

October 18, 2022 04:01 AM GMT

Payments and Processing | North America

3Q22 Processor Preview: FIS, FISV, GPN

Though we remain EW, we acknowledge that near trough multiples still incorporate significant pessimism and a stable earnings environment could drive a NT bounce. We still believe M&A/R&D is the best strategy to defend share while the recent VC funding decline could improve competitive dynamics.

WHAT'S CHANGED	Fidelity National Information Services (FIS.N)	From	To
	Price Target		\$100.00
Fiserv Inc. (FISV.O)	Price Target	\$106.00	\$107.00
	Global Payments Inc (GPN.N)	Price Target	\$141.00

Remain EW, but still see glasses half full with deal stocks. While the deal stocks continue to trade near trough multiples, likely due to volume growth not consistently outpacing the networks along with macro headwinds like a stronger dollar, rising rates, and recession risk weighing on EPS, we see near-term upside at current valuation levels. We think outperformance could result from a still stable underlying consumer, the resilience of banking/issuing segments, and less capital coming into the space. We remain EW, however, as longer term, we expect a sustained re-rating at FIS, FISV, and GPN to require material M&A/increased investment to combat increased industry competition.

Underlying consumer spend likely to remain strong in 3Q, with growth relative to the networks most relevant for the deal stocks. US consumer spending appears to have held up generally well in 3Q, with banks we track including JPM, WFC, USB, and C (all covered by Betsy Graseck) reporting average 10.6% growth in 3Q (12.3% in 2Q), which compares to the 11% US volume growth V reported in its intraquarter update through the end of August. While inflation has been a tailwind to consumer spending and the networks in general, we would expect to see less of a benefit at the merchant acquirers due to a larger share of revenue based on transactions rather than volumes. In recent quarters, volume growth at FISV and FIS have lagged that of the card networks by 5-7 percentage points, while GPN grew generally in-line, and we will be watching for any material changes in these trajectories as spending patterns shift. Within their respective merchant businesses, in 3Q we model 4.5% growth at FIS, 10.3% growth at FISV, and 8.9% growth at GPN.

While VC funding has been elevated since 2021, it's trending down in recent qtrs, which historically has driven outperformance in our fintech space. While competitive investment has been multiples higher in recent years, we think it's

MORGAN STANLEY & CO. LLC

James E Faucette
EQUITY ANALYST
James.Faucette@morganstanley.com +1 212 296-5771

Meryl R Thomas, CFA
RESEARCH ASSOCIATE
Meryl.Thomas@morganstanley.com +1 212 761-0774

Jeffrey D Goldstein, CFA
EQUITY ANALYST
Jeff.D.Goldstein@morganstanley.com +1 212 761-1197

Sandy Beatty, CFA
RESEARCH ASSOCIATE
Sandy.Beatty@morganstanley.com +1 212 761-5777

Jonathan Y Lee
EQUITY ANALYST
Jonathan.Y.Lee@morganstanley.com +1 212 761-9499

Michael N Infante
RESEARCH ASSOCIATE
Michael.Infante@morganstanley.com +1 212 761-4631

Elizabeth Hernandez
RESEARCH ASSOCIATE
Elizabeth.Hernandez@morganstanley.com +1 212 761-1787

Payments and Processing

North America

IndustryView

Attractive

Cash your FinTech Check. Listen in to the previous episode of our FinTech podcast, *The FinTech Check*, where James hosts Brian Nowak, lead U.S. Internet Analyst at Morgan Stanley, and discusses near- and medium-term e-commerce expectations, the importance of grocery as a potential upside catalyst, and the impact to V / MA / PYPL / GLBE. [Listen here.](#)

Morgan Stanley does and seeks to do business with companies covered in Morgan Stanley Research. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of Morgan Stanley Research. Investors should consider Morgan Stanley Research as only a single factor in making their investment decision.

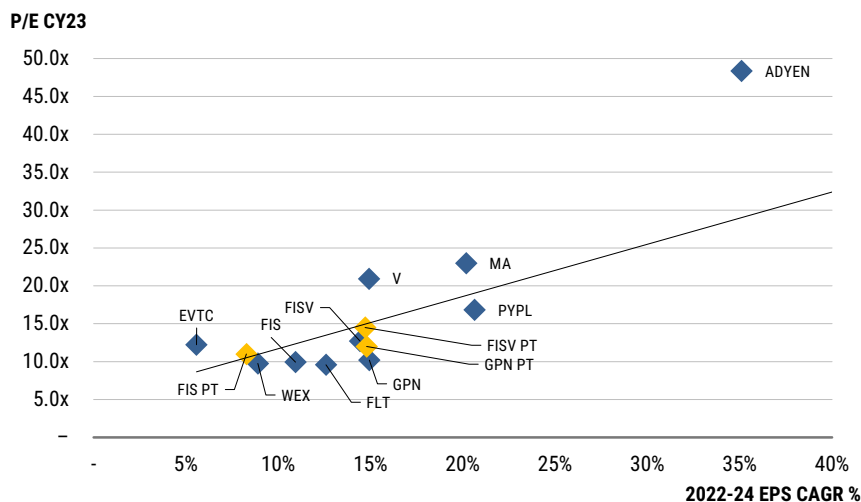
For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report.

important to call out it has been on a downtrend since 1Q22, with 3Q22 levels of VC funding now in-line with that of the same period in 2019. If factors like rising rates and economic risk drive a sustained downturn in VC spending, this can be a positive for our fintech stocks, as they would benefit from reduced industry competition. This is especially true for the merchant acquiring industry, which has seen the largest source of venture and public deal activity in recent periods (see our recent report, *VC Funding and the Impact on Fintech Stocks*, for more information).

Estimate changes: We're lowering our '22/'23 adj. EPS by 0.4%/3.9% at FIS, 0.3%/1.2% at FISV, and 1.4%/2.4% at GPN. A strong USD weighs on revenue at each company with international revenue making up 20% of the mix at FIS, 14% at FISV, and 21% at GPN. Higher interest rates impact both FIS and FISV, with FIS the most impacted given ~40% of its debt is floating rate and \$3B of its fixed rate debt (which pays very low rates of 0.375%-1.25% currently) needs to be refinanced in the next 3-9 months. At FIS specifically, we think investors want a full handle on next year's interest expense, which we currently model at \$611M (\$481M prior) before fully underwriting shares. Given the stable consumer spending environment, our underlying revenue growth metrics are largely unchanged across the three processors.

We remain EW on FISV, FIS, and GPN, as we lower our FIS PT to \$85 (\$100 prior) and GPN PT to \$128 (\$141 prior), with our FISV PT of \$107 largely unchanged (\$106 prior). Our P/E multiples of 14.5x at FISV, 12.5x at GPN, and 11x are above current trading multiples (13x at FISV, 10x at GPN/FIS), but largely in-line to the regression implied multiples relative to peers. With the deal stocks trading near historically low valuations likely given ongoing macro risks, we think a moderate earnings beat (or even closer performance to the networks) could help drive a post-print bounce. We would note that a more meaningful re-rating in shares will likely first require multiple expansion at V/MA. This would symbolize an abatement of cyclical fears, with investors typically preferring the networks across the larger payment space. Longer term, we also think sustained performance will depend on higher M&A/investment to better fend off increasing industry competition.

Exhibit 1: FIS/FISV/GPN Valuation vs. Comps



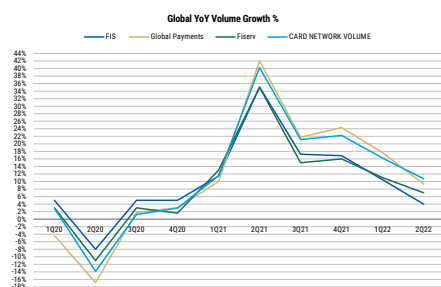
Source: Refinitiv, Morgan Stanley Research.

Analysis

What to watch in 3Q results: We believe investors are waiting to see if and when the merchant acquirers can consistently deliver volume growth that's above that of the overall payments industry (i.e. that of the card networks), so as to ease concerns around share loss and competition. In recent quarters, volume growth at FISV and FIS have lagged that of the card networks (V, MA, AXP, and DFS) by 5-7 percentage points, while GPN grew generally in-line (see [Exhibit 1](#)). In our view, slower growth is probably due to a combination of both gradual share loss and varying exposure to geographies and verticals. GPN has benefitted from faster growth/recovery in credit spending in discretionary verticals (where it's more exposed), but isn't seeing any of the benefit from the return of travel (to which it has little exposure). *AXP and DFS are covered by Betsy Graseck.*

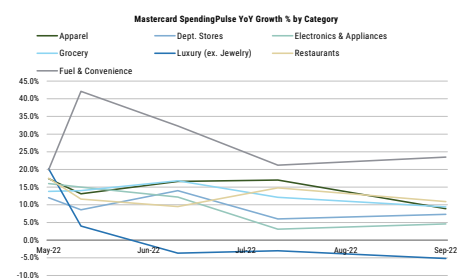
Trends we're watching in US spending: US consumer spending appears to have held up generally well in 3Q, with banks we track including JPM, WFC, USB, and C reporting average 10.6% growth in 3Q. In its intra-quarter update, V reported 11% US volume growth through the end of August. Based on MA's monthly Spending Pulse data, retail categories most relevant for GPN and FISV such as Restaurants and Apparel appear to be holding up relatively well in 3Q vs. 2Q, while total retail spending accelerated to nearly 10% (on average) in 3Q from 6% in 2Q. Meanwhile, growth within in department stores, an important category for FIS, slowed in 3Q to 9% from 12% ([Exhibit 3](#)). While inflation could be a tailwind to revenues as it increases volumes processed, it'll likely be less of a benefit to the processors than it is for V/MA due to pricing structures. For example, half of FIS' merchant volumes, specifically those related more to discretionary purchases, are priced on volume, while the other half related to nondiscretionary volumes (where inflation has been higher) is priced on number of transactions. Additionally, even as fuel & convenience spending continues to be up double digits on high inflation, we think GPN, which has considerable fuel exposure, earns fuel-related revenues on transactions rather than volumes.

Exhibit 2: FIS and FISV volumes growing below network global volume growth



Source: Company Filings, Morgan Stanley Research Estimates. Note: Card networks include Visa, Mastercard, American Express, Discover. FISV volume growth for 2020 is based on MS assumptions, while 2021-22 is reported growth. FIS' 2Q22 growth is MS estimate.

Exhibit 3: Spending Pulse shows slower average spend growth in department stores and restaurants in 3Q



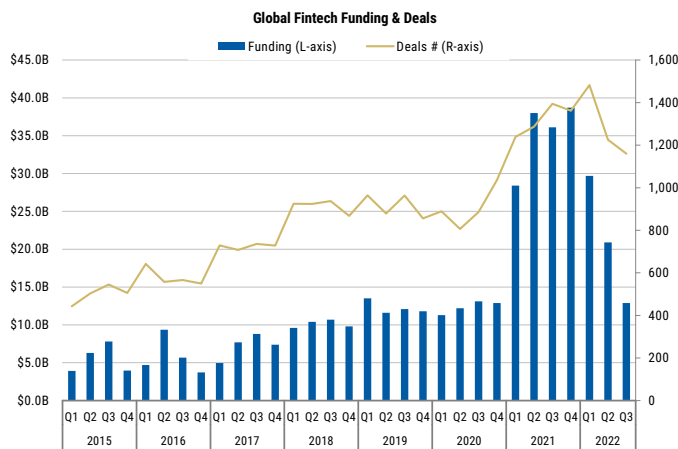
Source: Mastercard Spending Pulse, Morgan Stanley Research

Competition flooded with new investor capital...: Venture capital funding to fintechs broadly totaled \$102B in the 12 months ending September (CB Insights), and merchant

processing/acquiring has been the largest source of venture and public deal activity during that period, with nearly half the total funds raised going to that category (The Nilson Report) (see Exhibit 4 and Exhibit 5). We've consistently said that we don't expect the incremental capital will lead to higher overall industry growth, implying lower returns. As such, we think the best way for incumbents like FISV to ensure future growth is through M&A that ultimately proves transformative by increasing exposure to faster-growth areas of the market. Over the last couple years, the three processors each favored using cash for larger increases in share buybacks vs. M&A/investment, though FISV and GPN have encouragingly been increasing the pace/size of M&A in recent quarters. With falling valuations, the companies may be tempted to keep aggressively buying their own shares, but we still think that looking to add capabilities/high-growth exposure is a better strategic use of capital.

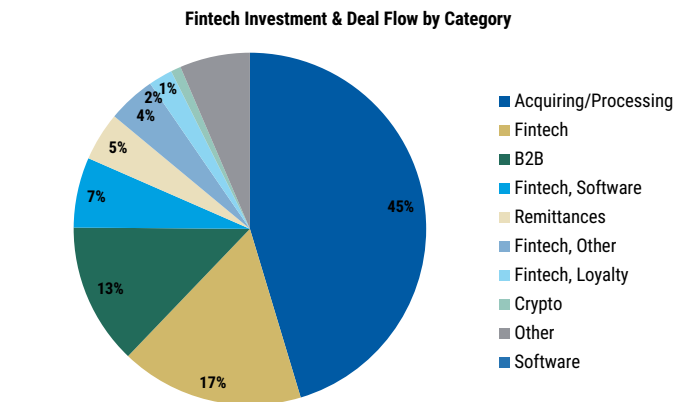
...But pace of funding coming down: While competitive investment has been multiples higher in recent years, we think it's important to call out it has been on a downtrend since 1Q22, with 3Q22 levels of VC funding in-line with that of the same period in 2019. We acknowledge that there could be near-term cyclical headwinds that could bring VC funding down in the coming quarters/years, such as higher rates and the threat of a possible recession. If these macro factors drive a sustained reduction in VC funding, it could reduce competitive threat for the acquirers and provide a compelling opportunity to invest in the public fintech space, following a prolonged period of recent weakness. As we noted in our report, *VC Funding and the Impact on Fintech Stocks*, based on our quant analysis with AlphaWise, fintech stocks fare better in periods of lower VC funding.

Exhibit 4: VC capital to fintechs significantly elevated since 1Q21



Source: CB Insights, Morgan Stanley Research

Exhibit 5: Greatest share of deal flow going to merchant processing players



Source: The Nilson Report, Morgan Stanley Research. Note: Shows mix of deal flow beginning 2021 through August 2022

Estimate changes:

- FIS:** We're lowering our FIS '22 revenue by 0.4% and '23 revenue by 1.3% driven by FX headwinds primarily around the GBP and EUR, given 20% of FIS revenue comes from outside of the US. We're lowering our FIS '22 adj. EPS by 3c to \$7.03 (\$7.06 prior), with '23 adj. EPS coming down by a more meaningful 4% to \$7.68 (\$7.99 prior). Beyond the FX impact, higher interest expense has a material impact on '23 EPS for 3 primary reasons. 1) FIS will be reissuing CP for €1,000 of notes maturing in December (currently pay 1.25% rate) and another \$750M of notes maturing in March (currently pay 0.375%). 2) FIS will refinance its May maturity of €1,250,

which currently pays 0.75%. 3) FIS has ~40% of variable debt in aggregate that will be exposed to higher LIBOR. Net net, we increase our FIS '23 interest expense to \$611M from \$481M prior to account for these impacts.

- **FISV:** With 14% of revenue coming from outside of the US, FX headwinds drives our revenue down 0.2% vs. prior in '22 and 0.7% vs. prior in '23. We increase our interest expense to \$717M from \$687M prior to account for FISV's 15% of variable debt (largely in the form of commercial paper), though this is offset to an extent by increased interest income. Net net, our FISV '22 adj EPS falls to \$6.53 (\$6.54 prior) and '23 adj. EPS falls to \$7.35 (\$7.43 prior).
- **GPN:** With 21% of revenue coming from outside the U.S., FX headwinds largely around the GBP and EUR drive our '22 revenue down 0.3% and '23 revenue down 1.3%. We lower our '22 GPN adj. EPS to \$9.35 (\$9.48 prior) and '23 adj. EPS to \$10.76 (\$11.02 prior). Note that GPN does not have floating rate exposure.

FISV into the print: MS/Consensus estimates for FISV's 3Q22 results stand at total adjusted revenues of \$4.27B/\$4.28B growing 7.8%/7.9% YoY, an adjusted operating margin of 35.9%/35.7% and Adj. EPS of \$1.73/\$1.70. By segment, MS/Cons calls for of 10.3%/9.8% growth in Merchant Acceptance and 7.0%/6.2% growth in Payments.

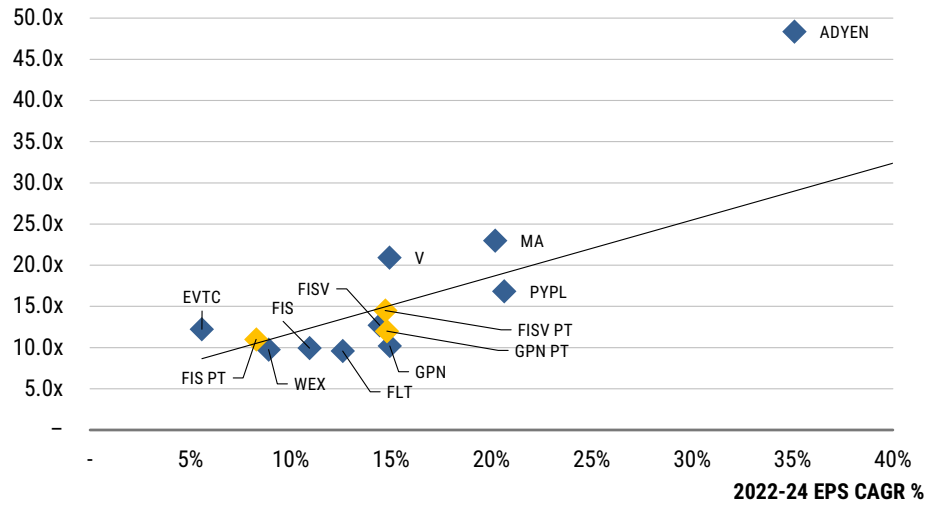
FIS into the print: MS/Consensus estimates for FIS's 3Q22 results stand at total adjusted revenues of \$3.62B/\$3.61B growing 3.3%/2.9% YoY, an adjusted Ebitda margin of 44.6%/44.5% and Adj. EPS of \$1.78/\$1.76. By segment, MS/Cons calls for of 4.5%/4.5% growth in Merchant and 3.0%/3.8% growth in Banking.

GPN into the print: MS/Consensus estimates for GPN's 3Q22 results stand at total adjusted revenues of \$1.96B/\$2.04B growing -1.7%/+2.7% YoY, an adjusted operating margin of 45.1%/44.6% and adj. EPS of \$2.50/\$2.49. By segment, MS/Cons calls for of 9%/9% growth in Merchant and 9%/8% growth in Issuer.

Remain EW on the deal stocks: We remain EW on FISV, FIS, and GPN, as we lower our FIS PT to \$85 (\$100 prior) and GPN PT to \$128 (\$141 prior). Our FISV PT of \$107 is largely unchanged (\$106 prior). Note that we have adjusted our valuation methodology from using EV/EBITDA to now using P/E. Our P/E multiples of 14.5x at FISV, 12x at GPN, and 11x are above current trading multiples (13x at FISV, 10x at GPN/FIS), and closer to the regression implied multiples relative to peers. With the deal stocks trading near historically low valuations likely given ongoing macro risks, we think a moderate earnings beat (or even closer performance to the networks) could help drive a post-print bounce. Additionally, near-term positives around less capital coming into the space and the resilience of the non-acquiring segments (banking/capital markets) in a recessionary scenario could also improve sentiment around the stocks. Still, we would note that a more meaningful re-rating in shares will likely first require multiple expansion at V/MA. This would symbolize an abatement of cyclical fears, with investors typically preferring the networks across the larger payment space. Longer term, we continue to expect that outperformance will depend on higher M&A/investment.

Exhibit 6: FIS/FISV/GPN Valuation vs. Comps

P/E CY23



Source: Refinitiv, Morgan Stanley Research.

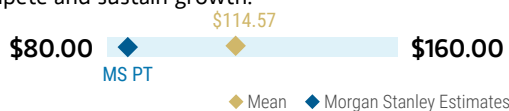
Risk Reward – Fidelity National Information Services (FIS.N)

Prefer faster LT growth outlook elsewhere given high competition in the space

PRICE TARGET \$85.00

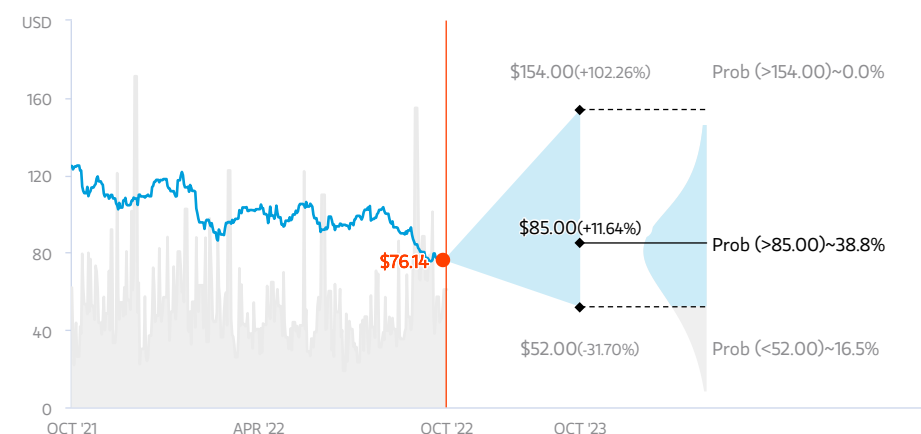
Based on 11x target P/E multiple on our base-case 2023 Adj. EPS estimate. Our target multiple is at a 7x discount to FIS' 5-year average multiple, given rising concerns about the ability of legacy merchant acquirers to compete and sustain growth.

Consensus Price Target Distribution



Source: Refinitiv, Morgan Stanley Research

RISK REWARD CHART AND OPTIONS IMPLIED PROBABILITIES (12M)



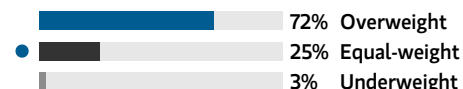
Key: — Historical Stock Performance ● Current Stock Price ◆ Price Target

Source: Refinitiv, Morgan Stanley Research, Morgan Stanley Institutional Equities Division. The probabilities of our Bull, Base, and Bear case scenarios playing out were estimated with implied volatility data from the options market as of 14 Oct, 2022. All figures are approximate risk-neutral probabilities of the stock reaching beyond the scenario price in either three-months' or one-years' time. View explanation of Options Probabilities methodology [here](#)

EQUAL-WEIGHT THESIS

FIS likely to see slower growth vs. faster growing rivals that are benefitting from massive capital influxes and gaining share. Recovering T&E, international expansion, and ecommerce growth should help it achieve high-single to low-double digit merchant growth, but we prefer other Payments providers that can deliver higher quality, compounding earnings growth longer term.

Consensus Rating Distribution



● MS Rating

Source: Refinitiv, Morgan Stanley Research

Risk Reward Themes

Contrarian: *Negative*
 Market Share: *Negative*
 Special Situation: *Positive*

View descriptions of Risk Rewards Themes [here](#)

BULL CASE

\$154.00

15x Bull Case CY23 Adj. EPS

Quick macro recovery and M&A optionality: Economy re-accelerates, as merchant revenues expand by low-teens. Growth is supported by M&A that helps defend against share donation, and expansion in ecommerce and internationally.

BASE CASE

\$85.00

11x Base Case CY23 Adj. EPS

Covid-19 recovery throughout 2022, with resilient consumer into '23. Covid-19 recovery continues in FY22 and consumer spending remains resilient in '23. This supporting mid-to-high-single digit growth, driven by high-single-digit gains in the Merchant segment, and mid-single digit expansion in the Banking and Capital Markets businesses. Potential recession risk and new competition keeps us nearer to the low-end of mgmt's medium-term target for 7-9%.

BEAR CASE

\$52.00

8x Bear Case CY23 Adj. EPS

Slower growth as competition rises; macro headwinds persist: Revenues recover more gradually, reaching just 3% growth in CY23 as competition takes share from FIS in Merchant, which expands low-single digits vs. mgmt's expectation for low-double digit growth. Recession risks materialize and impacts are greater than anticipated.

Risk Reward – Fidelity National Information Services (FIS.N)

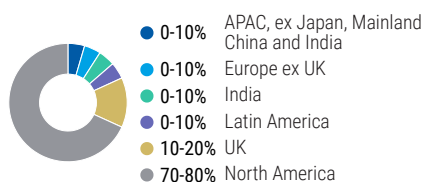
KEY EARNINGS INPUTS

Drivers	2021	2022e	2023e	2024e
Merchant Revenue YoY Growth (%)	19.4	9.3	6.8	9.8
Total Revenue YoY Growth (%)	10.5	5.3	6.3	6.9
Adj. EBITDA YoY Growth (%)	16.3	6.2	8.2	8.5
Adj. EPS YoY Growth (%)	19.9	7.3	9.2	18.6

INVESTMENT DRIVERS

- Potential for more M&A
- Outsourced tech spend in Financial Services industry
- Announcement of competitive takeaways
- High competition

GLOBAL REVENUE EXPOSURE



Source: Morgan Stanley Research Estimate
View explanation of regional hierarchies [here](#)

MS ALPHA MODELS

1/5 BEST	24 Month Horizon	4/5 MOST	3 Month Horizon
-----------------	------------------	-----------------	-----------------

Source: Refinitiv, FactSet, Morgan Stanley Research; 1 is the highest favored Quintile and 5 is the least favored Quintile

RISKS TO PT/RATING

RISKS TO UPSIDE

- Client wins
- FIs increase outsourced tech spend
- Faster synergies realization
- Faster deleveraging, resulting in acquisitions
- New solutions drive market share gain at Worldpay

RISKS TO DOWNSIDE

- Competitive losses
- Decreased outsourced tech spend
- Security breach
- Slower synergies realization
- Integration issues cause share loss at Worldpay
- Pricing sensitivity returns to merchant acquiring

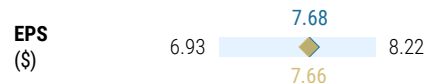
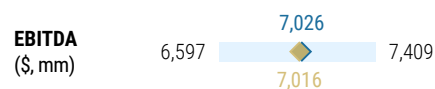
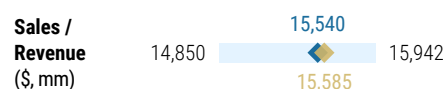
OWNERSHIP POSITIONING

Inst. Owners, % Active	66.8%	<div style="width: 66.8%;"></div>
HF Sector Long/Short Ratio	2.3x	<div style="width: 2.3x;"></div>
HF Sector Net Exposure	32.7%	<div style="width: 32.7%;"></div>

Refinitiv; MSPB Content. Includes certain hedge fund exposures held with MSPB. Information may be inconsistent with or may not reflect broader market trends. Long/Short Ratio = Long Exposure / Short exposure. Sector % of Total Net Exposure = (For a particular sector: Long Exposure - Short Exposure) / (Across all sectors: Long Exposure - Short Exposure).

MS ESTIMATES VS. CONSENSUS

FY Dec 2023e



Source: Refinitiv, Morgan Stanley Research
◆ Mean ◆ Morgan Stanley Estimates

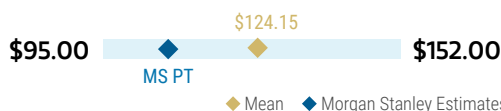
Risk Reward – Fiserv Inc. (FISV.O)

Risk/reward fairly balances strong earnings growth with execution/LT growth risk

PRICE TARGET \$107.00

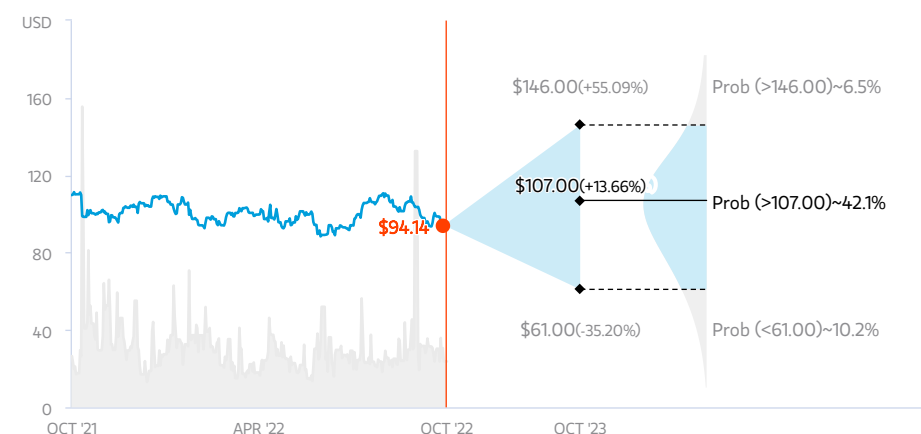
Our PT is derived by applying a 14.5x P/E multiple on our 2023 Adj. EPS. This is at a ~5x discount to the stock's 5-year historical average but a ~1.5x premium to where it currently trades.

Consensus Price Target Distribution



Source: Refinitiv, Morgan Stanley Research

RISK REWARD CHART AND OPTIONS IMPLIED PROBABILITIES (12M)



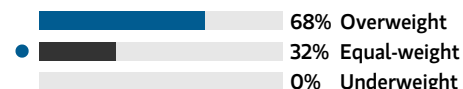
Key: — Historical Stock Performance ● Current Stock Price ◆ Price Target

Source: Refinitiv, Morgan Stanley Research, Morgan Stanley Institutional Equities Division. The probabilities of our Bull, Base, and Bear case scenarios playing out were estimated with implied volatility data from the options market as of 14 Oct, 2022. All figures are approximate risk-neutral probabilities of the stock reaching beyond the scenario price in either three-months' or one-years' time. View explanation of Options Probabilities methodology [here](#)

EQUAL-WEIGHT THESIS

Long term, performance is likely to lag our preferred Payments names (V, MA, PYPL), who benefit from greater exposure to the higher growth areas and face less competitive pressure, and can deliver compounding earnings growth. Preference for capital strategy focused on reinvestment and M&A keeps us on the sidelines as Fiserv prioritizes share repurchases and tuck-in acquisitions.

Consensus Rating Distribution



Source: Refinitiv, Morgan Stanley Research

Risk Reward Themes

Market Share: *Negative*
Special Situation: *Positive*

View descriptions of Risk Rewards Themes [here](#)

BULL CASE

\$146.00

19x CY23e bull-case adj. EPS

Macro recovers quickly; FISV able to keep share and drive better growth: Merchant segment grows faster as FISV defends share on investments and acquisitions. Meanwhile, competitive wins drive better growth for the Payments and Fintech segments. Margins expand on scale and EPS grows mid-teens.

BASE CASE

\$107.00

14.5x CY23e base-case adj. EPS

Recovery and synergies help deliver growth in-line with targets near-term but capital allocation away from M&A weighs on multiple: The merchant segment grows high-single to low-teens in FY22-23, but competitive pressures cause growth to trail peers. Tuck in acquisitions help, but the need to reinvest limits margin expansion. Adj. EPS continues to grow double-digits on heavy share buybacks.

BEAR CASE

\$61.00

9x CY23e bear-case adj. EPS

Macro growth slows, preventing FISV from achieving its targets: Merchant segment grows below the 9-12% medium-term target on a weaker macro and intensifying competition. M&A deals slow and greater investments weigh on margin.

Risk Reward – Fiserv Inc. (FISV.O)

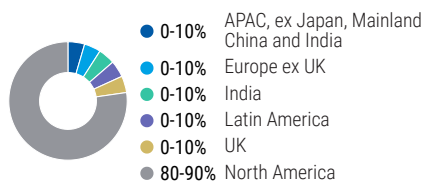
KEY EARNINGS INPUTS

Drivers	2021	2022e	2023e	2024e
Total Revenue YoY Growth (%)	10.7	8.8	6.3	6.5
Adj. EBITDA YoY Growth (%)	15.8	11.8	7.7	7.8
Adj. EPS YoY Growth (%)	26.3	16.9	12.5	11.7

INVESTMENT DRIVERS

- Deal synergies upside
- Improvements at First Data
- Outsource tech spend at FIs
- Announcement of competitive takeaways

GLOBAL REVENUE EXPOSURE



Source: Morgan Stanley Research Estimate
View explanation of regional hierarchies [here](#)

MS ALPHA MODELS

2/5 BEST	24 Month Horizon	5/5 MOST	3 Month Horizon
-------------	---------------------	-------------	--------------------

Source: Refinitiv, FactSet, Morgan Stanley Research; 1 is the highest favored Quintile and 5 is the least favored Quintile

RISKS TO PT/RATING

RISKS TO UPSIDE

- Client wins
- FIs increase outsourced tech spend
- Faster realization of synergies
- Faster deleveraging, resulting in new accretive acquisitions

RISKS TO DOWNSIDE

- Competitive losses or decreased outsourced tech spend
- Security breach leading to client loss/investments
- Slower synergies realization
- Consolidation of FIs
- Competition drives up investments, pressuring margins
- Pricing sensitivity returns to merchant acquiring

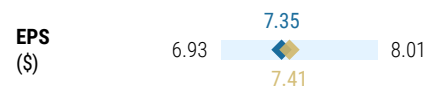
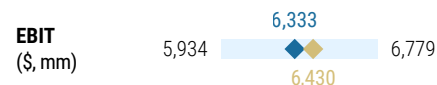
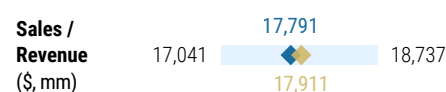
OWNERSHIP POSITIONING

Inst. Owners, % Active	71.6%	<div style="width: 71.6%;"></div>
HF Sector Long/Short Ratio	2.3x	<div style="width: 2.3x;"></div>
HF Sector Net Exposure	32.7%	<div style="width: 32.7%;"></div>

Refinitiv; MSPB Content. Includes certain hedge fund exposures held with MSPB. Information may be inconsistent with or may not reflect broader market trends. Long/Short Ratio = Long Exposure / Short exposure. Sector % of Total Net Exposure = (For a particular sector: Long Exposure - Short Exposure) / (Across all sectors: Long Exposure - Short Exposure).

MS ESTIMATES VS. CONSENSUS

FY Dec 2023e



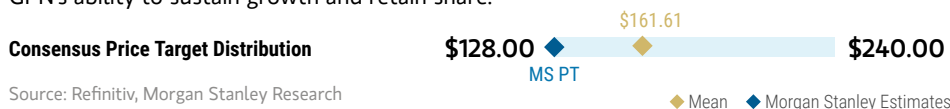
◆ Mean ◆ Morgan Stanley Estimates
Source: Refinitiv, Morgan Stanley Research

Risk Reward – Global Payments Inc (GPN.N)

Software driven merchant acquiring drives growth, but like risk/reward elsewhere

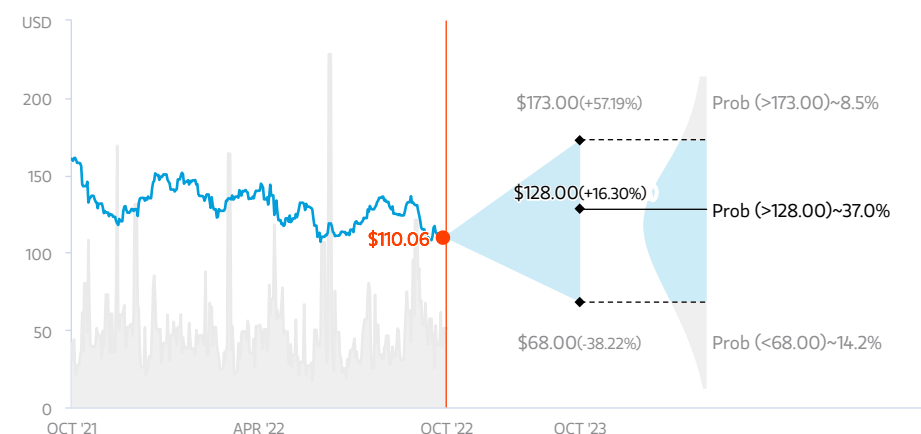
PRICE TARGET \$128.00

Based on a ~12.5x multiple on our 2023 adj. EPS (SBC burdened). Our applied multiple is at a discount to GPN's historical average given growing competition and lower confidence in GPN's ability to sustain growth and retain share.



Source: Refinitiv, Morgan Stanley Research

RISK REWARD CHART AND OPTIONS IMPLIED PROBABILITIES (12M)

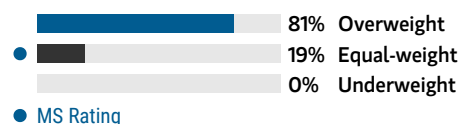


Source: Refinitiv, Morgan Stanley Research, Morgan Stanley Institutional Equities Division. The probabilities of our Bull, Base, and Bear case scenarios playing out were estimated with implied volatility data from the options market as of 14 Oct, 2022. All figures are approximate risk-neutral probabilities of the stock reaching beyond the scenario price in either three-months' or one-years' time. View explanation of Options Probabilities methodology [here](#)

EQUAL-WEIGHT THESIS

Among the three deal stocks, GPN has the largest exposure to core merchant acquiring, which drives higher risk if we were to enter a recession. Absent an economic downturn, GPN could benefit from 1) greater exposure to discretionary credit volumes, which are still recovering post-COVID, along with 2) near-term and long-term M&A-related opportunities and 3) upside surprise potential from deal synergies. However, we prefer other names in our space with more resilient earnings growth longer term.

Consensus Rating Distribution



Source: Refinitiv, Morgan Stanley Research

Risk Reward Themes

Secular Growth: *Positive*
Special Situation: *Positive*

View descriptions of Risk Rewards Themes [here](#)

BULL CASE

\$173.00

16x bull case CY23e Adj. EPS (SBC burdened)

Economy avoids recession and re-accelerates: Net revenues grow faster than expectations as GPN benefits from M&A, increased exposure to high growth verticals and software, and as competition softens. Large new client wins in Issuer also drive upside. Scale plus buybacks drive high-teens to 20%+ EPS growth in CY22-23.

BASE CASE

\$128.00

12.5x base case CY23e Adj. EPS (SBC burdened)

In-line with expectations for resilient consumer spending and better growth from ecommerce and software: Net revenues grow high single digits in CY22 on persistent PCE growth and Issuer wins, while share buy backs and operating leverage drive double-digit EPS growth in CY22 and CY23.

BEAR CASE

\$68.00

7x bear case CY23e Adj. EPS (SBC burdened)

Slower macro and rising competition: Net revenues grow slower as the Merchant segment faces a spending slowdown and intense competition. Issuer pipeline also dries up as new entrants win share. Cash availability for M&A or repurchases weakens, driving slower low-double-digit EPS growth.

Risk Reward – Global Payments Inc (GPN.N)

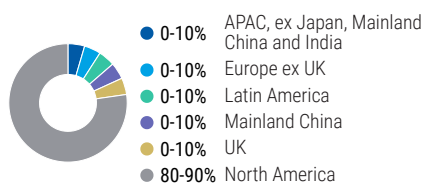
KEY EARNINGS INPUTS

Drivers	2021	2022e	2023e	2024e
Total Net Revenue YoY Growth (%)	14.7	2.0	2.8	8.9
Adj. Operating Margin (on Net Revenues) (%)	41.8	43.7	45.1	45.8
Adj. EPS YoY Growth (%)	27.6	14.5	15.1	14.4

INVESTMENT DRIVERS

- Deal synergies upside
- Potential for new accretive M&A deals
- Announcement of competitive takeaways in Merchant or Issuer Solutions

GLOBAL REVENUE EXPOSURE



Source: Morgan Stanley Research Estimate
View explanation of regional hierarchies [here](#)

MS ALPHA MODELS

1/5 BEST	24 Month Horizon	5/5 MOST	3 Month Horizon
----------	------------------	----------	-----------------

Source: Refinitiv, FactSet, Morgan Stanley Research; 1 is the highest favored Quintile and 5 is the least favored Quintile

SUSTAINABILITY & ESG



RISKS TO PT/RATING

RISKS TO UPSIDE

- Client wins in Merchant and Issuer Solutions
- Faster realization of deal synergies
- Faster deleveraging, resulting in new accretive acquisitions

RISKS TO DOWNSIDE

- Material slowdown in consumer spending
- Competitive losses
- Slower synergies realization
- Pricing sensitivity returns to merchant acquiring

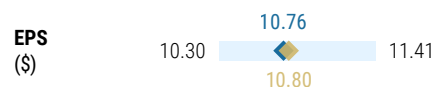
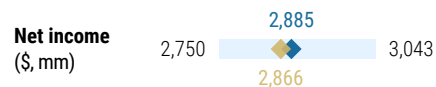
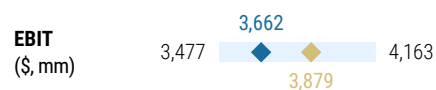
OWNERSHIP POSITIONING

Inst. Owners, % Active	68.2%
HF Sector Long/Short Ratio	2.3x
HF Sector Net Exposure	32.7%

Refinitiv; MSPB Content. Includes certain hedge fund exposures held with MSPB. Information may be inconsistent with or may not reflect broader market trends. Long/Short Ratio = Long Exposure / Short exposure. Sector % of Total Net Exposure = (For a particular sector: Long Exposure - Short Exposure) / (Across all sectors: Long Exposure - Short Exposure).

MS ESTIMATES VS. CONSENSUS

FY Dec 2023e



◆ Mean ◆ Morgan Stanley Estimates
Source: Refinitiv, Morgan Stanley Research

Exhibit 9: FIS Balance Sheet

BALANCE SHEET (\$ in millions)	2016A	2016A	2016E	2021A	10/22A	2/22A	5/22E	8/22E	11/22E	2/23E	5/23E	8/23E	11/23E	2/24E
Cash and equivalents	703.0	1,152.0	1,369.0	2,010.0	1,547.0	1,888.0	2,333.0	1,882.5	1,882.5	1,311.7	1,322.8	1,527.2	1,675.5	1,873.1
Settlement deposits	700.0	2,882.0	3,252.0	4,020.0	4,062.0	4,334.0	4,334.0	4,334.0	4,334.0	4,334.0	4,334.0	4,334.0	4,334.0	4,334.0
Trade receivables, net	1,472.0	3,242.0	3,314.0	3,772.0	3,655.0	3,520.0	3,548.4	3,633.3	3,633.3	3,994.5	3,756.9	3,845.2	4,231.6	4,588.7
Settlement receivables	281.0	647.0	692.0	-	-	-	-	-	-	-	-	-	-	-
Other receivables	123.0	337.0	317.0	355.0	260.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0
Due from related parties	-	124.0	140.0	-	-	-	-	-	-	-	-	-	-	-
Prepaid expenses and other current assets	454.0	308.0	254.0	551.0	621.0	913.0	657.7	724.1	724.1	825.0	813.3	786.7	771.8	809.6
Deferred income taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Assets held for sale	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total current assets	3,733.0	6,692.0	9,988.0	10,768.0	10,145.0	10,706.0	11,144.1	11,025.0	11,025.0	10,718.2	10,478.1	10,844.0	11,263.0	11,656.4
Property and equipment, net	587.0	500.0	587.0	940.0	801.0	881.0	806.2	748.3	748.3	720.0	693.7	670.6	649.0	591.9
Goodwill	13,945.0	62,242.0	63,266.0	63,330.0	62,989.0	62,004.0	62,004.0	62,004.0	62,004.0	62,004.0	62,004.0	62,004.0	62,004.0	62,004.0
Intangibles, net	3,132.0	15,796.0	13,928.0	11,530.0	10,854.0	10,018.0	9,544.7	9,086.2	9,086.2	8,618.1	8,142.4	7,881.8	7,201.1	7,201.1
Computer software, net	1,756.0	3,204.0	3,370.0	3,299.0	3,235.0	3,176.0	3,085.3	2,987.4	2,987.4	2,884.0	2,783.7	2,691.4	2,600.2	2,301.0
Deferred contract costs, net	476.0	667.0	917.0	989.0	943.0	959.0	913.1	879.7	879.7	1,022.2	986.0	956.6	937.5	983.4
Other noncurrent assets	503.0	2,303.0	1,574.0	2,137.0	2,132.0	1,876.0	1,876.0	1,876.0	1,876.0	1,876.0	1,876.0	1,876.0	1,876.0	1,876.0
Total Assets	23,770.0	83,696.0	83,842.0	82,931.0	81,198.0	79,620.0	79,373.4	78,606.5	78,606.5	77,820.5	76,965.8	76,723.4	76,531.6	74,762.8
Accounts payable and accrued liabilities	1,059.0	2,374.0	2,522.0	2,894.0	2,930.0	2,956.0	2,811.1	2,925.6	2,925.6	2,393.8	2,376.3	2,393.9	3,138.3	3,511.9
Due to Brazilian venture partner	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Settlement payables	972.0	4,228.0	4,904.0	5,235.0	5,228.0	5,154.0	5,516.4	5,455.8	5,455.8	5,594.8	5,374.7	5,845.2	5,803.5	5,803.5
Current portion of long-term debt	48.0	140.0	1,314.0	1,817.0	2,330.0	3,148.0	3,148.0	3,148.0	3,148.0	3,148.0	3,148.0	3,148.0	3,148.0	3,148.0
Deferred revenues	739.0	817.0	881.0	779.0	847.0	728.0	728.0	728.0	728.0	728.0	728.0	728.0	728.0	728.0
Short-Term borrowings	257.0	2,823.0	2,750.0	3,911.0	2,862.0	3,642.0	3,642.0	3,642.0	3,642.0	3,642.0	3,642.0	3,642.0	3,642.0	3,642.0
Liabilities held for sale	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total current liabilities	3,125.0	10,382.0	12,361.0	14,466.0	13,777.0	15,528.0	15,815.5	15,879.4	15,879.4	15,882.7	15,871.0	16,310.0	16,550.1	17,106.4
Deferred revenues	67.0	52.0	59.0	-	-	-	-	-	-	-	-	-	-	-
Deferred income taxes	1,380.0	4,291.0	4,017.0	4,193.0	4,055.0	3,786.0	3,786.0	3,786.0	3,786.0	3,786.0	3,786.0	3,786.0	3,786.0	3,786.0
Long-term debt, excluding current portion	8,670.0	17,229.0	15,951.0	14,825.0	14,208.0	11,755.0	11,755.0	11,755.0	11,755.0	12,105.0	12,455.0	12,805.0	13,155.0	14,555.0
Due to Brazilian venture partner	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other long-term liabilities	326.0	2,406.0	1,967.0	1,915.0	1,948.0	1,861.0	1,861.0	1,861.0	1,861.0	1,861.0	1,861.0	1,861.0	1,861.0	1,861.0
Total liabilities	13,548.0	34,350.0	34,355.0	35,399.0	33,988.0	32,930.0	33,217.5	33,281.4	33,281.4	33,734.7	33,973.0	34,762.0	35,352.1	37,308.4
Non-controlling interests	7.0	16.0	197.0	185.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0	184.0
Common Stock	4.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Additional Paid-in Capital	10,800.0	45,358.0	45,947.0	46,466.0	46,536.0	46,634.0	46,834.0	47,047.0	47,047.0	47,206.2	47,376.1	47,544.7	47,721.0	48,434.3
Retained Earnings	4,528.0	4,161.0	3,440.0	2,889.0	2,721.0	2,709.0	2,974.9	3,437.4	3,437.4	3,532.6	3,769.8	4,069.7	4,611.5	6,173.1
Accumulated other comprehensive loss	(633.0)	(333.0)	57.0	292.0	196.0	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)
Treasury stock	(4,687.0)	(52.0)	(150.0)	(2,266.0)	(2,343.0)	(2,643.0)	(3,643.0)	(5,143.0)	(5,143.0)	(6,643.0)	(8,143.0)	(9,643.0)	(11,143.0)	(17,143.0)
Total stockholders' equity	10,215.0	49,446.0	49,300.0	47,347.0	47,026.0	46,506.0	45,971.9	45,141.1	45,141.1	43,901.8	42,888.8	41,777.3	40,985.5	37,270.4
Total Liabilities & Stockholders' Equity	23,770.0	83,696.0	83,842.0	82,931.0	81,198.0	79,620.0	79,373.4	78,606.5	78,606.5	77,820.5	76,965.8	76,723.4	76,531.6	74,762.8

Source: Company data, Morgan Stanley Research estimates

Exhibit 12: FISV Balance Sheet

BALANCE SHEET (\$ in millions)	2017A	2018A	2019A	2020A	2021A	1Q22A	2Q22A	3Q22E	4Q22E	2022E	1Q23E	2Q23E	3Q23E	4Q23E	2023E	2024E
ASSETS																
Cash and Cash Equivalents	325.0	415.0	893.0	906.0	835.0	863.0	883.0	672.9	1,536.7	1,536.7	1,649.0	2,104.1	2,796.2	3,760.3	3,760.3	7,001.2
Accounts Receivable—net	997.0	1,049.0	2,782.0	2,482.0	2,860.0	2,911.0	3,194.0	3,058.9	2,872.2	2,872.2	3,326.6	3,757.7	3,493.6	3,322.5	3,322.5	3,813.9
Deferred Income Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prepaid Expenses and Other Current Assets	653.0	760.0	1,503.0	1,310.0	1,523.0	1,429.0	1,525.0	1,568.8	1,566.7	1,566.7	1,623.9	1,735.5	1,843.0	1,857.1	1,857.1	2,175.9
Settlement Assets	-	-	11,868.0	11,521.0	13,652.0	13,240.0	14,679.0	14,125.5	14,629.6	14,629.6	13,462.9	15,508.4	15,462.4	16,081.0	16,081.0	17,610.4
Total Current Assets	1,975.0	2,224.0	17,046.0	16,219.0	18,870.0	18,443.0	20,291.0	19,428.0	20,605.1	20,605.1	20,062.4	23,105.7	23,595.8	25,020.9	25,020.9	30,601.3
Property and Equipment	380.0	398.0	1,606.0	1,628.0	1,742.0	1,729.0	1,804.0	1,839.6	1,875.7	1,875.7	1,865.4	1,854.1	1,842.8	1,831.3	1,831.3	1,725.4
Intangibles, Net	1,882.0	2,143.0	17,642.0	15,358.0	14,000.0	13,442.0	13,016.0	12,626.5	11,988.2	11,988.2	11,503.2	10,993.5	10,430.1	9,880.6	9,880.6	7,676.9
Goodwill, Net	5,590.0	5,702.0	36,038.0	36,322.0	36,433.0	36,538.0	36,829.0	36,829.0	36,829.0	36,829.0	36,829.0	36,829.0	36,829.0	36,829.0	36,829.0	36,829.0
Other Long-Term Assets	452.0	795.0	5,207.0	5,092.0	5,195.0	5,318.0	5,282.0	5,282.0	5,282.0	5,282.0	5,282.0	5,282.0	5,282.0	5,282.0	5,282.0	5,282.0
Total Assets	10,289.0	11,262.0	77,539.0	74,619.0	76,249.0	75,470.0	77,212.0	75,886.2	76,588.1	76,588.1	75,542.0	78,039.3	77,979.7	78,843.8	78,843.8	82,116.7
LIABILITIES																
Accounts Payable and Accrued Expenses	1,383.0	1,626.0	3,080.0	3,186.0	3,550.0	3,227.0	3,472.0	3,386.5	3,361.6	3,261.6	3,432.9	3,663.1	3,392.4	3,393.3	3,393.3	3,574.5
Current Maturities of Long-Term Debt	3.0	4.0	287.0	384.0	508.0	552.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0
Deferred Revenue	552.0	380.0	462.0	546.0	585.0	611.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0
Liabilities Of Discontinued Operations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Settlement Obligations	-	-	11,868.0	11,521.0	13,652.0	13,240.0	14,679.0	14,125.5	14,629.6	14,629.6	13,462.9	15,508.4	15,462.4	16,081.0	16,081.0	17,610.4
Total Current Liabilities	1,938.0	2,010.0	15,727.0	15,637.0	18,295.0	17,730.0	19,351.0	18,712.0	19,191.2	19,191.2	18,095.8	20,371.6	20,055.5	20,674.3	20,674.3	22,384.8
Long-Term Debt	4,897.0	5,955.0	21,612.0	20,300.0	20,729.0	20,518.0	20,915.0	20,190.0	20,065.0	20,065.0	19,765.0	19,465.0	19,165.0	18,778.0	18,778.0	17,878.0
Deferred Income Taxes	552.0	745.0	4,247.0	4,389.0	4,172.0	3,983.0	3,797.0	3,797.0	3,797.0	3,797.0	3,797.0	3,797.0	3,797.0	3,797.0	3,797.0	3,797.0
Other Long-Term Liabilities	171.0	259.0	1,096.0	964.0	1,103.0	1,097.0	1,179.0	1,179.0	1,179.0	1,179.0	1,179.0	1,179.0	1,179.0	1,179.0	1,179.0	1,179.0
Total Liabilities	7,558.0	8,969.0	42,682.0	41,290.0	44,299.0	43,328.0	45,242.0	43,978.0	44,232.2	44,232.2	42,858.8	44,812.6	44,196.5	44,428.3	44,428.3	45,238.8
Total stockholders' equity	2,731.0	2,293.0	32,979.0	33,330.0	30,950.0	31,272.0	31,099.0	31,447.2	31,494.9	31,494.9	31,844.2	32,365.8	32,822.3	33,554.5	33,554.5	36,016.8
Noncontrolling interests	-	-	1,275.0	959.0	959.0	970.0	951.0	951.0	951.0	951.0	951.0	951.0	951.0	951.0	951.0	951.0
Total Liabilities & Stockholders' Equity	10,289.0	11,262.0	77,539.0	74,619.0	76,249.0	75,470.0	77,212.0	75,886.2	76,588.1	76,588.1	75,542.0	78,039.3	77,979.7	78,843.8	78,843.8	82,116.7

Source: Company data, Morgan Stanley Research estimates

Exhibit 15: GPN Balance Sheet

BALANCE SHEET (\$ in millions)	2017A	2018A	2019A	2020A	2021E	1Q22E	2Q22E	3Q22E	4Q22E	2022E	1Q23E	2Q23E	3Q23E	4Q23E	2023E	2024E
Cash & Equivalents	1,336	1,211	1,678	1,946	1,979	2,045	1,933	2,128	2,153	2,153	1,100	1,360	1,797	2,187	2,187	3,981
Accounts receivable, net of allowance for doubtful account	302	348	895	794	946	973	969	901	933	933	921	964	967	1,016	1,016	1,106
Claims receivable, net of allowance for losses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Settlement processing assets	2,459	1,600	1,354	1,231	1,144	1,450	1,544	1,494	1,472	1,472	2,008	2,103	2,195	2,195	2,195	2,389
Inventory	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deferred income taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prepaid expenses and other current assets	207	217	439	621	642	684	750	750	750	750	750	750	750	750	750	750
Assets of discontinued operations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Income tax receivable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Current Assets	4,304	3,376	4,366	4,592	4,711	5,152	5,217	5,274	5,308	5,308	4,780	5,178	5,709	6,149	6,149	8,226
Goodwill, net	574	6,341	23,760	23,871	24,813	24,794	23,496	23,456	23,496	23,496	23,496	23,496	23,496	23,496	23,496	23,496
Other intangible assets, net	2,182	2,489	13,155	12,015	11,634	11,292	10,273	9,945	9,617	9,617	9,289	8,961	8,634	8,306	8,306	6,995
Property and equipment, net	588	654	1,383	1,579	1,688	1,716	1,689	1,748	1,799	1,799	1,848	1,903	1,962	2,016	2,016	2,288
Deferred income taxes	13	8	6	8	12	23	31	31	31	31	31	31	31	31	31	31
Other	207	363	1,810	2,136	2,422	2,458	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470
Total Assets	12,998	13,231	44,480	44,202	45,280	45,435	44,176	43,963	43,721	43,721	42,914	43,039	43,303	43,467	43,467	44,486
Line of credit	635	700	463	359	484	497	470	470	470	470	470	470	470	470	470	470
Current portion of long-term debt	100	115	35	827	79	120	1,280	1,280	1,280	1,280	1,280	1,280	1,280	1,280	1,280	1,280
Accounts payable and accrued liabilities	1,040	1,177	1,822	2,061	2,542	2,550	2,339	2,220	2,254	2,254	1,533	1,539	1,599	1,646	1,646	1,788
Settlement processing obligations	2,041	1,276	1,229	1,302	1,398	1,699	1,800	1,741	1,715	1,715	1,710	1,790	1,868	1,868	1,868	2,034
Income taxes payable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Commitment to purchase redeemable noncontrolling into	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Payables to Money Transfer Beneficiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Obligations under capital leases	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Current liabilities held for sale	-	-	-	-	-	-	94	94	94	94	94	94	94	94	94	94
Total Current Liabilities	3,816	3,269	3,579	4,549	4,463	4,967	5,982	5,804	5,813	5,813	5,086	5,172	5,311	5,357	5,357	5,665
Long-term debt	4,559	5,015	9,090	8,466	11,415	11,724	10,884	10,784	10,684	10,684	10,484	10,325	10,225	10,125	10,125	9,725
Deferred income taxes	437	585	3,146	2,946	2,793	2,726	2,626	2,726	2,626	2,626	2,626	2,626	2,626	2,626	2,626	2,626
Other long-term liabilities	221	176	610	751	739	724	708	708	708	708	708	708	708	708	708	708
Obligations under capital leases, net of current portion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Notes payable, net of current portion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Liabilities	9,033	9,044	16,425	16,715	19,410	20,040	20,199	20,022	19,830	19,830	18,904	18,831	18,870	18,816	18,816	18,724
Noncontrolling interest	171	195	199	155	241	235	221	198	189	189	176	170	148	138	138	86
Preferred stock, no par value; 5,000,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Common stock, no par value; 200,000,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paid-in capital	2,380	2,235	25,833	24,964	22,880	22,338	21,801	21,445	21,089	21,089	20,931	20,776	20,622	20,468	20,468	19,863
Retained earnings	1,598	2,066	2,333	2,571	2,982	3,069	2,326	2,669	2,984	2,984	3,274	3,633	4,034	4,415	4,415	6,194
Accumulated other comprehensive income	(183)	(310)	(311)	(202)	(234)	(247)	(371)	(371)	(371)	(371)	(371)	(371)	(371)	(371)	(371)	(371)
Treasury stock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deferred compensation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total stockholders' equity	3,795	3,991	27,856	27,332	25,628	25,160	23,756	23,743	23,702	23,702	23,834	24,038	24,285	24,512	24,512	25,616
Total Liabilities & Stockholders' Equity	12,998	13,231	44,480	44,202	45,280	45,435	44,176	43,963	43,721	43,721	42,914	43,039	43,303	43,467	43,467	44,486

Source: Company data, Morgan Stanley Research estimates

Disclosure Section

The information and opinions in Morgan Stanley Research were prepared by Morgan Stanley & Co. LLC, and/or Morgan Stanley C.T.V.M. S.A., and/or Morgan Stanley Mexico, Casa de Bolsa, S.A. de C.V., and/or Morgan Stanley Canada Limited. As used in this disclosure section, "Morgan Stanley" includes Morgan Stanley & Co. LLC, Morgan Stanley C.T.V.M. S.A., Morgan Stanley Mexico, Casa de Bolsa, S.A. de C.V., Morgan Stanley Canada Limited and their affiliates as necessary.

For important disclosures, stock price charts and equity rating histories regarding companies that are the subject of this report, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/researchdisclosures, or contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY, 10036 USA.

For valuation methodology and risks associated with any recommendation, rating or price target referenced in this research report, please contact the Client Support Team as follows: US/Canada +1 800 303-2495; Hong Kong +852 2848-5999; Latin America +1 718 754-5444 (U.S.); London +44 (0)20-7425-8169; Singapore +65 6834-6860; Sydney +61 (0)2-9770-1505; Tokyo +81 (0)3-6836-9000. Alternatively you may contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY 10036 USA.

Analyst Certification

The following analysts hereby certify that their views about the companies and their securities discussed in this report are accurately expressed and that they have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report: Sandy Beatty, CFA; James E Faucette; Jeffrey D Goldstein, CFA; Michael N Infante; Jonathan Y Lee; Meryl R Thomas, CFA.

Global Research Conflict Management Policy

Morgan Stanley Research has been published in accordance with our conflict management policy, which is available at www.morganstanley.com/institutional/research/conflict/policies. A Portuguese version of the policy can be found at www.morganstanley.com.br

Important Regulatory Disclosures on Subject Companies

As of September 30, 2022, Morgan Stanley beneficially owned 1% or more of a class of common equity securities of the following companies covered in Morgan Stanley Research: Affirm Holdings Inc, Automatic Data Processing Inc, AvidXchange Holdings Inc., Block, Inc, Clearwater Analytics Holdings, Inc., Evertec Inc, Fidelity National Information Services, Fiserv Inc., Global Payments Inc, Global-e Online Ltd., Jack Henry & Associates, Inc., MasterCard Inc, nCino, Inc., Paychex Inc, PayPal Holdings, Inc., Q2 Holdings Inc, Rocket Cos Inc, Upstart Holdings, Inc., Visa Inc., Western Union Co, WEX Inc.

Within the last 12 months, Morgan Stanley managed or co-managed a public offering (or 144A offering) of securities of Affirm Holdings Inc, Enfusion, Inc., Evertec Inc, MasterCard Inc, NerdWallet Inc., PayPal Holdings, Inc., Rocket Cos Inc.

Within the last 12 months, Morgan Stanley has received compensation for investment banking services from Affirm Holdings Inc, Automatic Data Processing Inc, Block, Inc, Clearwater Analytics Holdings, Inc., Enfusion, Inc., Fidelity National Information Services, MasterCard Inc, NerdWallet Inc., PayPal Holdings, Inc., Rocket Cos Inc.

In the next 3 months, Morgan Stanley expects to receive or intends to seek compensation for investment banking services from Affirm Holdings Inc, Automatic Data Processing Inc, Block, Inc, Clearwater Analytics Holdings, Inc., Enfusion, Inc., Fidelity National Information Services, Fiserv Inc., Global-e Online Ltd., Home Point Capital Inc, i3 Verticals Inc, LoanDepot Inc, Marqeta, Inc., MasterCard Inc, nCino, Inc., NerdWallet Inc., Open Lending Corp., Paya Holdings Inc, Paychex Inc, PayPal Holdings, Inc., Q2 Holdings Inc, Repay Holdings Corporation., Rocket Cos Inc, SS&C Technologies Holdings, Inc., Upstart Holdings, Inc., Verra Mobility Corp, Visa Inc., Western Union Co, WEX Inc.

Within the last 12 months, Morgan Stanley has received compensation for products and services other than investment banking services from Affirm Holdings Inc, Automatic Data Processing Inc, Fidelity National Information Services, Fiserv Inc., Fleetcor Technologies Inc, Home Point Capital Inc, LoanDepot Inc, MasterCard Inc, Paychex Inc, PayPal Holdings, Inc., Rocket Cos Inc, SS&C Technologies Holdings, Inc., Visa Inc., Western Union Co, WEX Inc.

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: Affirm Holdings Inc, Automatic Data Processing Inc, Block, Inc, Clearwater Analytics Holdings, Inc., Enfusion, Inc., Evertec Inc, Fidelity National Information Services, Fiserv Inc., Global-e Online Ltd., Home Point Capital Inc, i3 Verticals Inc, LoanDepot Inc, Marqeta, Inc., MasterCard Inc, nCino, Inc., NerdWallet Inc., Open Lending Corp., Paya Holdings Inc, Paychex Inc, PayPal Holdings, Inc., Q2 Holdings Inc, Repay Holdings Corporation., Rocket Cos Inc, SS&C Technologies Holdings, Inc., Upstart Holdings, Inc., Verra Mobility Corp, Visa Inc., Western Union Co, WEX Inc.

Within the last 12 months, Morgan Stanley has either provided or is providing non-investment banking, securities-related services to and/or in the past has entered into an agreement to provide services or has a client relationship with the following company: Affirm Holdings Inc, Automatic Data Processing Inc, Fidelity National Information Services, Fiserv Inc., Fleetcor Technologies Inc, Home Point Capital Inc, LoanDepot Inc, MasterCard Inc, Paychex Inc, PayPal Holdings, Inc., Q2 Holdings Inc, Rocket Cos Inc, SS&C Technologies Holdings, Inc., Visa Inc., Western Union Co, WEX Inc.

Morgan Stanley & Co. LLC makes a market in the securities of Affirm Holdings Inc, Automatic Data Processing Inc, AvidXchange Holdings Inc., Block, Inc, Evertec Inc, Fidelity National Information Services, Finance Of America Cos Inc, Fiserv Inc., Global Payments Inc, MasterCard Inc, nCino, Inc., NerdWallet Inc., Open Lending Corp., Paya Holdings Inc, Paychex Inc, PayPal Holdings, Inc., Q2 Holdings Inc, Repay Holdings Corporation., Shift4 Payments Inc., SS&C Technologies Holdings, Inc., Verra Mobility Corp, Visa Inc., Western Union Co, WEX Inc.

The equity research analysts or strategists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality of research, investor client feedback, stock picking, competitive factors, firm revenues and overall investment banking revenues. Equity Research analysts' or strategists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

Morgan Stanley and its affiliates do business that relates to companies/instruments covered in Morgan Stanley Research, including market making, providing liquidity, fund management, commercial banking, extension of credit, investment services and investment banking. Morgan Stanley sells to and buys from customers the securities/instruments of companies covered in Morgan Stanley Research on a principal basis. Morgan Stanley may have a position in the debt of the Company or instruments discussed in this report. Morgan Stanley trades or may trade as principal in the debt securities (or in related derivatives) that are the subject of the debt research report.

Certain disclosures listed above are also for compliance with applicable regulations in non-US jurisdictions.

STOCK RATINGS

Morgan Stanley uses a relative rating system using terms such as Overweight, Equal-weight, Not-Rated or Underweight (see definitions below). 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. Investors should carefully read the definitions of all ratings used in Morgan Stanley Research. In addition, since Morgan Stanley Research contains more complete information concerning the analyst's views, investors should carefully read Morgan Stanley Research, in its entirety, and not infer the contents from the rating alone. In any case, ratings (or research) should not be used or relied upon as investment advice. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations.

Global Stock Ratings Distribution

(as of September 30, 2022)

The Stock Ratings described below apply to Morgan Stanley's Fundamental Equity Research and do not apply to Debt Research produced by the Firm. 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.

STOCK RATING CATEGORY	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MISC
Overweight/Buy	1342	38%	295	41%	22%	590	39%
Equal-weight/Hold	1582	45%	335	47%	21%	702	46%
Not-Rated/Hold	0	0%	0	0%	0%	0	0%
Underweight/Sell	610	17%	84	12%	14%	219	14%
TOTAL	3,534		714			1511	

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.

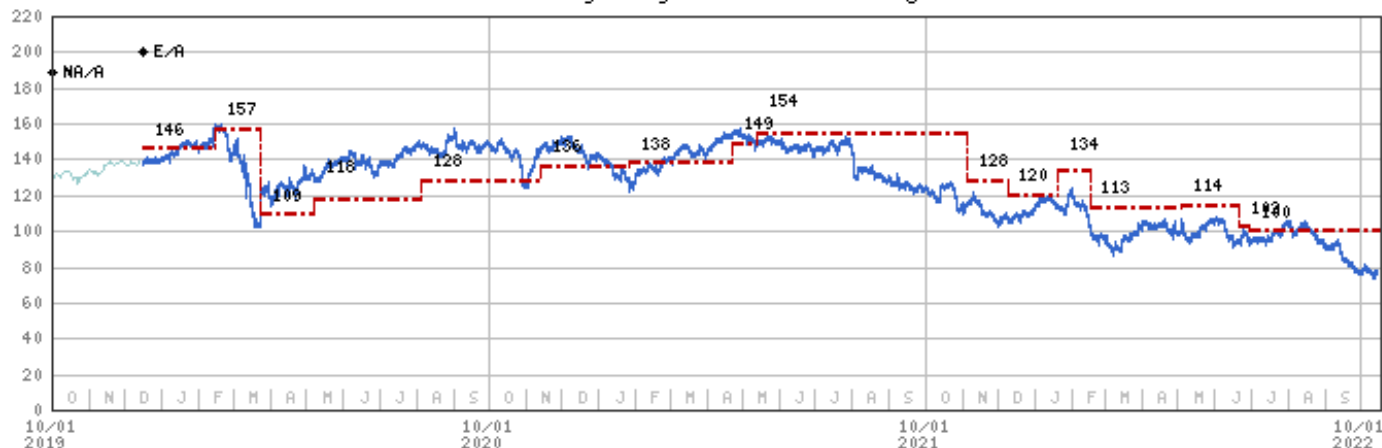
In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

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.

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.

Stock Price, Price Target and Rating History (See Rating Definitions)

Fidelity National Information Services (FIS.N) - As of 10/16/22 in USD
Industry : Payments and Processing



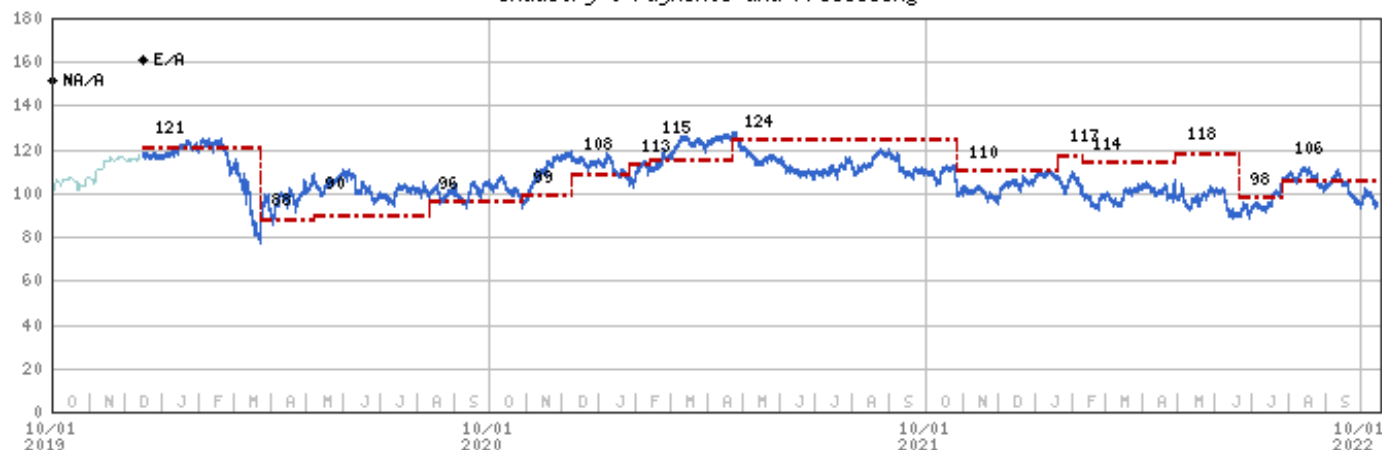
Stock Rating History: 10/1/17 : NA/I; 7/19/18 : NA/A; 12/16/19 : E/A
 Price Target History: 12/16/19 : 146; 2/14/20 : 157; 3/23/20 : 109; 5/8/20 : 118; 8/5/20 : 128; 11/13/20 : 136; 1/27/21 : 138; 4/22/21 : 149; 5/14/21 : 154; 11/5/21 : 128; 12/9/21 : 120; 1/20/22 : 134; 2/16/22 : 113; 5/4/22 : 114; 6/21/22 : 102; 6/30/22 : 100

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
 Stock Price (Not Covered by Current Analyst) --- Stock Price (Covered by Current Analyst) ---
 Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
 Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
 Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Fiserv Inc. (FISV.O) - As of 10/16/22 in USD
Industry : Payments and Processing

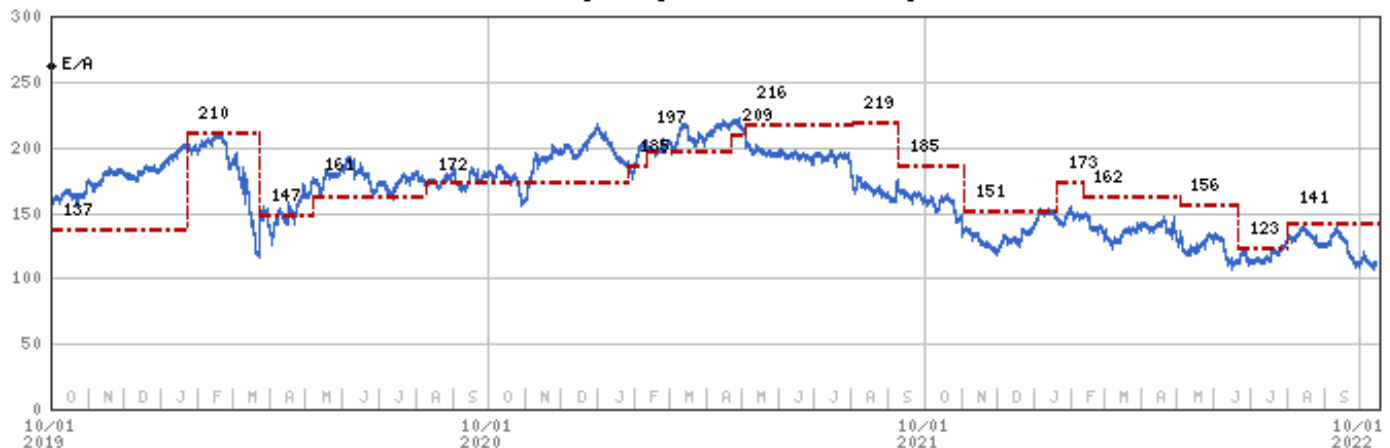


Stock Rating History: 10/1/17 : NA/I; 7/19/18 : NA/A; 12/16/19 : E/A
 Price Target History: 12/16/19 : 121; 3/23/20 : 88; 5/8/20 : 90; 8/11/20 : 96; 10/28/20 : 99; 12/9/20 : 108; 1/27/21 : 113; 2/12/21 : 115; 4/22/21 : 124; 10/28/21 : 110; 1/20/22 : 117; 2/9/22 : 114; 4/28/22 : 118; 6/21/22 : 98; 7/27/22 : 106

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
 Stock Price (Not Covered by Current Analyst) --- Stock Price (Covered by Current Analyst) ---
 Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
 Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
 Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Global Payments Inc (GPN.N) - As of 10/16/22 in USD
Industry : Payments and Processing

Stock Rating History: 10/1/17 : E/I; 7/19/18 : E/A

Price Target History: 8/3/17 : 98; 11/2/17 : 106; 11/9/17 : 110; 2/16/18 : 118; 5/3/18 : 119; 7/19/18 : 124; 8/2/18 : 125; 11/1/18 : 128; 1/28/19 : 126; 2/14/19 : 128; 5/7/19 : 137; 1/23/20 : 210; 3/23/20 : 147; 5/7/20 : 161; 8/10/20 : 172; 1/27/21 : 185; 2/10/21 : 197; 4/22/21 : 209; 5/5/21 : 216; 8/3/21 : 219; 9/9/21 : 185; 11/3/21 : 151; 1/20/22 : 173; 2/11/22 : 162; 5/3/22 : 156; 6/21/22 : 123; 8/2/22 : 141

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
 Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) —
 Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
 Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
 Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Important Disclosures for Morgan Stanley Smith Barney LLC & E*TRADE Securities LLC Customers

Important disclosures regarding the relationship between the companies that are the subject of Morgan Stanley Research and Morgan Stanley Smith Barney LLC or Morgan Stanley or any of their affiliates, are available on the Morgan Stanley Wealth Management disclosure website at www.morganstanley.com/online/researchdisclosures. For Morgan Stanley specific disclosures, you may refer to www.morganstanley.com/researchdisclosures.

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 Affirm Holdings Inc, Automatic Data Processing Inc, Block, Inc, Fidelity National Information Services, Fiserv Inc., Global Payments Inc, Home Point Capital Inc, MasterCard Inc, Paya Holdings Inc, PayPal Holdings, Inc., Q2 Holdings Inc, Verra Mobility Corp, Western Union Co, WEX Inc.

Morgan Stanley Research policy is to update research reports as and when the Research Analyst and Research Management deem appropriate, based on developments with the issuer, the sector, or the market that may have a material impact on the research views or opinions stated therein. In addition, certain Research publications are intended to be updated on a regular periodic basis (weekly/monthly/quarterly/annual) and will ordinarily be updated with that frequency, unless the Research Analyst and Research Management determine that a different publication schedule is appropriate based on current conditions. Morgan Stanley is not acting as a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Morgan Stanley produces an equity research product called a "Tactical Idea." Views contained in a "Tactical Idea" on a particular stock may be contrary to the recommendations or views expressed in research on the same stock. This may be the result of differing time horizons, methodologies, market events, or other factors. For all research available on a particular stock, please contact your sales representative or go to Matrix at <http://www.morganstanley.com/matrix>. Morgan Stanley Research is provided to our clients through our proprietary research portal on Matrix and also distributed electronically by Morgan Stanley to clients. Certain, but not all, Morgan Stanley Research products are also made available to clients through third-party vendors or redistributed to clients through alternate electronic means as a convenience. For access to all available Morgan Stanley Research, please contact your sales representative or go to Matrix at <http://www.morganstanley.com/matrix>.

Any access and/or use of Morgan Stanley Research is subject to Morgan Stanley's Terms of Use (<http://www.morganstanley.com/terms.html>). By accessing and/or using Morgan Stanley Research, you are indicating that you have read and agree to be bound by our Terms of Use (<http://www.morganstanley.com/terms.html>). In addition you consent to Morgan Stanley processing your personal data and using cookies in accordance with our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html), including for the purposes of setting your preferences and to collect readership data so that we can deliver better and more personalized service and products to you. To find out more information about how Morgan Stanley processes personal data, how we use cookies and how to reject cookies see our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html).

If you do not agree to our Terms of Use and/or if you do not wish to provide your consent to Morgan Stanley processing your personal data or using cookies please do not access our research.

Morgan Stanley Research does not provide individually tailored investment advice. Morgan Stanley Research has been prepared without regard to the circumstances and objectives of those who receive it. Morgan Stanley recommends that investors independently evaluate particular investments and strategies, and encourages investors to seek the advice of a financial adviser. The appropriateness of an investment or strategy will depend on an investor's circumstances and objectives. The securities, instruments, or strategies discussed in Morgan Stanley Research may not be suitable for all investors, and certain investors may not be eligible to purchase or participate in some or all of them. Morgan Stanley Research is not an offer to buy or sell or the solicitation

of an offer to buy or sell any security/instrument or to participate in any particular trading strategy. The value of and income from your investments may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities/instruments prices, market indexes, operational or financial conditions of companies or other factors. There may be time limitations on the exercise of options or other rights in securities/instruments transactions. Past performance is not necessarily a guide to future performance. Estimates of future performance are based on assumptions that may not be realized. If provided, and unless otherwise stated, the closing price on the cover page is that of the primary exchange for the subject company's securities/instruments.

The fixed income research analysts, strategists or economists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality, accuracy and value of research, firm profitability or revenues (which include fixed income trading and capital markets profitability or revenues), client feedback and competitive factors. Fixed Income Research analysts', strategists' or economists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

The "Important Regulatory Disclosures on Subject Companies" section in Morgan Stanley Research lists all companies mentioned where Morgan Stanley owns 1% or more of a class of common equity securities of the companies. For all other companies mentioned in Morgan Stanley Research, Morgan Stanley may have an investment of less than 1% in securities/instruments or derivatives of securities/instruments of companies and may trade them in ways different from those discussed in Morgan Stanley Research. Employees of Morgan Stanley not involved in the preparation of Morgan Stanley Research may have investments in securities/instruments or derivatives of securities/instruments of companies mentioned and may trade them in ways different from those discussed in Morgan Stanley Research. Derivatives may be issued by Morgan Stanley or associated persons.

With the exception of information regarding Morgan Stanley, Morgan Stanley Research is based on public information. Morgan Stanley makes every effort to use reliable, comprehensive information, but we make no representation that it is accurate or complete. We have no obligation to tell you when opinions or information in Morgan Stanley Research change apart from when we intend to discontinue equity research coverage of a subject company. Facts and views presented in Morgan Stanley Research have not been reviewed by, and may not reflect information known to, professionals in other Morgan Stanley business areas, including investment banking personnel.

Morgan Stanley Research personnel may participate in company events such as site visits and are generally prohibited from accepting payment by the company of associated expenses unless pre-approved by authorized members of Research management.

Morgan Stanley may make investment decisions that are inconsistent with the recommendations or views in this report.

To our readers based in Taiwan or trading in Taiwan securities/instruments: Information on securities/instruments that trade in Taiwan is distributed by Morgan Stanley Taiwan Limited ("MSTL"). Such information is for your reference only. The reader should independently evaluate the investment risks and is solely responsible for their investment decisions. Morgan Stanley Research may not be distributed to the public media or quoted or used by the public media without the express written consent of Morgan Stanley. Any non-customer reader within the scope of Article 7-1 of the Taiwan Stock Exchange Recommendation Regulations accessing and/or receiving Morgan Stanley Research is not permitted to provide Morgan Stanley Research to any third party (including but not limited to related parties, affiliated companies and any other third parties) or engage in any activities regarding Morgan Stanley Research which may create or give the appearance of creating a conflict of interest. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation or a solicitation to trade in such securities/instruments. MSTL may not execute transactions for clients in these securities/instruments.

Morgan Stanley is not incorporated under PRC law and the research in relation to this report is conducted outside the PRC. Morgan Stanley Research does not constitute an offer to sell or the solicitation of an offer to buy any securities in the PRC. PRC investors shall have the relevant qualifications to invest in such securities and shall be responsible for obtaining all relevant approvals, licenses, verifications and/or registrations from the relevant governmental authorities themselves. Neither this report nor any part of it is intended as, or shall constitute, provision of any consultancy or advisory service of securities investment as defined under PRC law. Such information is provided for your reference only.

Morgan Stanley Research is disseminated in Brazil by Morgan Stanley C.T.V.M. S.A. located at Av. Brigadeiro Faria Lima, 3600, 6th floor, São Paulo - SP, Brazil; and is regulated by the Comissão de Valores Mobiliários; in Mexico by Morgan Stanley México, Casa de Bolsa, S.A. de C.V which is regulated by Comisión Nacional Bancaria y de Valores, Paseo de los Tamarindos 90, Torre 1, Col. Bosques de las Lomas Floor 29, 05120 Mexico City; in Japan by Morgan Stanley MUFG Securities Co., Ltd. and, for Commodities related research reports only, Morgan Stanley Capital Group Japan Co., Ltd; in Hong Kong by Morgan Stanley Asia Limited (which accepts responsibility for its contents) and by Morgan Stanley Bank Asia Limited; in Singapore by Morgan Stanley Asia (Singapore) Pte. (Registration number 199206298Z) and/or Morgan Stanley Asia (Singapore) Securities Pte Ltd (Registration number 200008434H), regulated by the Monetary Authority of Singapore (which accepts legal responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research) and by Morgan Stanley Bank Asia Limited, Singapore Branch (Registration number T14FC0118J); in Australia to "wholesale clients" within the meaning of the Australian Corporations Act by Morgan Stanley Australia Limited A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents; in Australia to "wholesale clients" and "retail clients" within the meaning of the Australian Corporations Act by Morgan Stanley Wealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents; in Korea by Morgan Stanley & Co International plc, Seoul Branch; in India by Morgan Stanley India Company Private Limited; in Canada by Morgan Stanley Canada Limited; in Germany and the European Economic Area where required by Morgan Stanley Europe S.E., authorised and regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin) under the reference number 149169; in the US by Morgan Stanley & Co. LLC, which accepts responsibility for its contents. Morgan Stanley & Co. International plc, authorized by the Prudential Regulatory Authority and regulated by the Financial Conduct Authority and the Prudential Regulatory Authority, disseminates in the UK research that it has prepared, and approves solely for the purposes of section 21 of the Financial Services and Markets Act 2000, research which has been prepared by any of its affiliates. RMB Morgan Stanley Proprietary Limited is a member of the JSE Limited and A2X (Pty) Ltd. RMB Morgan Stanley Proprietary Limited is a joint venture owned equally by Morgan Stanley International Holdings Inc. and RMB Investment Advisory (Proprietary) Limited, which is wholly owned by FirstRand Limited. The information in Morgan Stanley Research is being disseminated by Morgan Stanley Saudi Arabia, regulated by the Capital Market Authority in the Kingdom of Saudi Arabia, and is directed at Sophisticated investors only.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (DIFC Branch), regulated by the Dubai Financial Services Authority (the DFSA), and is directed at Professional Clients only, as defined by the DFSA. The financial products or financial services to which this research relates will only be made available to a customer who we are satisfied meets the regulatory criteria to be a Professional Client. A distribution of the different MS Research ratings or recommendations, in percentage terms for Investments in each sector covered, is available upon request from your sales representative.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (QFC Branch), regulated by the Qatar Financial Centre Regulatory Authority (the QFCRA), and is directed at business customers and market counterparties only and is not intended for Retail Customers as defined by the QFCRA.

As required by the Capital Markets Board of Turkey, investment information, comments and recommendations stated here, are not within the scope of investment advisory activity. Investment advisory service is provided exclusively to persons based on their risk and income preferences by the authorized firms. Comments and recommendations stated here are general in nature. These opinions may not fit to your financial status, risk and return preferences. For this reason, to make an investment decision by relying solely to this information stated here may not bring about outcomes that fit your expectations.

The following companies do business in countries which are generally subject to comprehensive sanctions programs administered or enforced by the U.S. Department of the Treasury's Office of Foreign Assets Control ("OFAC") and by other countries and multi-national bodies: MasterCard Inc.

The trademarks and service marks contained in Morgan Stanley Research are the property of their respective owners. Third-party data providers make no

warranties or representations relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages relating to such data. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P.

Morgan Stanley Research, or any portion thereof may not be reprinted, sold or redistributed without the written consent of Morgan Stanley.

Indicators and trackers referenced in Morgan Stanley Research may not be used as, or treated as, a benchmark under Regulation EU 2016/1011, or any other similar framework.

The issuers and/or fixed income products recommended or discussed in certain fixed income research reports may not be continuously followed. Accordingly, investors should regard those fixed income research reports as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or individual fixed income products.

Morgan Stanley may hold, from time to time, material financial and commercial interests regarding the company subject to the Research report.

INDUSTRY COVERAGE: Payments and Processing

COMPANY (TICKER)	RATING (AS OF)	PRICE* (10/14/2022)
James E Faucette		
Affirm Holdings Inc (AFRM.O)	O (02/08/2021)	\$17.27
Automatic Data Processing Inc (ADP.O)	E (02/25/2021)	\$225.91
AvidXchange Holdings Inc. (AVDX.O)	E (04/28/2022)	\$7.87
Block, Inc (SQ.N)	E (03/23/2022)	\$55.92
Clearwater Analytics Holdings, Inc. (CWAN.N)	E (10/19/2021)	\$15.73
Enfusion, Inc. (ENFN.N)	E (11/15/2021)	\$11.75
Evertec Inc (EVTC.N)	U (03/09/2021)	\$33.31
Fidelity National Information Services (FIS.N)	E (12/16/2019)	\$77.03
Finance Of America Cos Inc (FOAN)	E (10/11/2021)	\$1.68
Fiserv Inc. (FISV.O)	E (12/16/2019)	\$94.14
Fleetcor Technologies Inc (FLT.N)	E (02/25/2021)	\$171.72
Global-e Online Ltd. (GLBE.O)	O (06/07/2021)	\$22.96
Global Payments Inc (GPN.N)	E (10/03/2014)	\$112.89
Home Point Capital Inc (HMPT.O)	E (02/23/2021)	\$1.77
i3 Verticals Inc (IIIV.O)	E (07/26/2021)	\$20.12
Jack Henry & Associates, Inc. (JKHY.O)	E (06/15/2022)	\$183.43
LoanDepot Inc (LDI.N)	E (03/09/2021)	\$1.34
Marqeta, Inc. (MQ.O)	O (05/24/2022)	\$6.50
MasterCard Inc (MAN)	O (03/28/2016)	\$295.04
nCino, Inc. (NCNO.O)	O (04/13/2022)	\$29.00
NerdWallet Inc. (NRDS.O)	E (11/29/2021)	\$10.28
Open Lending Corp. (LPRO.O)	U (07/25/2022)	\$7.00
Paya Holdings Inc (PAYA.O)	E (08/23/2021)	\$5.95
Paychex Inc (PAYX.O)	E (02/25/2021)	\$109.19
PayPal Holdings, Inc. (PYPL.O)	O (10/11/2017)	\$80.47
Q2 Holdings Inc (QTWO.N)	E (08/10/2020)	\$29.55
Repay Holdings Corporation. (RPAY.O)	E (10/05/2020)	\$6.32
Rocket Cos Inc (RKT.N)	E (08/31/2020)	\$6.95
Shift4 Payments Inc. (FOUR.N)	U (04/19/2022)	\$45.50
SS&C Technologies Holdings, Inc. (SSNC.O)	E (10/28/2019)	\$47.10
Upstart Holdings, Inc. (UPST.O)	U (06/29/2022)	\$22.94
UWM Holdings Corp (UWMC.N)	E (07/12/2021)	\$3.14
Verra Mobility Corp (VRRM.O)	E (05/26/2021)	\$15.93
Visa Inc. (V.N)	O (03/28/2016)	\$185.25
Western Union Co (WU.N)	U (02/02/2015)	\$14.10
WEX Inc (WEXN)	E (02/25/2021)	\$140.02

Stock Ratings are subject to change. Please see latest research for each company.

* Historical prices are not split adjusted.