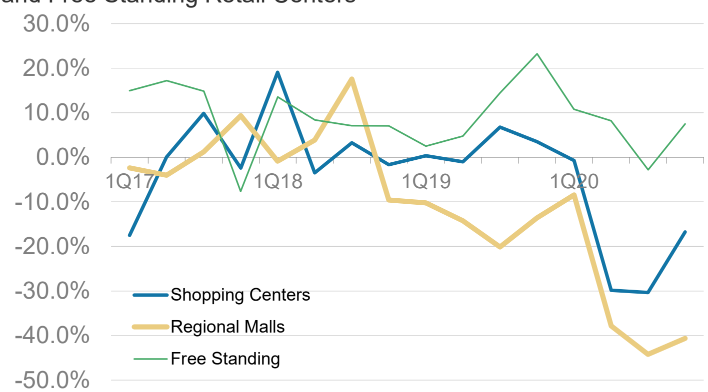
A Closer Look at Retail Subsectors

- Headline results of retail FFO declining 23.6% doesn't tell the full story. These declines were driven by Regional Malls which had FFO decline 40.6%, while Free Standing (y/y increase of 7.5%) and Shopping Center (y/y decline of 16.8%) retail properties fared much better (see exhibit below).
- 4Q SS-NOI results were similarly divergent between specific retail subsectors, with shopping centers showing stabilization in 4Q with y/y results only -10.4%, while Regional Malls continued their free fall decline in 4Q.

SS-NOI % Chg Y/Y Shopping Centers vs. Regional Malls



FFO Y/Y Change Shopping Centers, Regional Malls, and Free Standing Retail Centers

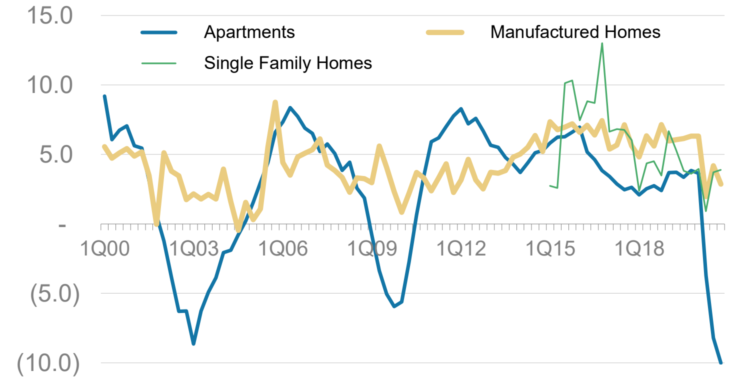


Source: NAREIT, Morgan Stanley Research

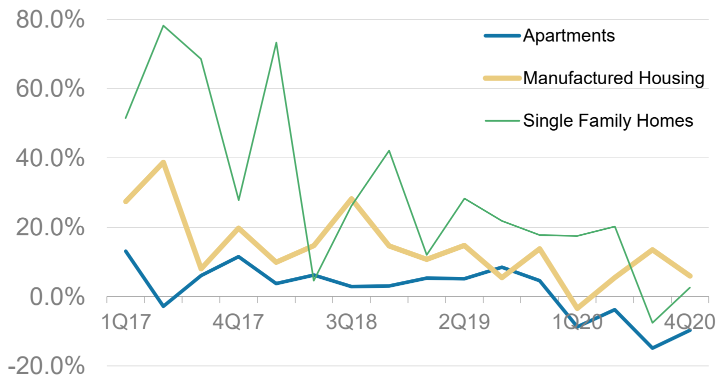
A Closer Look at Residential Subsectors

- Similarly, while residential FFO declined -6.6% y/y, specific subsectors within residential REITs had divergent results.
    - Apartments, primarily located in urban core areas, saw FFO decline 9.7% y/y.
    - Conversely, manufactured housing and single family homes actually had y/y FFO increases of 6.0% and 2.6%, respectively.
- 4Q SS-NOI results were similarly divergent between specific apartment subsectors.

SS-NOI % Chg Y/Y Apts, Manufactured Housing, and Single Family



FFO Y/Y Change Apartments, Manufactured Housing, and Single Family Homes



Source: NAREIT, Morgan Stanley Research

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Within the last 12 months, Morgan Stanley has received compensation for products and services other than investment banking services from Affirm Holdings Inc, Aflac, Alliance Data Systems Corp, Allstate Corporation, Ally Financial Inc, American Equity Investment Life Holding, American Express Company, American Homes 4 Rent, American Int'l Grp, Ameriprise Financial, Inc., AMP Ltd, AMUNDI SA, ANZ Bank, Aon PLC, Apollo Global Management Inc, Aramark Holdings Corporation, Arch Capital Group Ltd., Ares Management Corp, Ashmore Group PLC, Assurant Inc., Athene Holding Ltd, Automatic Data Processing Inc, AvalonBay Communities Inc., Bank of America, Bank of Queensland, Bank OZK, BankUnited Inc, Bendigo and Adelaide Bank Limited, Berkshire Hathaway Inc, BFF Bank SPA, BlackRock Inc., BNY Mellon, BOK Financial Corp, Boston Properties, Inc., Bright Horizons Family Solutions Inc, Brighthouse Financial Inc, Brightsphere Investment Group Inc., Cadence Bancorp, Capital One Financial Corporation, Carlyle Group Inc,

Disclosure Section (Cont.)

Challenger Limited, Charles Schwab Corp, Chubb LTD, CIT Group Inc., Citigroup Inc., Citizens Financial Group, Inc, CNO Financial Group Inc., Comerica Inc, Commerce Bancshares, Commonwealth Bk Aust, Computershare Limited, Cullen/Frost Bankers, Cushman & Wakefield PLC, Deutsche Boerse, DHC US, Discover Financial Services, Duke Realty Corp., East West Bancorp, Inc., EQT AB, Equitable Holdings Inc, Equity Residential, Euronext NV, Evercore Inc, Fidelity National Information Services, Fifth Third Bancorp, First Horizon National, First Republic Bank, Fiserv Inc., Fleetcor Technologies Inc, Franklin Resources Inc., Goldman Sachs Group Inc, H&R Block, Hargreaves Lansdown, Hartford Fin. Services Grp., Home Point Capital Inc, Huntington Bancshares, Intact Financial Corp, Invesco, Invitation Homes Inc, IOOF Holdings, Janus Henderson Group, JPMorgan Chase & Co, Julius Baer, KeyCorp, Kimco Realty Corp., KKR & CO. Inc, Laureate Education Inc, Lincoln National Corp, Link Administration Holdings Ltd, LoanDepot Inc, London Stock Exchange, LPL Financial Holdings Inc., M&T Bank Corp., Macerich Co, Macquarie Group Limited, Magellan Financial, Man Group, Manulife Financial Corp., MarketAxess Holdings Inc., Marsh & McLennan Cos, MasterCard Inc, MetLife Inc., Moody's Corp, MSCI Inc., Nat Aust Bank, New Senior Investment Group Inc, New York Community Bancorp, Inc, Nielsen Holdings NV, Northern Trust Corp., Partners Group, PayPal Holdings, Inc., Pendal Group Ltd, People's United Financial, Inc., Perpetual Ltd., Platinum Asset Management, PNC Financial Services, Primerica, Inc., Principal Financial Group, Progressive Corp, Prologis, Inc., Prudential Financial, Public Storage, QBE Insurance Group, Raymond James Financial Inc., Re/Max Holdings Inc, Regions Financial Corp, Reinsurance Group of America, RenaissanceRe, Republic Services Inc., Rocket Cos Inc, S&P Global Inc, Schroders, SEI Investments Company, Signature Bank, Simon Property Group Inc, Site Centers Corp, SL Green Realty Corporation, Spirit Realty Capital, SS&C Technologies Holdings, Inc., Standard Life Aberdeen PLC, State Street Corporation, STORE Capital Corp, Sun Life Financial Inc., SVB Financial Group, Synovus Financial Corp., T. Rowe Price Group, Inc., TCF Financial Corp., Terminix Global Holdings Inc, The Blackstone Group Inc, The Travelers Companies, Inc., Thomson Reuters Corp., Tradeweb Markets Inc, Truist Financial Corp, U.S. Bancorp, UDR, Inc., Unum Group, Ventas Inc, Verisk Analytics, Inc., Victory Capital Holdings Inc, Virtu Financial Inc, Virtus Investment Partners, Vornado Realty Trust, Voya Financial Inc, W.R. Berkley Corp., Waddell & Reed Financial Inc, Waste Connections Inc., Waste Management, Inc., Wells Fargo & Co., Welltower Inc., Western Union Co, Westpac Banking, WEX Inc, Willis Towers Watson PLC, WisdomTree Investments, Inc., Zions Bancorp.

Within the last 12 months, Morgan Stanley has provided or is providing investment banking services to, or has an investment banking client relationship with, the following company: 3i, ADT Inc, Affirm Holdings Inc, Aflac, Afterpay Ltd, Alliance Data Systems Corp, Allstate Corporation, Ally Financial Inc, American Assets Trust Inc., American Equity Investment Life Holding, American Express Company, American Homes 4 Rent, American Int'l Grp, Ameriprise Financial, Inc., AMP Ltd, ANZ Bank, Aon PLC, Apollo Global Management Inc, Aramark Holdings Corporation, Arch Capital Group Ltd., Ares Management Corp, Arthur J. Gallagher, Ashmore Group PLC, Assurant Inc., Athene Holding Ltd, Automatic Data Processing Inc, AvalonBay Communities Inc., Axis Capital Holdings, Bank of America, Bank of Queensland, Bendigo and Adelaide Bank Limited, Berkshire Hathaway Inc, BFF Bank SPA, BlackRock Inc., BNY Mellon, BOK Financial Corp, Boston Properties, Inc., Bright Horizons Family Solutions Inc, Brighthouse Financial Inc, Brightsphere Investment Group Inc., Broadstone Net Lease, Inc., Brown & Brown Inc., Cadence Bancorp, Capital One Financial Corporation, Carlyle Group Inc, Challenger Limited, Charles Schwab Corp, Chubb LTD, CIT Group Inc., Citigroup Inc., Citizens Financial Group, Inc, Clarivate Plc., CNO Financial Group Inc., Columbia Property Trust Inc, Comerica Inc, Commerce Bancshares, Commonwealth Bk Aust, Computershare Limited, Cullen/Frost Bankers, Cushman & Wakefield PLC, Deutsche Boerse, DHC US, Discover Financial Services, Duke Realty Corp., East West Bancorp, Inc., EastGroup Properties Inc., Equifax Inc, Equitable Holdings Inc, Equity Residential, Euronext NV, Evercore Inc, Everest Re Group, Ltd., Extra Space Storage Inc., FactSet Research Systems Inc., Fidelity National Information Services, Fifth Third Bancorp, First Horizon National, First Republic Bank, Fiserv Inc., Fleetcor Technologies Inc, Franklin Resources Inc., Gartner Inc., Global Payments Inc, Globe Life Inc, Goldman Sachs Group Inc, Hamilton Lane Inc., Hartford Fin. Services Grp., Healthcare Trust of America Inc, Healthpeak Properties Inc, Highwoods Properties, Home Point Capital Inc, Houlihan Lokey Inc, Hudson Pacific Properties, Huntington Bancshares, IHS Markit Ltd, Insurance Australia, Intact Financial Corp, Invesco, Invitation Homes Inc, IOOF Holdings, Janus Henderson Group, JPMorgan Chase & Co, Julius Baer, KeyCorp, Kimco Realty Corp., KKR & CO. Inc, Laureate Education Inc, Lazard Ltd, Lemonade Inc., Lincoln National Corp, Link Administration Holdings Ltd, LoanDepot Inc, London Stock Exchange, LPL Financial Holdings Inc., M&T Bank Corp., Macquarie Group Limited, Man Group, Manulife Financial Corp., MarketAxess Holdings Inc., Marsh & McLennan Cos, MasterCard Inc, MetLife Inc., Moelis & Co, Moody's Corp, MSCI Inc., Nat Aust Bank, National Retail Properties Inc, National Storage Affiliates Trust, New Senior Investment Group Inc, New York Community Bancorp, Inc, Nielsen Holdings NV, Northern Trust Corp., Office Properties Income Trust, Open Lending Corp., Paramount Group Inc., Partners Group, Paychex Inc, PayPal Holdings, Inc., Pendal Group Ltd, People's United Financial, Inc., Perpetual Ltd., Physicians Realty Trust, PNC Financial Services, Primerica, Inc., Principal Financial Group, Prologis, Inc., Prosperity Bancshares Inc, Prudential Financial, Public Storage, QBE Insurance Group, Raymond James Financial Inc., Re/Max Holdings Inc, Realty Income Corp, Regency Centers Corp, Regions Financial Corp, Reinsurance Group of America, RenaissanceRe, Repay Holdings Corporation., Republic Services Inc., RMR Group Inc, Rocket Cos Inc, Root Inc, S&P Global Inc, Santander Consumer USA Holdings Inc, Schroders, Shift4 Payments Inc., Signature Bank, Simon Property Group Inc, Site Centers Corp, SL Green Realty Corporation, Spirit Realty Capital, Square Inc, SS&C Technologies Holdings, Inc., Standard Life Aberdeen PLC, State Street Corporation, StepStone Group, STORE Capital Corp,

Disclosure Section (Cont.)

Stride Inc, Sun Life Financial Inc., Suncorp Group Ltd, SVB Financial Group, Synchrony Financial, Synovus Financial Corp., T. Rowe Price Group, Inc., TCF Financial Corp., Terminix Global Holdings Inc, The Blackstone Group Inc, The Travelers Companies, Inc., Thomson Reuters Corp., Tradeweb Markets Inc, TransUnion, Truist Financial Corp, U.S. Bancorp, UDR, Inc., Unum Group, Urban Edge Properties, Valley National Bancorp, Ventas Inc, Vereit Inc, Verisk Analytics, Inc., Verra Mobility Corp, Victory Capital Holdings Inc, Virtu Financial Inc, Virtus Investment Partners, Visa Inc., Vornado Realty Trust, Voya Financial Inc, W.R. Berkley Corp., Waddell & Reed Financial Inc, Waste Connections Inc., Waste Management, Inc., Watford Holdings Ltd., Webster Financial Corp, Wells Fargo & Co., Welltower Inc., Western Union Co, Westpac Banking, Willis Towers Watson PLC, WisdomTree Investments, Inc., Zions Bancorp.

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Within the last 12 months, an affiliate of Morgan Stanley & Co. LLC has received compensation for products and services other than investment banking services from Athene Holding Ltd.

An employee, director or consultant of Morgan Stanley is a director of Allstate Corporation. This person is not a research analyst or a member of a research analyst's household.

Morgan Stanley & Co. LLC makes a market in the securities of Affirm Holdings Inc, Aflac, Allstate Corporation, Ally Financial Inc, American Assets Trust Inc., American Equity Investment Life Holding, American Express Company, American Homes 4 Rent, American Int'l Grp, Ameriprise Financial, Inc., Aon PLC, Apollo Global Management Inc, Aramark Holdings Corporation, Arch Capital Group Ltd., Arthur J. Gallagher, Assurant Inc., Automatic Data Processing Inc, AvalonBay Communities Inc., Axis Capital Holdings, Bank of America, Bank OZK, BankUnited Inc, Berkshire Hathaway Inc, BNY Mellon, BOK Financial Corp, Boston Properties, Inc., Brightsphere Investment Group Inc., Brown & Brown Inc.,

Disclosure Section (Cont.)

Cadence Bancorp, Capital One Financial Corporation, Carlyle Group Inc, Charles Schwab Corp, Chubb LTD, Cintas Corp, Citigroup Inc., Citizens Financial Group, Inc, CNO Financial Group Inc., Columbia Property Trust Inc, Comerica Inc, Commerce Bancshares, DHC US, Discover Financial Services, Duke Realty Corp., East West Bancorp, Inc., EastGroup Properties Inc., Equifax Inc, Equitable Holdings Inc, Equity Residential, Evercore Inc, Evertec Inc, Extra Space Storage Inc., Fidelity National Information Services, Fifth Third Bancorp, First Horizon National, First Republic Bank, Fiserv Inc., Franklin Resources Inc., Gartner Inc., Global Payments Inc, Globe Life Inc, Goldman Sachs Group Inc, H&R Block, Hartford Fin. Services Grp., Healthcare Realty Trust Inc., Healthcare Trust of America Inc, Healthpeak Properties Inc, Highwoods Properties, Hudson Pacific Properties, Huntington Bancshares, Invesco, JPMorgan Chase & Co, KeyCorp, Kimco Realty Corp., KKR & CO. Inc, Laureate Education Inc, Lazard Ltd, Lincoln National Corp, LPL Financial Holdings Inc., M&T Bank Corp., Macerich Co, Manulife Financial Corp., Marsh & McLennan Cos, MasterCard Inc, MetLife Inc., Moelis & Co, Moody's Corp, National Retail Properties Inc, National Storage Affiliates Trust, New York Community Bancorp, Inc, Nielsen Holdings NV, Northern Trust Corp., Office Properties Income Trust, Paramount Group Inc., Paychex Inc, PayPal Holdings, Inc., People's United Financial, Inc., Physicians Realty Trust, PNC Financial Services, Principal Financial Group, Progressive Corp, Prologis, Inc., Prosperity Bancshares Inc, Prudential Financial, Public Storage, Q2 Holdings Inc, Raymond James Financial Inc., Re/Max Holdings Inc, Realty Income Corp, Regency Centers Corp, Regions Financial Corp, Republic Services Inc., RMR Group Inc, Root Inc, S&P Global Inc, Santander Consumer USA Holdings Inc, SEI Investments Company, Simon Property Group Inc, Site Centers Corp, SL Green Realty Corporation, Spirit Realty Capital, Square Inc, SS&C Technologies Holdings, Inc., State Street Corporation, STORE Capital Corp, Stride Inc, Sun Life Financial Inc., Synchrony Financial, Synovus Financial Corp., T. Rowe Price Group, Inc., TCF Financial Corp., Terminix Global Holdings Inc, The Blackstone Group Inc, The Travelers Companies, Inc., Thomson Reuters Corp., TransUnion, Truist Financial Corp, UDR, Inc., Unum Group, Urban Edge Properties, Valley National Bancorp, Ventas Inc, Vereit Inc, Verisk Analytics, Inc., Virtu Financial Inc, Virtus Investment Partners, Visa Inc., Vornado Realty Trust, Voya Financial Inc, W.R. Berkley Corp., Waddell & Reed Financial Inc, Waste Connections Inc., Waste Management, Inc., Webster Financial Corp, Wells Fargo & Co., Welltower Inc., Western Union Co, Westpac Banking, Willis Towers Watson PLC, WisdomTree Investments, Inc., Zions Bancorp.

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Global Stock Ratings Distribution

(as of March 31, 2021)

The Stock Ratings described below apply to Morgan Stanley's Fundamental Equity Research and do not apply to Debt Research produced by the Firm.

Disclosure Section (Cont.)

For disclosure purposes only (in accordance with FINRA requirements), we include the category headings of Buy, Hold, and Sell alongside our ratings of Overweight, Equal-weight, Not-Rated and Underweight. Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.

	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
STOCK RATING CATEGORY	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MISC
Overweight/Buy	1510	43%	417	47%	28%	666	43%
Equal-weight/Hold	1435	41%	377	42%	26%	658	43%
Not-Rated/Hold	4	0%	2	0%	50%	4	0%
Underweight/Sell	527	15%	95	11%	18%	210	14%
TOTAL	3,476		891			1538	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

Analyst Stock Ratings

Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Disclosure Section (Cont.)

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

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Each Morgan Stanley research report is reviewed and approved on behalf of Morgan Stanley Smith Barney LLC and E*TRADE Securities LLC. This review and approval is conducted by the same person who reviews the research report on behalf of Morgan Stanley. This could create a conflict of interest.

Other Important Disclosures

Morgan Stanley & Co. International PLC and its affiliates have a significant financial interest in the debt securities of ADT Inc, Aflac, Afterpay Ltd, Alliance Data Systems Corp, Allstate Corporation, Ally Financial Inc, American Express Company, American Int'l Grp, AMUNDI SA, ANZ Bank, Aon PLC, Assurant Inc., Athene Holding Ltd, Automatic Data Processing Inc, AvalonBay Communities Inc., Bank of America, Berkshire Hathaway Inc, BlackRock Inc., BNY Mellon, Boston Properties, Inc., Brighthouse Financial Inc, Capital One Financial Corporation, Charles Schwab Corp, Chubb LTD, CIT Group Inc., Citigroup Inc., Citizens Financial Group, Inc, Commonwealth Bk Aust, Deutsche Boerse, DHC US, EQT AB, Equitable Holdings Inc, Fidelity National Information Services, First Republic Bank, Fiserv Inc., Goldman Sachs Group Inc, Hartford Fin. Services Grp., Healthpeak Properties Inc, IHS Markit Ltd, JPMorgan Chase & Co, Kimco Realty Corp., Lincoln National Corp, London Stock Exchange, M&T Bank Corp., Macquarie Group Limited, Manulife Financial Corp., Marsh & McLennan Cos, MasterCard Inc, MetLife Inc., MSCI Inc., Nat Aust Bank, National Retail Properties Inc, New York Community Bancorp, Inc, Office Properties Income Trust, PayPal Holdings, Inc., PNC Financial Services, Principal Financial Group, Progressive Corp, Prudential Financial, Public Storage, Q2 Holdings Inc, QBE Insurance Group, Realty Income Corp, Reinsurance Group of America, Republic Services Inc., Root Inc, S&P Global Inc, Site Centers Corp, SL Green Realty Corporation, Square Inc, State Street Corporation, STORE Capital Corp, Stride Inc, SVB Financial Group, The Travelers Companies, Inc., Thomson Reuters Corp., Truist Financial Corp, U.S. Bancorp, UDR, Inc., Unum Group, Verisk Analytics, Inc., Verra Mobility Corp, Victory Capital Holdings Inc, Virtus Investment Partners, Visa Inc., Waste Management, Inc., Wells Fargo & Co., Welltower Inc., Western Union Co, Westpac Banking, WEX Inc, Zions Bancorp.

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Disclosure Section (Cont.)

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INDUSTRY COVERAGE: Large Cap Banks & Consumer Finance

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/27/2021)
Betsy L. Graseck, CFA		
Ally Financial Inc (ALLY.N)	O (05/28/2020)	$50.22
American Express Company (AXP.N)	O (04/25/2019)	$150.36
Bank of America (BAC.N)	U (11/30/2020)	$39.88
BNY Mellon (BK.N)	E (11/30/2020)	$48.55
Capital One Financial Corporation (COF.N)	O (11/30/2020)	$138.95
Citigroup Inc. (C.N)	O (11/14/2016)	$72.99
Discover Financial Services (DFS.N)	E (11/30/2020)	$107.76
Goldman Sachs Group Inc (GS.N)	U (11/30/2020)	$346.63
JPMorgan Chase & Co (JPM.N)	U (11/30/2020)	$151.25
Northern Trust Corp. (NTRS.O)	E (06/08/2020)	$111.18
PNC Financial Services (PNC.N)	E (07/25/2013)	$183.58
Regions Financial Corp (RF.N)	O (11/30/2020)	$21.23
Santander Consumer USA Holdings Inc (SC.N)	E (12/20/2016)	$32.49
State Street Corporation (STT.N)	O (11/30/2020)	$82.24
Synchrony Financial (SYF.N)	O (11/30/2020)	$40.73
Truist Financial Corp (TFC.N)	E (01/07/2018)	$58.30
U.S. Bancorp (USB.N)	E (11/30/2020)	$58.32
Wells Fargo & Co. (WFC.N)	O (11/30/2020)	$45.09
Jeffrey Adelson, CFA		
Alliance Data Systems Corp (ADS.N)	O (10/13/2020)	$105.46
Ryan Kenny		
SEI Investments Company (SEIC.O)	E (11/30/2020)	$60.35

Stock Ratings are subject to change. Please see latest research for each company.
* Historical prices are not split adjusted.

INDUSTRY COVERAGE: Business & Education Services

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/27/2021)
Javier Martinez de Olcoz Cerdan		
Laureate Education Inc (LAUR.O)	++	$12.00
Jeffrey D Goldstein, CFA		
H&R Block (HRB.N)	E (06/27/2019)	$22.31
Republic Services Inc. (RSG.N)	E (10/13/2020)	$104.90
Stride Inc (LRN.N)	E (02/01/2021)	$30.37
Waste Connections Inc. (WCN.N)	O (10/13/2020)	$117.02
Waste Management, Inc. (WM.N)	E (10/13/2020)	$135.06
Toni Kaplan		
ADT Inc (ADT.N)	E (05/13/2019)	$9.52
Advantage Solutions Inc (ADV.O)	E (04/01/2021)	$12.79
Aramark Holdings Corporation (ARMK.N)	E (08/10/2016)	$39.87
Bright Horizons Family Solutions Inc (BFAM.N)	U (04/07/2021)	$156.41
Cintas Corp (CTAS.O)	E (01/06/2021)	$350.15
Clarivate Plc. (CLVT.N)	O (03/08/2021)	$26.37
Equifax Inc (EFX.N)	E (01/18/2017)	$234.34
FactSet Research Systems Inc. (FDS.N)	U (07/16/2019)	$342.16
Gartner Inc. (IT.N)	O (01/06/2021)	$198.13
IHS Markit Ltd (INFO.N)	O (03/18/2021)	$106.07
Moody's Corp (MCO.N)	E (01/07/2020)	$326.40
MSCI Inc. (MSCI.N)	E (03/24/2014)	$487.61
Nielsen Holdings NV (NLSN.N)	O (12/14/2016)	$25.53
S&P Global Inc (SPGI.N)	O (03/18/2021)	$384.14
Terminix Global Holdings Inc (TMX.N)	E (08/07/2020)	$48.95
Thomson Reuters Corp. (TRI.N)	E (02/02/2021)	$92.77
TransUnion (TRU.N)	O (01/07/2020)	$104.99
Verisk Analytics, Inc. (VRSK.O)	O (01/07/2020)	$187.20

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Disclosure Section (Cont.)

INDUSTRY COVERAGE: Payments and Processing

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/27/2021)
James E Faucette		
Affirm Holdings Inc (AFRM.O)	O (02/08/2021)	$76.37
Automatic Data Processing Inc (ADP.O)	E (02/25/2021)	$195.89
Evertec Inc (EVTC.N)	U (03/09/2021)	$40.46
Fidelity National Information Services (FIS.N)	E (12/16/2019)	$152.81
Fiserv Inc. (FISV.O)	E (12/16/2019)	$121.66
Fleetcor Technologies Inc (FLT.N)	E (02/25/2021)	$289.78
Global Payments Inc (GPN.N)	E (10/03/2014)	$216.50
Home Point Capital Inc (HMPT.O)	E (02/23/2021)	$9.63
LoanDepot Inc (LDI.N)	E (03/09/2021)	$21.34
MasterCard Inc (MA.N)	O (03/28/2016)	$389.07
Open Lending Corp. (LPRO.O)	E (04/12/2021)	$38.24
Paychex Inc (PAYX.O)	E (02/25/2021)	$99.12
PayPal Holdings, Inc. (PYPL.O)	O (10/11/2017)	$268.82
Q2 Holdings Inc (QTWO.N)	E (08/10/2020)	$106.39
Repay Holdings Corporation. (RPAY.O)	E (10/05/2020)	$23.52
Rocket Cos Inc (RKT.N)	E (08/31/2020)	$22.90
Shift4 Payments Inc. (FOUR.N)	E (06/30/2020)	$97.35
Square Inc (SQ.N)	E (03/28/2016)	$253.79
SS&C Technologies Holdings, Inc. (SSNC.O)	E (10/28/2019)	$74.97
Verra Mobility Corp (VRRM.O)	O (10/28/2019)	$13.70
Visa Inc. (V.N)	O (03/28/2016)	$229.91
Western Union Co (WU.N)	U (02/02/2015)	$26.20
WEX Inc (WEX.N)	E (02/25/2021)	$225.83

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INDUSTRY COVERAGE: Insurance - Life/Annuity

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/27/2021)
Bob Huang		
American Equity Investment Life Holding (AEL.N)	E (01/28/2021)	$31.65
Primerica, Inc. (PRI.N)	O (09/15/2020)	$161.59
Nigel Dally		
Aflac (AFL.N)	O (01/12/2021)	$53.53
Ameriprise Financial, Inc. (AMP.N)	E (01/07/2020)	$256.53
Athene Holding Ltd (ATH.N)	O (11/02/2020)	$59.54
Brighthouse Financial Inc (BHF.O)	E (08/14/2017)	$46.35
CNO Financial Group Inc. (CNO.N)	E (05/17/2018)	$25.74
Equitable Holdings Inc (EQH.N)	O (06/04/2018)	$34.43
Globe Life Inc (GL.N)	U (08/13/2015)	$102.70
Lincoln National Corp (LNC.N)	O (01/07/2020)	$64.55
Manulife Financial Corp. (MFC.TO)	E (11/13/2014)	C$26.83
MetLife Inc. (MET.N)	O (01/07/2020)	$63.36
Principal Financial Group (PFG.O)	E (06/09/2014)	$62.90
Prudential Financial (PRU.N)	E (12/13/2016)	$99.30
Reinsurance Group of America (RGA.N)	U (08/11/2014)	$130.96
Sun Life Financial Inc. (SLF.TO)	E (05/25/2012)	C$66.28
Unum Group (UNM.N)	E (02/17/2010)	$28.78
Voya Financial Inc (VOYA.N)	O (11/11/2015)	$67.89

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Disclosure Section (Cont.)

INDUSTRY COVERAGE: Real Estate Investment Trusts

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/27/2021)
Richard Hill		
American Assets Trust Inc. (AAT.N)	E (05/18/2020)	$34.61
American Homes 4 Rent (AMH.N)	E (11/15/2018)	$36.03
AvalonBay Communities Inc. (AVB.N)	E (12/10/2013)	$195.31
Equity Residential (EQR.N)	E (12/12/2016)	$74.38
Essex Property Trust, Inc. (ESS.N)	E (04/01/2020)	$297.04
Invitation Homes Inc (INVH.N)	O (08/11/2020)	$33.91
Kimco Realty Corp. (KIM.N)	O (09/14/2020)	$20.76
Macerich Co (MAC.N)	U (09/14/2020)	$14.08
Regency Centers Corp (REG.O)	E (12/17/2019)	$62.97
Retail Value Inc (RVI.N)	O (01/06/2021)	$19.35
Simon Property Group Inc (SPG.N)	O (02/11/2021)	$122.36
Site Centers Corp (SITC.N)	E (04/27/2020)	$14.92
UDR, Inc. (UDR.N)	O (11/20/2020)	$46.80
Urban Edge Properties (UE.N)	U (12/17/2019)	$18.78
Ronald Kamdem, CFA		
Broadstone Net Lease, Inc. (BNL.N)	E (04/15/2021)	$19.55
Extra Space Storage Inc. (EXR.N)	U (09/16/2019)	$147.26
National Retail Properties Inc (NNN.N)	O (04/15/2021)	$47.09
National Storage Affiliates Trust (NSA.N)	E (08/07/2018)	$44.20
Public Storage (PSA.N)	E (01/22/2021)	$275.06
Realty Income Corp (O.N)	O (05/04/2020)	$68.86
Spirit Realty Capital (SRC.N)	E (05/04/2020)	$46.08
STORE Capital Corp (STOR.N)	E (05/04/2020)	$35.83
Vereit Inc (VER.N)	E (08/02/2019)	$41.32
Vikram Malhotra		
Boston Properties, Inc. (BXP.N)	E (09/10/2019)	$108.10
Columbia Property Trust Inc (CXP.N)	++	$18.03
DHC US (DHC.O)	E (09/05/2019)	$4.45
Duke Realty Corp. (DRE.N)	E (10/07/2019)	$45.08
EastGroup Properties Inc. (EGP.N)	E (04/12/2017)	$156.33
Healthcare Realty Trust Inc. (HR.N)	E (08/15/2018)	$31.66
Healthcare Trust of America Inc (HTA.N)	E (08/15/2018)	$28.76
Healthpeak Properties Inc (PEAK.N)	E (03/20/2017)	$33.92
Highwoods Properties (HIW.N)	O (06/24/2020)	$44.01
Hudson Pacific Properties (HPP.N)	U (04/15/2021)	$27.93
New Senior Investment Group Inc (SNR.N)	E (10/29/2018)	$6.60
Office Properties Income Trust (OPI.O)	U (12/13/2019)	$27.80
Paramount Group Inc. (PGRE.N)	O (10/10/2019)	$10.38
Physicians Realty Trust (DOC.N)	O (03/15/2021)	$18.71
Prologis, Inc. (PLD.N)	O (02/12/2020)	$114.85
SL Green Realty Corporation (SLG.N)	E (05/28/2020)	$74.01
Ventas Inc (VTR.N)	E (03/27/2019)	$55.65
Vornado Realty Trust (VNO.N)	U (05/28/2020)	$45.89
Welltower Inc. (WELL.N)	O (03/20/2017)	$76.47

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INDUSTRY COVERAGE: Insurance - Property & Casualty

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/27/2021)
Michael W. Phillips		
Allstate Corporation (ALL.N)	E (07/06/2010)	$125.84
American Int'l Grp (AIG.N)	O (05/16/2017)	$48.44
Aon PLC (AON.N)	E (03/06/2019)	$233.79
Arch Capital Group Ltd. (ACGL.O)	++	$40.49
Arthur J. Gallagher (AJG.N)	E (05/31/2012)	$138.59
Assurant Inc. (AIZ.N)	O (07/10/2018)	$156.34
Axis Capital Holdings (AXS.N)	E (08/14/2015)	$54.69
Berkshire Hathaway Inc (BRKb.N)	E (03/20/2017)	$273.65
Brown & Brown Inc. (BRO.N)	E (12/05/2019)	$51.87
Chubb LTD (CB.N)	++	$166.60
Everest Re Group, Ltd. (RE.N)	O (03/24/2021)	$267.05
Hartford Fin. Services Grp. (HIG.N)	++	$69.50
Intact Financial Corp (IFC.TO)	++	C$162.53
Lemonade Inc. (LMND.N)	E (07/27/2020)	$97.17
Marsh & McLennan Cos (MMC.N)	E (02/09/2015)	$132.21
Progressive Corp (PGR.N)	E (10/15/2020)	$99.91
RenaissanceRe (RNR.N)	E (03/09/2015)	$172.59
Root Inc (ROOT.O)	E (11/23/2020)	$11.22
The Travelers Companies, Inc. (TRV.N)	U (01/05/2017)	$155.20
W.R. Berkley Corp. (WRB.N)	E (01/21/2016)	$80.57
Watford Holdings Ltd. (WTRE.O)	++	$34.86
Willis Towers Watson PLC (WLTW.O)	E (02/14/2020)	$236.25

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Disclosure Section (Cont.)

INDUSTRY COVERAGE: Midcap Banks

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/27/2021)
Ken A Zerbe, CFA		
Bank OZK (OZK.O)	E (10/19/2018)	$41.17
BankUnited Inc (BKU.N)	E (09/18/2018)	$46.38
BOK Financial Corp (BOKF.O)	E (06/20/2011)	$88.00
Cadence Bancorp (CADE.N)	E (09/25/2018)	$22.08
CIT Group Inc. (CIT.N)	++	$54.49
Citizens Financial Group, Inc (CFG.N)	O (11/03/2014)	$46.10
Comerica Inc (CMA.N)	E (11/26/2019)	$71.74
Commerce Bancshares (CBSH.O)	U (09/20/2016)	$77.96
Cullen/Frost Bankers (CFR.N)	U (11/12/2018)	$117.85
East West Bancorp, Inc. (EWBC.O)	O (07/01/2019)	$77.41
Fifth Third Bancorp (FITB.O)	O (09/25/2020)	$39.25
First Horizon National (FHN.N)	E (08/17/2020)	$18.33
First Republic Bank (FRC.N)	E (11/16/2016)	$181.97
Huntington Bancshares (HBAN.O)	E (12/10/2015)	$15.20
KeyCorp (KEY.N)	E (04/07/2020)	$21.45
M&T Bank Corp. (MTB.N)	E (04/04/2011)	$156.78
New York Community Bancorp, Inc (NYCB.N)	++	$12.74
People's United Financial, Inc. (PBCT.O)	E (06/05/2017)	$18.26
Prosperity Bancshares Inc (PB.N)	E (06/05/2017)	$77.29
Signature Bank (SBNY.O)	O (07/01/2019)	$251.85
SVB Financial Group (SIVB.O)	E (12/07/2020)	$575.90
Synovus Financial Corp. (SNV.N)	O (11/12/2018)	$47.10
TCF Financial Corp. (TCF.O)	E (08/16/2019)	$45.16
Valley National Bancorp (VLY.O)	E (08/07/2012)	$14.14
Webster Financial Corp (WBS.N)	E (07/01/2019)	$54.39
Zions Bancorp (ZION.O)	E (11/16/2016)	$55.15

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INDUSTRY COVERAGE: Real Estate Services

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/27/2021)
Ronald Kamdem, CFA		
RMR Group Inc (RMR.O)	E (10/21/2019)	$39.47
Vikram Malhotra		
Cushman & Wakefield PLC (CWK.N)	O (08/27/2018)	$16.55
Re/Max Holdings Inc (RMAX.N)	O (11/19/2018)	$36.09

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INDUSTRY COVERAGE: Brokers & Asset Managers

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/27/2021)
Michael J. Cyprys, CFA, CPA		
Apollo Global Management Inc (APO.N)	O (11/06/2020)	$55.17
Ares Management Corp (ARES.N)	++	$55.92
BlackRock Inc. (BLK.N)	O (09/18/2015)	$820.51
Brightsphere Investment Group Inc. (BSIG.N)	O (04/08/2021)	$23.42
Carlyle Group Inc (CG.O)	E (11/14/2018)	$42.04
Charles Schwab Corp (SCHW.N)	O (09/26/2016)	$69.64
Franklin Resources Inc. (BEN.N)	U (09/03/2020)	$29.82
Hamilton Lane Inc. (HLNE.O)	E (01/26/2021)	$93.63
Invesco (IVZ.N)	E (01/03/2018)	$26.46
KKR & CO. Inc (KKR.N)	E (02/17/2016)	$56.64
LPL Financial Holdings Inc. (LPLA.O)	O (06/08/2020)	$151.32
MarketAxess Holdings Inc. (MKTX.O)	E (12/21/2020)	$495.65
StepStone Group (STEP.O)	O (10/12/2020)	$33.46
T. Rowe Price Group, Inc. (TROW.O)	E (10/05/2017)	$178.88
The Blackstone Group Inc (BX.N)	O (12/15/2014)	$88.59
Tradeweb Markets Inc (TW.O)	O (03/02/2021)	$80.19
Victory Capital Holdings Inc (VCTR.O)	U (04/08/2020)	$28.29
Virtu Financial Inc (VIRT.O)	U (01/11/2021)	$30.84
Virtus Investment Partners (VRTS.O)	E (06/01/2017)	$260.68
Waddell & Reed Financial Inc (WDR.N)	E (12/04/2020)	$24.99
WisdomTree Investments, Inc. (WETF.O)	E (04/08/2021)	$6.61

Stock Ratings are subject to change. Please see latest research for each company.
* Historical prices are not split adjusted.

Disclosure Section (Cont.)

INDUSTRY COVERAGE: Diversified Financials

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/27/2021)
Antonio Reale		
BFF Bank SPA (BFF.MI)	O (06/25/2020)	€7.39
Bruce Hamilton		
AMUNDI SA (AMUN.PA)	O (08/15/2018)	€73.35
Ashmore Group PLC (ASHM.L)	E (04/01/2020)	392p
Deutsche Boerse (DB1Gn.DE)	E (04/01/2020)	€144.10
DWS Group GmbH & Co KgaA (DWSG.DE)	O (11/15/2019)	€37.64
EQT AB (EQTAB.ST)	O (02/02/2021)	SKr 280.50
Euronext NV (ENX.PA)	++	€85.20
London Stock Exchange (LSEG.L)	++	7,478p
Man Group (EMG.L)	O (04/01/2020)	161p
Partners Group (PGHN.S)	E (02/02/2021)	SFr 1,303.00
Schroders (SDR.L)	E (02/26/2021)	3,554p
Standard Life Aberdeen PLC (SLA.L)	E (10/09/2020)	274p
Izabel Dobreva		
Julius Baer (BAER.S)	O (02/10/2020)	SFr 57.20
Shamoli Ravishanker, CFA		
3i (III.L)	O (08/11/2020)	1,251p
Hargreaves Lansdown (HRGV.L)	U (12/04/2018)	1,650p
Teboho Mosoeu		
JSE Ltd (JSEJ.J)	E (04/14/2019)	ZAc 11,800

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INDUSTRY COVERAGE: Midcap Advisors

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/27/2021)
Manan Gosalia		
Evercore Inc (EVR.N)	O (11/20/2019)	$141.93
Houlihan Lokey Inc (HLI.N)	U (12/13/2020)	$69.19
Lazard Ltd (LAZ.N)	O (04/07/2021)	$45.94
Moelis & Co (MC.N)	E (06/21/2018)	$57.08
Raymond James Financial Inc. (RJF.N)	O (06/08/2020)	$130.63

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INDUSTRY COVERAGE: Australia Financials

COMPANY (TICKER)	RATING (AS OF)	PRICE* (04/28/2021)
Andrei Stadnik, FIAA		
Afterpay Ltd (APT.AX)	O (07/08/2020)	A$116.42
AMP Ltd (AMP.AX)	++	A$1.10
ASX Limited (ASX.AX)	E (01/25/2021)	A$72.86
Challenger Limited (CGF.AX)	E (01/31/2019)	A$5.04
Computershare Limited (CPU.AX)	O (06/16/2020)	A$14.25
Insurance Australia (IAG.AX)	E (11/23/2020)	A$4.87
IOOF Holdings (IFL.AX)	++	A$3.59
Janus Henderson Group (JHG.AX)	E (10/21/2020)	A$43.95
Link Administration Holdings Ltd (LNK.AX)	++	A$4.95
Macquarie Group Limited (MQG.AX)	O (06/19/2018)	A$160.88
Magellan Financial (MFG.AX)	U (06/27/2019)	A$48.54
Pendal Group Ltd (PDL.AX)	O (06/26/2015)	A$7.68
Perpetual Ltd. (PPT.AX)	O (02/20/2020)	A$35.19
Platinum Asset Management (PTM.AX)	U (01/14/2019)	A$4.76
QBE Insurance Group (QBE.AX)	O (02/26/2015)	A$9.52
Suncorp Group Ltd (SUN.AX)	E (08/24/2020)	A$10.49
Richard E Wiles		
ANZ Bank (ANZ.AX)	O (02/03/2020)	A$29.10
Bank of Queensland (BOQ.AX)	O (04/20/2021)	A$9.19
Bendigo and Adelaide Bank Limited (BEN.AX)	U (07/27/2017)	A$10.46
Commonwealth Bk Aust (CBA.AX)	U (08/31/2016)	A$90.21
Nat Aust Bank (NAB.AX)	E (01/21/2021)	A$26.91
Westpac Banking (WBC.AX)	O (11/17/2020)	A$25.30

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