CFRA

Industry Surveys

Data Processing & Outsourced Services

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CHARTS & FIGURES

NEW THEMES

What's Changed: The recent third-quarter results showed a healthy recovery for payment bellwethers, but we expect large upside will likely be reserved for when China removes its restrictive policy related to the pandemic. See page 14.

What's Changed: Targeted new payment flows make up approximately $70 trillion in value, providing a significant runway of future growth for the industry. What are new payment flows and what do they entail? Read more on page 18.

EXECUTIVE SUMMARY

CFRA has a neutral outlook on the Data Processing & Outsourced Services sub-industry. We remain bullish on pockets within the sub-industry (*i.e.*, payment processing and bank technology), but our view is counterbalanced by other areas (*i.e.*, HR services) that have largely priced in improving sentiment. Below, we highlight industry drivers that could drive improved fundamentals exiting 2022 and heading into 2023.

Key Takeaways Exiting Third-Quarter Earnings Season

Large payment network bellwethers continue to hold up well, notching total payment volumes (TPV) at ~140%+ of pre-pandemic levels exiting the most recent third-quarter earnings season. Initial outlined targets for FY 23 from Visa were also encouraging, calling for high-single-digit revenue growth, even after factoring in headwinds from shuttered business from geopolitical tensions and a stubbornly strong dollar. Although the purchasing power of the consumer is still a pain-point, we would point out two things: 1) some payment companies (*i.e.*, networks) remain largely agnostic across different income groups, highlighting the durability of trends across different spending buckets; and 2) many have an ability to manage its expense line to protect earnings, especially if a worst-case scenario unfolds in 2023.

Payment Exposure Matters in a Slowing Economy

Companies overly concentrated to consumer groups or spending types (*i.e.*, non-discretionary) most impacted by the rising prices of goods have experienced a large slowdown in user engagement and transaction processing volumes but have been steadily discounted into share prices and future estimates – still we think many companies with unfavorable exposure are still at the mercy of how much more contractionary policy becomes (*i.e.*, higher interest rates) to lower demand and rein in inflation. On the other spectrum, some companies remain in an enviable position, either: A) with elastic exposure across card-present, card-not-present, and cross-border payment types that shadow rapidly changing consumer preferences; or B) that naturally benefit from rising prices through transaction-based pricing (*i.e.*, basis points on ticket size).

New Payment Vectors Provide Long Runway for Future Growth

Zooming out for a longer-term perspective, companies with leverage to cash-to-card conversion trends remain in a position of strength – currently, only 10%-15% of the global payment market is carded (either physically or digitally), leaving a large opportunity for growth. We estimate sub-industry participants with meaningful exposure to software-led channels to outpace Personal Consumption Expenditures (PCE) by 3x to 5x, as consumer preferences evolve in-store (*e.g.*, contactless, and P2P) and digitally (*e.g.*, e-commerce). Similarly, payment methods that have again gained notoriety, such as Buy-Now Pay-Later (BNPL), have inserted itself in the fold and remain a growth lever for companies like Square, with its planned acquisition of Afterpay. Finally, other revenue lines, such as value-added services (VAS), have increased tremendously, as the tech-heavy offerings are spread across fraud-management, cybersecurity, and other nascent opportunities (*i.e.*, cryptos).

Watch for a Potential Uptick in HR-Related Switching Activity

Generally, HR processors have performed well, given the tight labor market. Client retention rates have crept to record highs, as switching activity remains suppressed for legacy providers, such as Automatic Data Processing and Paychex. However, we suspect the elevated figures could be due to delayed customer responses; with companies now exiting out of the “other side” of the pandemic relatively unscathed, more nimble software-led peers could be favored and lead to future market share shifts as companies adjust expense profiles and brace for looser labor market conditions. Virtually all HR-related companies will also benefit from the rising rate environment, as most earn an interest on funds (IOF) held for clients – as the federal funds rate moves higher, both investment balances and interest revenues should move in a similar pattern – we note on average, companies see a boost of $3 million to $4 million in net income for every 25-basis-point move (up or down).

DATA PROCESSING & OUTSOURCED SERVICES

Outlook: Neutral

MARKET CAP BREAKDOWN*

RANK NO.	COMPANY NAME	MARKET CAP ($ Billion)
1	Visa, Inc	433.6
2	Mastercard Incorporated	331.7
3	Automatic Data Processing	108.7
4	PayPal	91.1
6	Fiserv	64.1
7	Paychex	44.2
7	Fidelity National Info. Services	38.7
8	Global Payments	26.8
9	Broadridge Financials	17.5
10	FLEETCOR Technologies	14.1
	Others†	65.1

**Data as of November 22, 2022.*

Source: CFRA, S&P Global Market Intelligence.

†Refer to the Comparative Company Analysis section of this survey for other companies in the industry.

ETF FOCUS

VGT Vanguard Information Technology	AUM ($M) 40,589.5	Expense Ratio 0.10
XLK Technology Select Sector SPDR	AUM ($M) 39,233.3	Expense Ratio 0.10
RYT Invesco S&P 500 Equal Weight Technology	AUM ($M) 1,939.5	Expense Ratio 0.40
IPAY ETFMG Prime Mobile Payments	AUM ($M) 537.6	Expense Ratio 0.75
FINX Global X FinTech Thematic	AUM ($M) 526.89	Expense Ratio 0.68

BY THE NUMBERS

~$200 trillion Current global payments volume that is un-carded and remains a future market opportunity

140% Approximate payment volumes from large card networks when compared to pre-pandemic levels

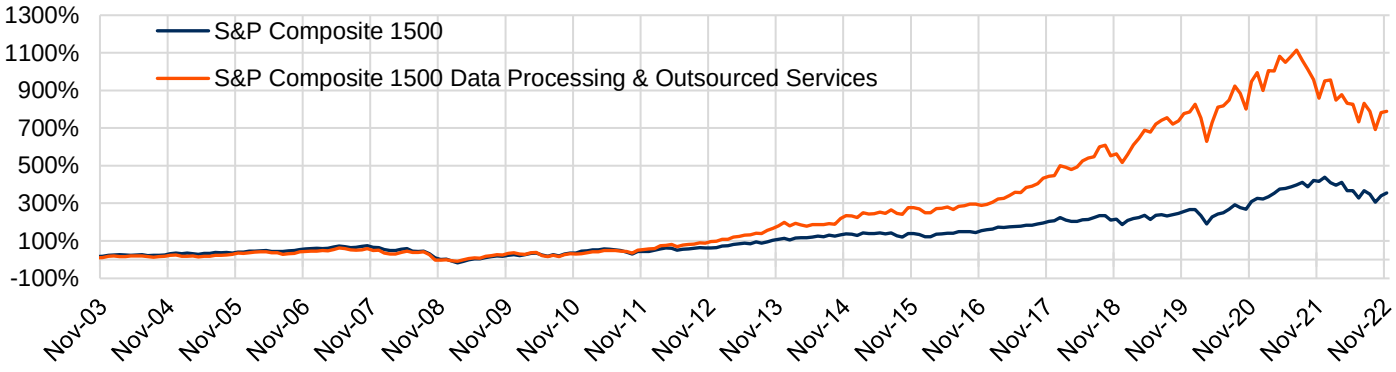
125% Mastercard's cross-border travel volume compared to pre-pandemic levels during its Q3 report

9.8% CAGR Total non-cash transaction growth rate (inclusive of Covid-19) expected through 2023

6.5% CAGR Expected rise in Bank IT spending through 2025

73% Percentage of consumer banking interactions that occur digitally

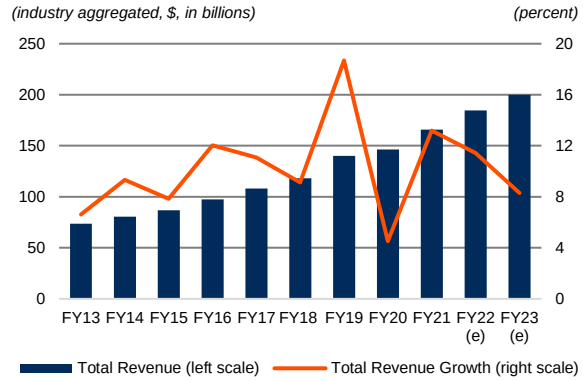
HISTORICAL INDEX PERFORMANCE*



*Data through November 2022.
Source: CFRA, S&P Global Market Intelligence.

FINANCIAL METRICS

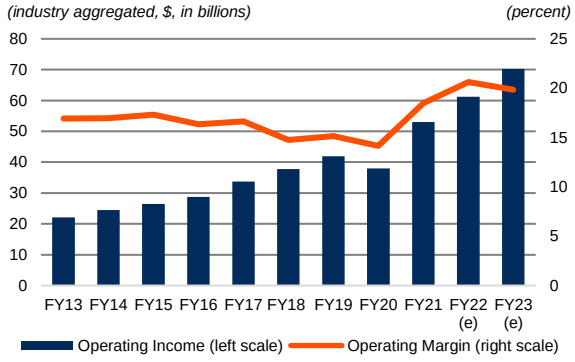
Total Revenue & Growth



e-Estimate.
Source: CFRA, S&P Global Market Intelligence.

- CFRA projects that industry-wide revenue growth will moderate to 8.3% in 2023 after a 11.4% growth in 2022. Notably, headwinds related to the Russia-Ukraine war and the strong dollar (assuming no large upward move from here) should abate toward the back-half of 2023.
- New payment flows (remittances, B2B, and Consumer Bill Pay) and stabilization in card-not-present volumes remain longer-term revenue drivers. A recovery in key regions (*i.e.*, China) will be a key vector to drive further upside in cross-border travel volumes.

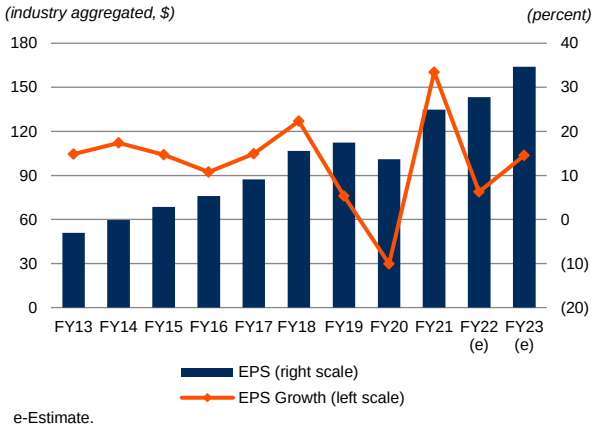
Operating Income & Margin



e-Estimate.
Source: CFRA, S&P Global Market Intelligence.

- We expect operating margin for the S&P 1500 Data Processing & Outsourced Services Index to be hovering around 19.8% in 2023, as recovery of transaction volumes and return of business activity to pre-pandemic levels are expected but marred by higher inflation and recessionary effects.
- CFRA believes any recovery in net yields for transaction processing will be important, as this will be the biggest near-term driver to margins and could provide tailwinds to profitability in 2022.

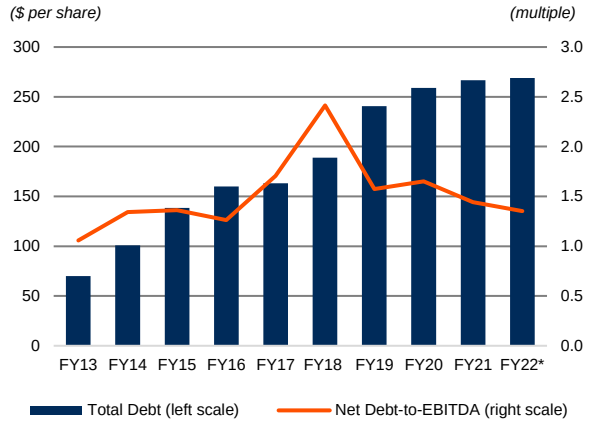
Earnings per Share (EPS)



e-Estimate.
Source: CFRA, S&P Global Market Intelligence.

- We project EPS to bounce back to a growth rate of 14.5% in 2023 after a projected 6.2% growth in 2022, as operating expense profiles are adjusted to counter the current macro environment. Most companies remain good stewards of capital through share repurchase plans, dividends, and acquisitions.
- CFRA believes that as payment volumes rise, operating leverage also improves, given the non-linear relation to variable costs. Although operating costs are expected to rise in 2022 for both Visa and Mastercard, it will be in a controlled fashion, prompting steady margin expansion for both companies.

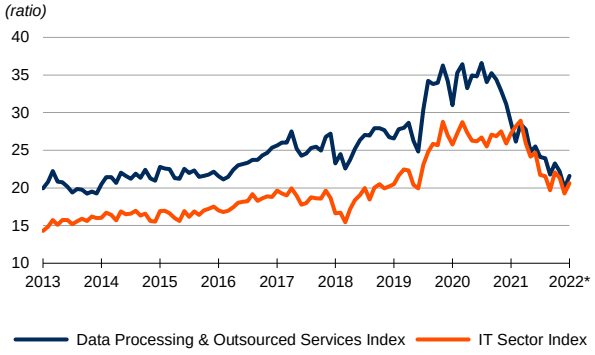
Total Debt & Net Debt-to-EBITDA



*Twelve months through third quarter 2022.
Source: CFRA, S&P Global Market Intelligence.

- Net debt/EBITDA for the S&P Composite 1500 Data Processing & Outsourced Services sub-industry rose to 2.4x in 2018, from 1.1x in 2013, showing general acceptance toward higher leverage to fund M&A and capital investments.
- In full-year 2022, net debt/EBITDA is expected to be flat at 1.4x similar to 2021. For now, we see the M&A scene to be quite active as most companies have seen large multiple compression, making them more attractive for future acquisition targets. Many companies have leaned on share buyback plans as a result of share price underperformance in 2021 and 2022.

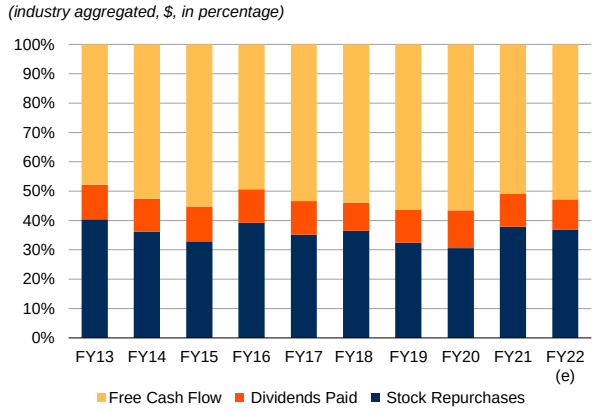
Forward Price-to-Earnings Ratio



*Data through October 27, 2022.
Source: CFRA, S&P Global Market Intelligence.

- The S&P Composite 1500 Data Processing & Outsourced Services Index forward P/E has been going down due to the geopolitical tensions surrounding Russia and Ukraine as well as high inflation.
- A combination of share price compression and earnings growth has led to recent multiple contraction. Interestingly, companies that experienced exogenous headwinds in 2022 (*i.e.*, PayPal with an eBay disengagement and steep comparables from credit reserve release) are slated to experience an acceleration in earnings growth in 2023.

Free Cash Flow, Dividends Paid, Stock Repurchases

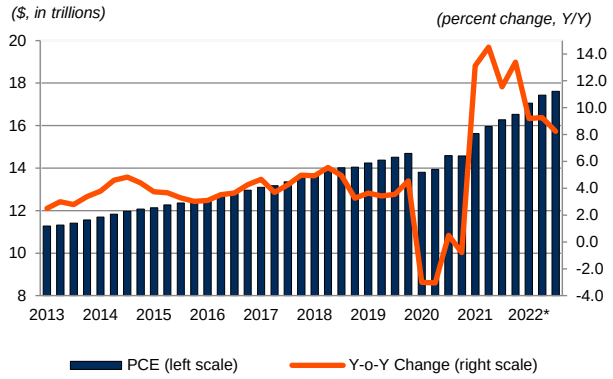


Source: CFRA, S&P Global Market Intelligence.

- Most companies should experience healthy free cash flow (FCF) levels in 2022 and 2023, driven by higher transaction volumes and controlled expense profiles.
- Notably, some companies have recently seen a drop in FCF conversion rates to support revenue growth, which translates to working capital investments.

KEY INDUSTRY DRIVERS

Personal Consumption Expenditures (PCE)

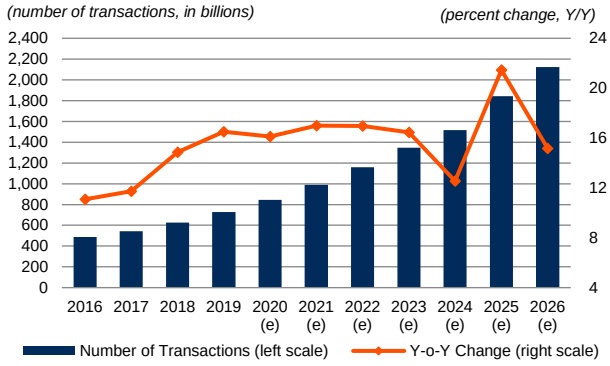


*Data through Q3 2022.

Source: Federal Reserve Bank of St. Louis.

- PCE helps gauge consumer demand and prices. PCE reached record highs in the third quarter of 2022 at $17.6 trillion, driven by a resilient spending at the consumer level and a shift to services from goods.
- However, with the terminal federal funds rate now poised to reach 4.5% (or higher), PCE will be more constrained going forward. Companies able to benefit from inflationary pressures by charging a spread based on price of ticket item and/or remaining flexible to consumer preferences likely stand a better chance of outperforming.

Non-Cash Purchase Transactions

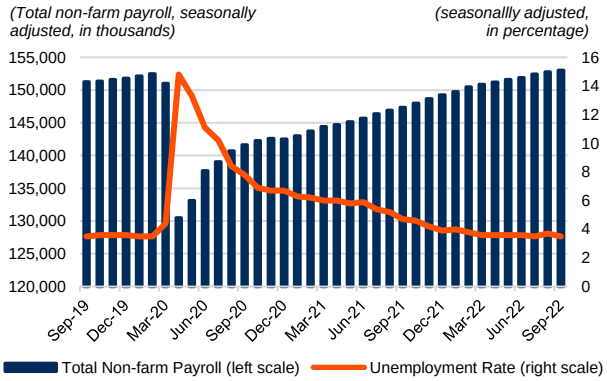


e-Estimate.

Source: CFRA, World Payments Reports 2022, Capgemini.

- Global non-cash purchase transactions are expected to surge nearly 16.9% in 2022 to 1.16 trillion transactions, compared to the similar increase (989.4 billion transactions) in 2021. The growth of non-cash transactions is driven by increasing e-commerce and digital wallet adoption in Asia-Pacific.
- We anticipate further acceptance of digital payment methods such as card-not-present or CNP (e-Commerce), B2B (cross-border), and P2P (*i.e.*, Venmo) to drive higher non-cash transactions longer-term, which remain on course to surpass 2.1 trillion by 2026.

Total Nonfarm Payroll and Unemployment Rate



Source: Bureau of Labor Statistics, Data as of September 2022.

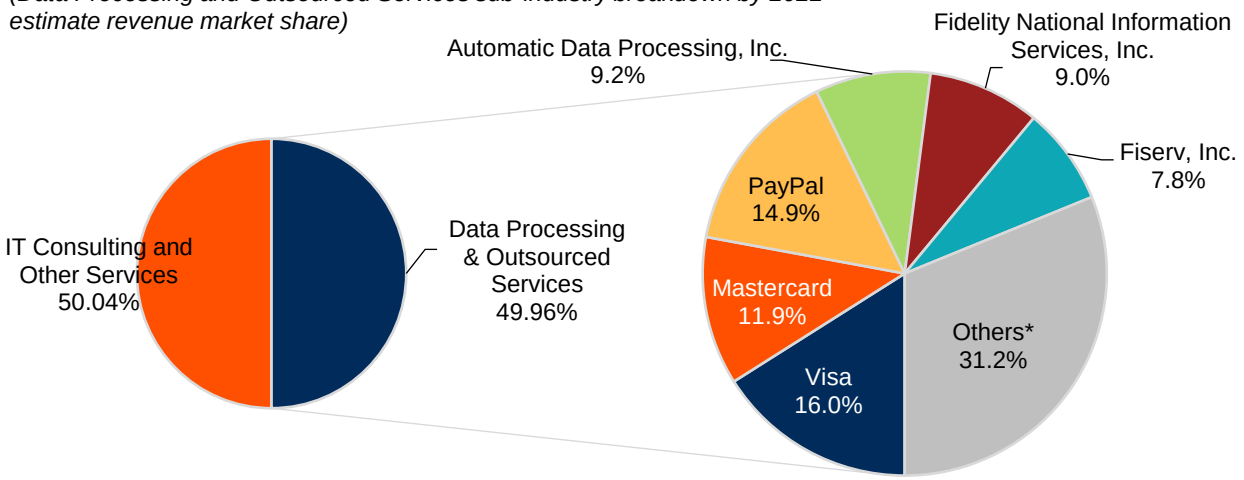
- Total nonfarm payroll measures the number of U.S. workers in the economy and gauges client health for HR services companies. In September 2022, the U.S. added 263,000 nonfarm jobs, according to the Bureau of Labor Statistics.
- The U.S. unemployment rate declined to 3.5% in September 2022 and remains a tailwind for HR services companies in the form of higher pays-per-control (*i.e.*, employee count on client payroll). Indirectly, it also implies further contractionary measures could be needed to cool the economy down.

INDUSTRY TRENDS

Although the IT Services industry is seen as largely mature, most companies have shifted their respective business models to capitalize on new trends, as some vertical markets (*e.g.*, financial technology) show promise with attractive revenue and earnings growth. In this survey, CFRA touches on companies in the Data Processing & Outsourced Services sub-industry (*e.g.*, companies that provide payment processing, HR services, and outsourcing) of the IT Services industry. (Please see CFRA's *IT Consulting & Other Services* Industry Survey for our analysis of the other sub-industry within the IT Services industry.)

Industry Breakdown

IT SERVICES INDUSTRY BREAKDOWN
(Data Processing and Outsourced Services sub-industry breakdown by 2022 estimate revenue market share)



*Refer to the Comparative Company Analysis section of this survey for other companies in the industry.
Source: CFRA, S&P Global Market Intelligence.

The Data Processing & Outsourced Services sub-industry is crowded and competitive. While larger companies dominate key areas like payments (Visa, Mastercard, and PayPal) and payroll processing (ADP and Paychex), niche companies (Fiserv, Fidelity National Information Services, and Global Payments) and startups continue to influence the rotation to newer digitized offerings like mobile payments, given evolving technologies and large shifts in consumer preferences. It often takes considerable time and thoughtful allocation of resources to increase wallet share and see higher usage rates from consumers.

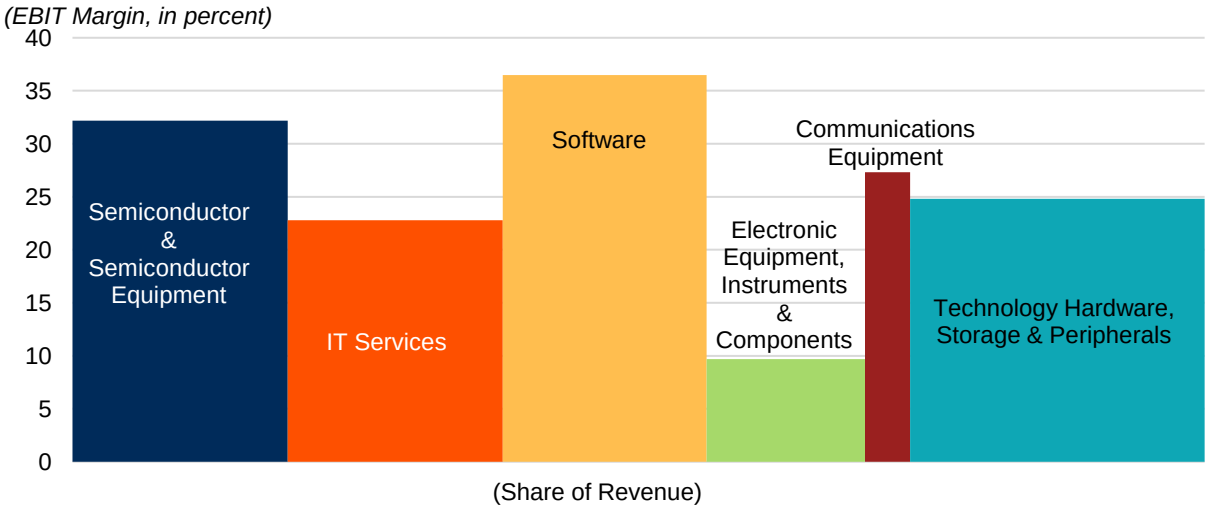
CFRA thinks established players generally have more recognized brands, bigger user bases, and more diversified and successful business models, as well as greater financial flexibility. Most data processing companies provide their products and services to other businesses, so there is not as much instant name recognition for some top-10 market-cap companies such as Fiserv, Fidelity National Information Services, and Global Payments, but we highlight that all underwent major transformations recently, with larger scale acquisitions that made news headlines.

Profit Pools

Industry Profit Share Map

Looking at the Information Technology sector, the Technology Hardware, Storage & Peripherals industry made up 25.4% of total revenue in 2022, followed by Semiconductor & Semiconductor Equipment (19.4%) and IT Services (18.8%). In terms of EBIT margin, the Software industry boasts the highest (36.5%), given the highly profitable subscription-based models many possess, followed by Semiconductor & Semiconductor Equipment (32.2%) and Communications Equipment (27.3%). The IT Services industry is near the median in terms of EBIT margin, largely due to labor-intensive aspects of select sub-industries (*e.g.*, IT consulting and outsourcing), which can carry lower profitability on a relative basis.

PROFIT SHARE MAP OF THE INFORMATION TECHNOLOGY SECTOR, 2022
(TRAILING 12 MONTHS)



e-Estimate

Source: CFRA, S&P Global Market Intelligence.

In terms of individual companies, the largest revenue contributors across the Data Processing & Outsourced Services sub-industry are Visa (16.0%), PayPal (14.9%), Mastercard (11.9%), Automatic Data Processing (9.2%), Fidelity National Information Services (9.0%), and Fiserv (7.8%). Visa and Mastercard – the market leaders – remain dominant and are known for their global payment networks that are used by most other payment providers. Notably, there are other important players in the sub-industry not tied specifically to payments, such as Global Payments (4.3%) and Broadridge Financial (3.1%), which instead focus on payroll processing and critical IT infrastructure for the financial services industry.

Competitive Environment

The sub-industry can be grouped into smaller oligopolistic market structures. For example, within payments, you have large enduring networks (Visa and Mastercard). The same applies to Issuer Processors (Fidelity National Information Services, Fiserv, and Jack Henry). Similarly, all market structures have increasingly capable and nimble software-led competitors that represent a growing threat to steal market share. For example, Paylocity, Paycom, and Ceridian have more recently emerged and directly compete against ADP and Paychex for clients of all sizes across HR Technology.

Most customers of sub-industry participants also experience competitive pressures from all sides. Banks, for instance, remain key for revenue growth in Issuer Processor markets, and must contend with regulatory measures, industry consolidation, evolving consumer preferences, and profit pressure given the low interest rate environment. Ironically, bank pressures have boosted demand for the Data Processing & Outsourced Services sub-industry, as the increased need to modernize infrastructure forces banks to outsource to other providers, like Fidelity National Information Services and Fiserv, to overhaul payment and banking technology.

Porter Five Forces

Porter's five forces, which provide a framework for industry analysis, were formulated by Michael E. Porter of Harvard Business School in 1979. In the table below, we expand on the five parameters on which an industry can be analyzed and apply them to the Data Processing & Outsourced Services sub-industry.

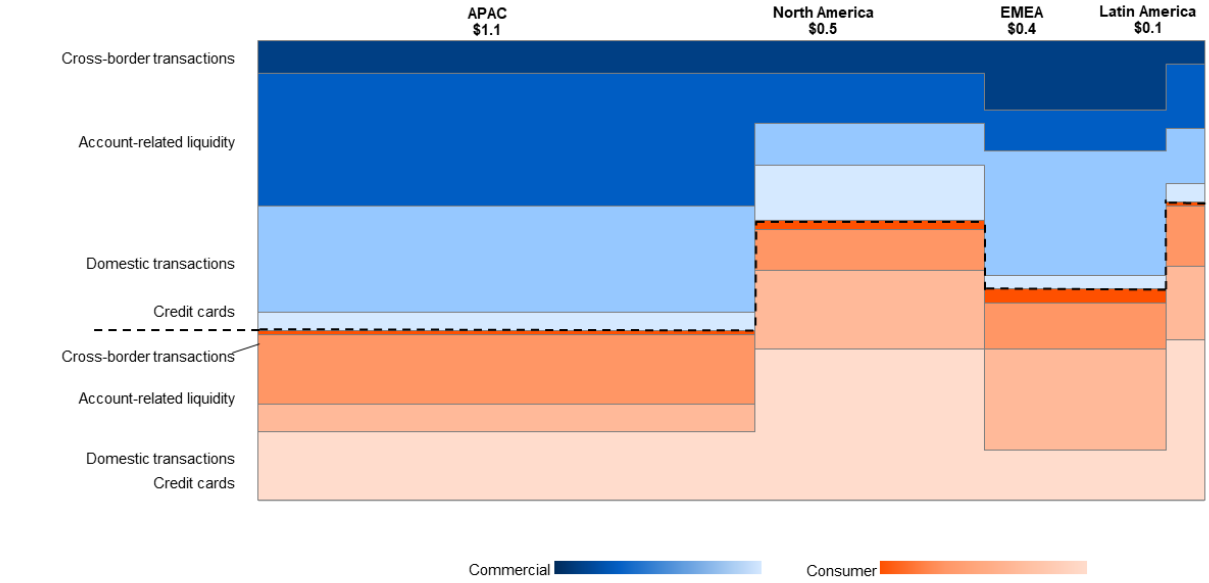
	COMPETITIVE RIVALRY AMONG EXISTING FIRMS	CUSTOMER BARGAINING POWER	SUPPLIER BARGAINING POWER	THREAT OF SUBSTITUTION	THREAT OF NEW ENTRY
DATA AND PAYMENT PROCESSING	**High** - The low switching cost (especially at point-of-sale or POS terminals) and product differentiation translates to high competition within the industry.	**Low** - Safe for a few large corporations, given merchant discount rates (MDRs) usually shadow industry-wide rates (~3%), barring the addition of premium services and reward programs.	**Low** - Low power at suppliers, given the immense number of independent software vendor (ISVs) supplying similar purpose-built solutions. Hardware (POS) is the largest area of bargaining power.	**High** - New payment methods (e-commerce, P2P, cross border and real-time transactions) prevent latency among payment players. Firms have to innovate to stay ahead of the curve.	**High** - Large capital outlays met by significant developments and disruptive new products (i.e.,digital assets) in the payments ecosystem
HUMAN RESOURCE AND PAYROLL TECHNOLOGY	**High** - Competitive backdrop consists of a duopoly (ADP and Paychex) and other small regional players. New move towards one-stop solution (comprehensive HR and outsourcing) remains a distinguisher.	**Moderate** - Companies levered towards mid-market clients (PAYX) require more complex payroll and employee benefit needs. Bargaining power at the customer is stronger, given customizable cloud-based solutions.	**Moderate** - Due to the large shift to capital-light internally developed software for the delivery of Human Capital Management (HCM) solutions.	**Moderate** - Payroll services could easily be automated. The management and consultation of human capital, however, would require human input. There is a possibility that clients would deploy in-house HR operations in the future.	**Low** - Large labor and capital investment may be required to efficiently process large volume of HR functions. Companies also need to build trust with client handling sensitive payroll and HR records.
BUSINESS PROCESS OUTSOURCING	**High** - New strides in product overall differentiation (e.g., robotic process automation or RPA) have prompted higher competition across BPO firms.	**Moderate** - Depends on client's contract size and flavor of service being provided. The large move away from commoditized pricing has kept customer bargaining power lower.	**Low** - Most BPO companies have small ties to tangible products. Most risk lies with cloud service providers and software vendors during large customer ramps.	**High** - Recent move from commoditized workflows (like call centers) to more comprehensive work has led to differentiators and more competition.	**Low** - Large capital outlays and assess to correct mix of headcount to develop newer workflows (like RPA) largely inhibit new entrants.

Source: CFRA

Operating Environment

Global Payments – Total Addressable Market (TAM)
Total global payment revenues are expected to be $2.1 trillion in 2021. From a geographic perspective, payment revenue growth continues to be dominated by the Asia-Pacific region, which accounted for approximately 52.3% ($1.1 trillion) of global payments in 2021. Beyond Asia-Pacific, EMEA's increase reflected more broad-based growth in electronic transactions, but was tempered by recessionary conditions. Latin America and North America each grew at a still-robust 7%, as widespread strength across both commercial and consumer channels helped fuel trends.

PAYMENTS REVENUE IN 2021
($, in trillions)



Source: McKinsey Global Payments Report 2022, released in October 2022

Interestingly, when expanding the analysis to payment volumes, and not just revenues generated, the amount swells due to a compounding effect (*i.e.*, numerous payments are made for same product and services output), to more than $200 trillion, or more than two times global GDP. Not surprisingly, outsized transaction growth tilts towards Asia-Pacific, given two-thirds of both transactions and revenues come from the area. Within the region, close to 53% of the commercial-driven revenue is directly correlated to a large level of electronic transactions.

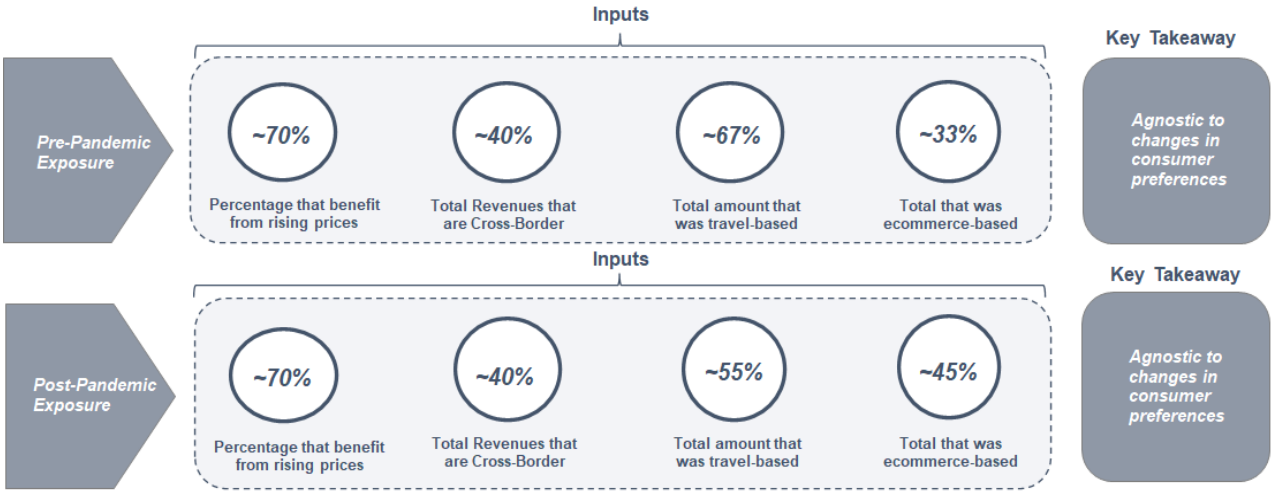
More recent data from large network payment bellwethers (*i.e.*, Visa and Mastercard) highlighted areas of weakness (*i.e.*, card-not-present) and strength (*i.e.*, cross-border travel), highlighted in dark blue on the "Payments Revenue in 2021" chart above. Headwinds have been particularly acute in the Asia-Pacific region, as different Covid-19 variants have prevented a full reopening of economies.

Large payment network companies have done a good job orchestrating a recovery in cross-border travel volumes, with levels hovering over 100% of pre-pandemic levels, meaningful upside could be limited until restrictions are fully lifted. Additionally, while debit volumes growth remains strong (10%+ growth Y/Y), credit volumes have played catch-up, as consumers increasingly lean on other sources of spending power with disposable income and savings rates on the decline. Exiting the most recent calendar quarter (third quarter of 2022), both Visa and Mastercard notched gross dollar volumes (GDV) at 140%+ of pre-pandemic levels.

Why Some Companies Have Held Up Better Than Others

Covid-19 has had a profound effect on all participants across the payment value chain. The pandemic pressured revenue lines, as economies were shuttered and payment volumes were severely impacted. Still, following a few spurts of volatility from Covid-19 variants entering 2022, most companies have seen a recovery in transactions, as business and the propensity for consumers to spend have recovered.

When entering the pandemic, we note travel-specific (both business and leisure) volumes made up roughly two-thirds of revenues for Visa and Mastercard, with the other third coming from card-not-present (CNP or e-commerce) transactions. When travel started to roll over from lockdowns, CNP volumes helped soften the blow for some, and revenue mix literally took a 180-degree turn (*i.e.*, two-thirds attributed to CNP) – tides eventually turned once again as experiences (*i.e.*, travel and entertainment) were favored.



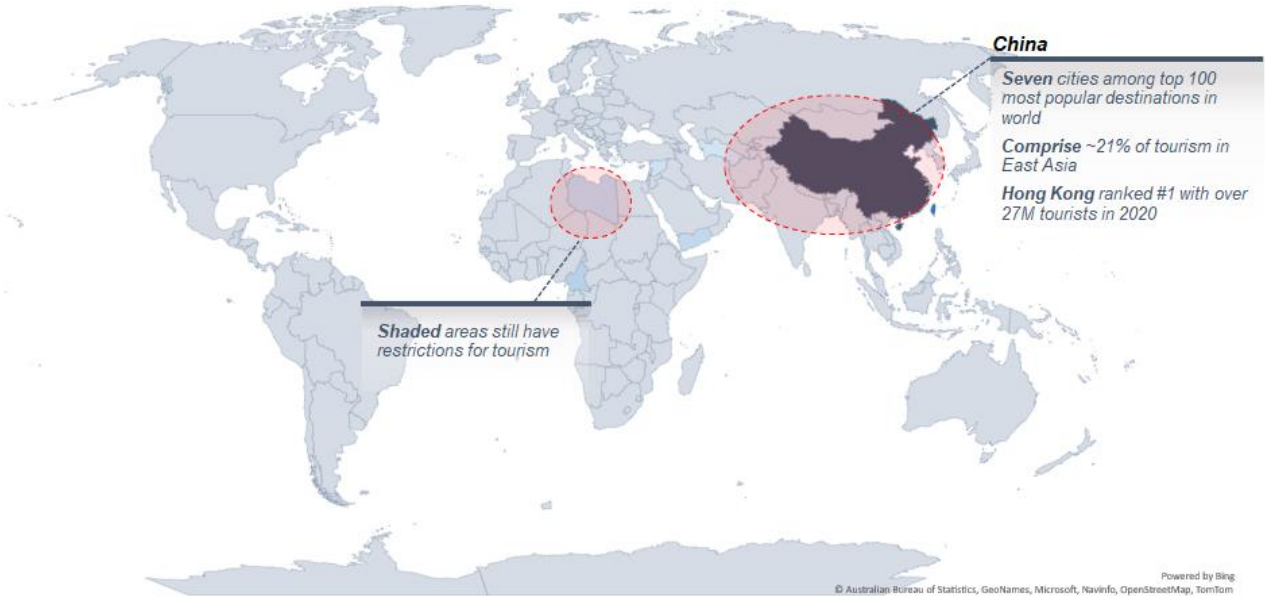
Note: Percentages are approximated.
Sources: CFRA and Company Filings.

The shift was also further stoked due to select regions of cross-border activity containing higher yields (*i.e.*, inbound travel to the U.S.), which provides a one-two punch combo for profitability, with higher volumes and favorable mix. Today, the split between e-commerce and travel remains roughly even (*i.e.*, 50/50 split), versus where it was previously (*i.e.*, two-thirds e-commerce vs. travel split), highlighting the notion that flexible business models have allowed some (Visa and Mastercard, among others) to absorb large shifts in preferences (*i.e.*, goods-to-experiences) brought on by the pandemic and some of the shocks from a contractionary monetary policy.

Another key growth vector, B2B transactions, will likely become an increasingly large component of the story, as traditional payment methods, such as corporate card and cross-border, see usage edge higher. That said, we note there are very distinct differences between B2B and B2C transactions. For example, with Visa's cross-border payment business, volumes are driven by consumers traveling between countries or purchasing goods digitally (B2C). On the other hand, FleetCor's business has the same core concept but facilitates transactions for international trade (B2B) and is not as dependent on a travel recovery and overall consumer activity.

Asia-Pacific Remains a Lynchpin to Travel-related Upside

To be clear, we are not bearish on travel prospects at payment bellwethers but do believe near-term expectations could need to be level-set. A healthy recovery extended into recent third quarter results, but large upside from already elevated levels will likely be reserved for when China removes its restrictive policy related to the pandemic. We expect Mastercard to work through headwinds a tad better than its network counterpart, Visa, given it has smaller exposure to China – we note recently pulled down data points suggest Mastercard has already restored ~75% of inbound China volumes when compared to pre-pandemic levels.



Source: CFRA, Company Filings, worlddata.info.

Electronic Payments – Key Growth Accelerant

As world economies opened up, a spending boom fueled by the ease of non-cash transactions took hold and was expressed through a steady rise in Personal Consumption Expenditures, or PCE, in CFRA's view. The large networks (Visa and Mastercard) currently account for roughly half of U.S. volumes and will likely steadily gain over the next 5-10 years, by CFRA's calculations.

Effects from stimulus are wearing off around the world, and further growth in P2P transactions (*i.e.*, Cash App and Venmo) is expected to taper off. High inflation, supply chain pressures, and an increase in BNPL transactions are factors that will weigh on P2P transactions in the near term, in CFRA's view. Meanwhile in China and other Southeast Asian countries, the upcoming holiday season is expected to be a much better affair than last year.

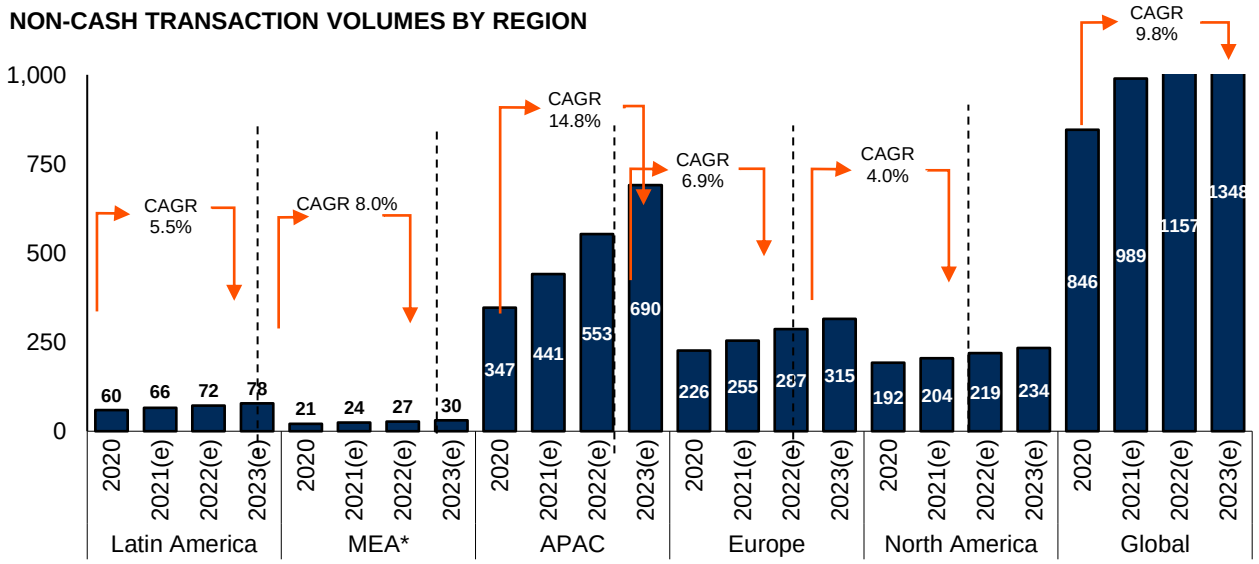
According to Alibaba and JD.com, as of November 11, 2021, the gross merchandise values (GMV – a metric used to determine the total value of merchandise sold over a period of time) for last year's "Singles Day" event (an 11-day day promotion) were, respectively, $84.5 billion (15% increase from 2020) and $54.6 billion (28.6% increase from 2020). According to the e-Conomy SEA 2021 report by Google, Temasek, and Bain, the Southeast Asian region's GMV could reach $1 trillion by 2030 as non-cash transaction benefits are increasingly seen as convenient and safer.

An interesting trend that can be noted during China's Singles Day sales event is the use of digital currency or, in other words, central bank digital currency (CBDC). According to the People's Bank of

China (PBOC), e-CNY is the digital version of fiat currency issued by the central bank and operated by authorized operators, and it is mainly a substitute for cash in circulation. While this digital currency is not rolled out officially throughout the nation, JD.com has accepted this form of payment for its Singles Day event and a little over 100,000 people had used this digital currency on its platform. In CFRA's view, the commercial success of e-CNY will see other nations follow suit in experimenting with larger scale use of CBDC, firstly in the retail space within the nation and then eventually exploring cross-border payments.

CFRA also highlights the shift in payment preference globally as cards continue to increase market share in payment services. According to the "World Payments Report 2020" by Capgemini, the debit-to-credit-card ratio has shifted from 59:41 to 90:10 over the past 10 years, due to Basel III and credit policy changes, which have mitigated some of the margin opportunities available via credit cards. We also note the sequence of Europay, Mastercard, and Visa (EMV) issued cards supporting this trend (debit before credit), which also have contributed to the shift.

NON-CASH TRANSACTION VOLUMES BY REGION



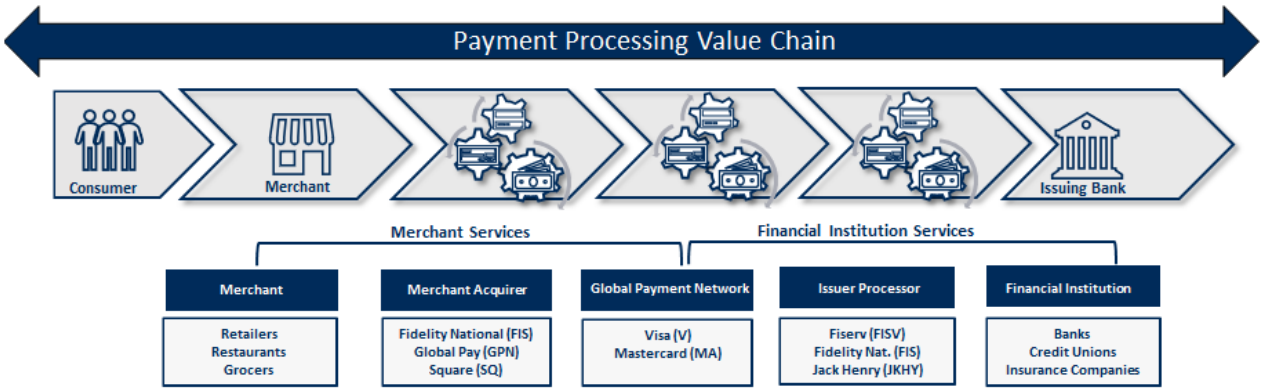
*Middle East and Africa.
Source: CFRA, Capgemini.

In CFRA's view, during the height of the pandemic, money movement spiked as people sent money digitally to loved ones because they were quarantined. Most P2P transactions are debit-based, creating a huge spike in volumes, which was only augmented by stimulus. However, as tailwinds wear off, we are witnessing credit volumes beginning to outpace debit as a preferred method of payment given some consumers have burned through stimulus checks and/or want to get out and purchase in store.

Globally, CFRA estimates non-cash transactions will now grow at a three-year CAGR from 2020 to 2023 of 9.8%. As economies recover, we think developing markets will continue to outpace mature regions, as Asia-Pacific, MEA, and European markets remain higher-growth areas and are expected to increase at an annual rate of 14.8%, 8.0%, and 6.9% respectively. Developing countries have also noted that more consumers are embracing digital payments for everyday purchases. For example, almost 75% of MEA consumers have reported shopping online more after the pandemic and 95% are willing to consider using different emerging payment instruments, according to Capgemini.

Data and Payment Processor Value Chain

To effectively identify specific trends and challenges across the sub-industry, one needs to understand the individual roles of participants. Below, we have included the key players within the payment processing subset. For further explanation, we have broken out key themes for each main tenet (*i.e.*, acquirers, networks, and issuers) below. Additionally, readers can gain future insight into how transactions are processed and the roles of each participant in the "How the Industry Operates" section of this survey.



Source: CFRA, Company Filings, and worlddata.info.

Ironically, most companies currently operate under a "friend and foe" dynamic, and on dominant global payment networks (*i.e.*, Visa and Mastercard), or "rails" as many call it, that facilitate money movement. The payment networks connect 3.5+ billion consumers, 13,000 banks, and 700+ million merchants to acquirers and issuers for a transaction fee that is split across all participants. More recently, market participants have started to include value-added services (VAS) to boost customer loyalty and minimize fraudulent transactions. Longer-term, we think these ancillary add-ons can provide a large boost in transaction economics (revenue per transaction or RPT) across all levels of processors.

Core bank technology providers (*i.e.*, issuer processors), including Fidelity National Information Services, Fiserv, and Global Payments, have entered the merchant acquirer space via M&A to establish pole positions across multiple roles of the payment processing value chain and ensure emerging competitors do not eat into growth in coming years. In a nutshell, we suspect companies did this to 1) jump-start growth with exposure to a faster-growing merchant acquiring channels, and 2) leverage existing distribution channels to sign new clients and sell multiple products (*i.e.*, automated invoicing and payables) to compound growth across multiple sub-segments.

Additionally, there has also been an emergence of private network-based companies, like FleetCor and Wex, which operate in a largely untapped market, facilitating B2B transactions. Most companies under the B2B category remain highly profitable, given their subscription-based contracts are nicely complemented with an interchange (*e.g.*, processing fee) model, as they handle payment transactions (automated clearing house or ACH, electronic check, and virtual cards), but do so on their own custom networks.

Lastly, another factor to consider for this sub-industry is most companies, other than Bread Financial (BFH), do not extend credit lines through private label and/or co-branded cards, nor generate any fees on account receivables as a major source of revenues. As a result, companies are not exposed to significant amounts of consumer-specific credit risk.

Merchant Acquiring Processing (Front-end)

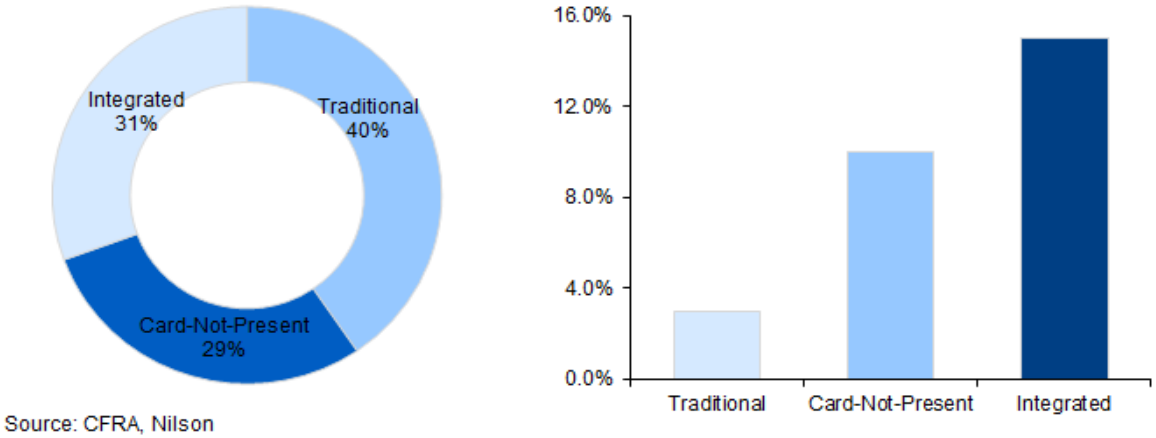
Technology-Enabled Payments an Attractive Avenue for Future Growth

Merchant acquiring has seen monumental changes over the past few years, as companies have either organically, or through M&A, built out a full stack of software, versus legacy processing, where they strictly offered brick-and-mortar point of sale (POS) solutions. As a result of the industry change, merchant acquirers have expanded their capabilities into other areas (*i.e.*, payroll, security, and loyalty), but the key role remains the same, where they settle card transactions for a merchant and authorize payments from networks.

Not surprisingly, tech-enabled payments have greatly outpaced traditional methods dramatically (mid-teens vs. low-single percentage growth), as e-commerce and software-led payments have been key growth engines, even with Covid-19. CFRA notes that before the pandemic hit, roughly half of payment revenues in the U.S. were still processed via traditional POS solutions. We expect this number to move dramatically lower (over 10 points in some regions) as Covid-19 spurs years of change in a few months.

Merchant Acquiring Growth Channels

(Left Chart -- Payment Volumes Mix and Right Chart -- Growth Rates from 2019-2022)



Source: CFRA, Nilson

E-commerce Trends Remain a Future Growth Lever

Merchant acquirer roles in the payment ecosystem continue to become more powerful as electronic transactions remain a game dominated by sheer size and scale. Since the lockdown in late March 2020, where thousands of small- and mid-sized businesses (SMBs) were forced to shut down, merchant monthly volumes have recovered from 50%+ declines to 5%+ increases, and in some cases, much more. We suspect any outperformance from acquirers, who usually shadow the large payment networks, is due to the mix of exposure to e-commerce and integrated capabilities.

The migration from shopping via brick-and-mortar stores to online commerce is a key driver for tech-enabled payments. As prevalent as e-commerce is, the U.S. Department of Commerce reported that this segment still only makes up 20% of global retail spending in 2021, leaving huge upside in terms of transaction volume and revenues. CFRA thinks e-commerce could provide a tailwind to merchant acquirers that facilitate these transactions, given that the adoption of ordering groceries online, restaurant take-out, and health supplies has increased dramatically. Looking ahead, e-commerce volumes are expected to grow by high-single-digit levels in 2022.

In the U.S., the six largest U.S. merchant acquirers in 2021 were J.P. Morgan, Worldpay from FIS, Fiserv, Global Payments, Wells Fargo, Bank of America Merchant Services, and Elavon, according to a report

released by Nilson Report in March 2022. As e-commerce payments are card-not-present transactions, CFRA forecasts these merchant acquirers will earn a higher-margin interchange fee to account for risk. Increasingly, e-commerce is also driving cross-border payments, which carry higher fees.

Lastly, significant changes due to e-commerce, omnichannel, and integrated products (defined in the section below) continue to drive higher adoption levels across consumers and merchants. CFRA notes that many data processors continue to leverage above-average growth in payment processing for SMBs. Many merchants now opt for competitively priced integrated solutions that streamline the payment process while meeting customer expectations. The increase of business-friendly and integrated solutions will likely help augment growth prospects, in our view.

Integrated Payments – A Growing Market Opportunity

Integrated payments, or the software-led solutions that merge multiple business lines (*e.g.*, general ledger and human resources management) with payment processing, are becoming key in the payment landscape, as they reduce friction with easy-to-integrate merchant applications. Covid-19 fears could be enough of a catalyst to introduce more seamless payment methods, such as mobile contactless, contactless card, and app-based card-not-present payments, and group with other business processes through only one provider, in CFRA's view.

Integrated payment offerings are achieved by two different methods. Merchant acquirers can either build their own platform (*i.e.*, Fiserv or Square), or partner with other Independent Software Vendors (*i.e.*, Fidelity National Information Services). More recently, companies combined both a partnered and built approach (*i.e.*, Global Payments) to extend reach to all sizes/types of merchants. Reason being, while the SMB segment sees higher interchange (*i.e.*, pricing), attrition in the group is much higher than larger merchants. Thus, a balanced approach between all sizes of merchants could come in handy if idiosyncratic events (like Covid-19) occur.

As this theme has developed, we think it altered how merchants value point-of-sale terminals. Once seen as a rather archaic standalone device that executed a single task (processing payments), the hardware is now part of a complete roadmap, with multiple touchpoints across the business. We think this is an important aspect, given it helps level the playing field for payment laggards of the past by providing the necessary framework to deliver seamless payment/non-payment SMB ecosystems.

New Payment Flows to Keep an Eye On

Mastercard currently projects people-to-merchant (P2M) payments comprise a ~$45 trillion addressable market and includes a key revenue driver (*i.e.*, consumer payments) at ~$8 trillion. However, we would point out targeted new payment flows make up an additional ~$70 trillion in value, providing a significant runway of future growth; overarching areas are comprised of disbursements and remittances, commercial point of sale, and B2B accounts payable payment flows.

An example of "new payment flows" under the disbursement and/or remittance area is push-to-card payments, which actively allow cardholders to push money to other cardholders; the payment type is commonly used for peer-to-peer (P2P) payments but has since moved into business-to-business and consumer-to-business payment flows.

Interestingly, because you are essentially leveraging existing card rails of open-looped payment networks in reverse order (*i.e.*, pushing payment flows instead of pulling out of an account), you only need the payee's card details to initiate the payment, making settlement real-time, faster than a traditional bank transfer. Both large open-looped networks offer push-to-card services called Visa Direct and Mastercard Send. We note growth has been immense; Visa Direct grew 36% in FY 22 (excluding Russia) reaching nearly 6 billion in total transactions.

KEY FEATURES OF PUSH-TO-CARD SERVICES

Speed	Simplicity	Security	Scale
Transactions are processed in real-time	An improved customer experience to enable instant payments to all eligible debit or prepaid cards	A safe way to pay your customers, backed by Visa's leading payment security	The support of Visa's trusted expertise and capabilities to help you as you launch, grow, or enhance the payment

One Solution, Multiple Applications

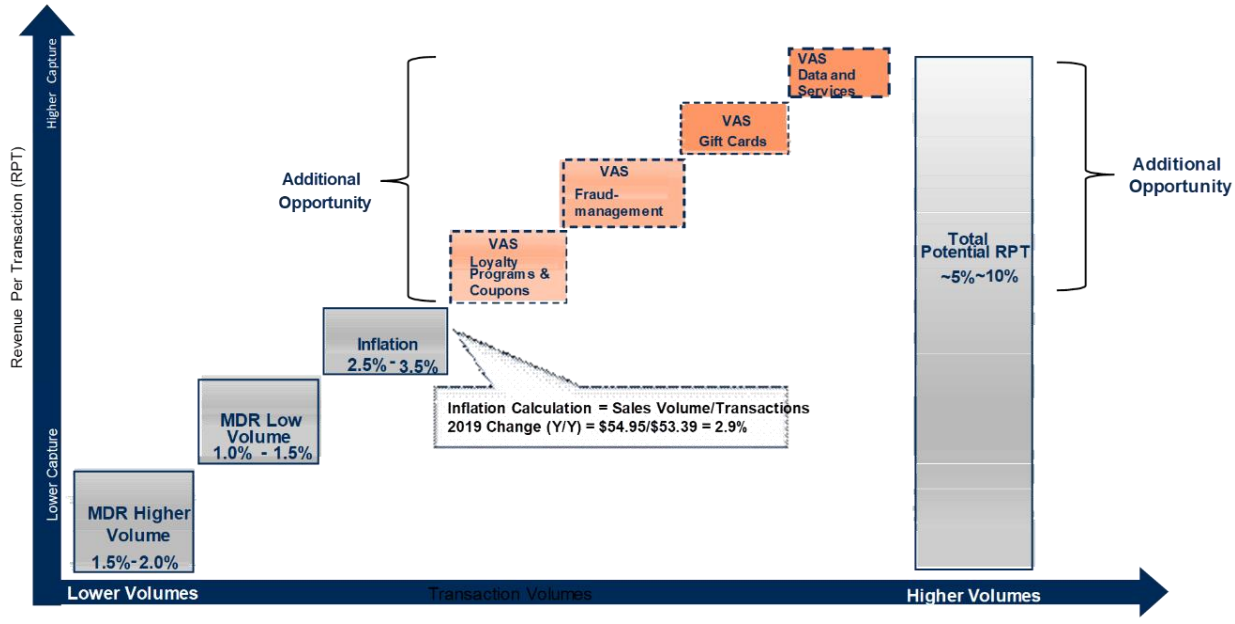
- Funds Disbursements
- Person-to-person (P2P) Payments

Source: CFRA, Company Filings.

Improving Economics with Value-Added Services

Digital engagement remains a vital component for many data processing and outsourced services participants. Digital channels will likely contribute 40% or more of payment volume going forward. One such channel is Visa Direct, which allows cardholders to send and receive cross-border payments. For payment-oriented names, we think VAS could command higher revenue per transaction (RPT) beyond the traditional merchant discount rate (MDR), which is about $3 on a $100 transaction.

VALUE ADDED SERVICES (VAS)



Source: CFRA, Infinicept, and Nilson Report

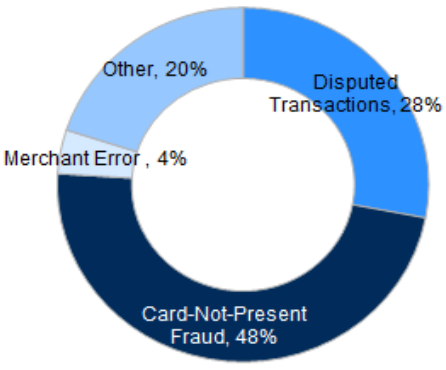
One of the important aspects that affect RPT is the average ticket prices for goods, which is effectively inflation. As inflation moves higher, this ultimately will boost the average ticket prices for goods as a result of improving economic conditions. This would create a tailwind for select payment verticals, such as merchant acquirers, given more expensive goods usually have positive margin effects. Recently, the U.S. inflation rate climbed to 8.2% in September 2022, hovering around the highest levels since the early 1980s due to a rise in consumer goods and services, including food, housing, and energy prices.

CFRA forecasts that additional services, such as loyalty programs, automated loan application processing, and fraud detection, could drive levels toward 10% per transaction in an upside scenario, as merchants and/or consumers become willing to pay premiums for higher authorization rates and features on transactions. To put this into perspective, the average authorization rate for total card-not-present (or e-commerce) transactions is currently about 85% (*i.e.*, 15% of transactions are declined or considered fraudulent). This remains significant on a company basis, in our view, given the large chunk of absent transaction fees.

In recent years, 70% of VAS has been dominated by large enterprises and growing at an average of 8%-10% per annum. Of note, many large enterprises with large transaction volumes are usually entitled to lower fees, translating into lower RPT for payment processors. The remaining 30% of VAS came from SMBs, but the segment is poised to grow exponentially around 40%-50%, which will generate higher profitability compared to large enterprises. Similarly, a resurgence in credit volumes should also act as a tailwind for VAS, especially when coupled to other ancillary services (*i.e.*, buy-now-pay-later as well as discount engines, like PayPal's Honey platform).

Acquirers that can prevent fraudulent transactions help alleviate pressures and increase their value proposition for merchants by reducing the number of chargebacks needed. Chargebacks, or a forced reversal of a payment transaction disputed by a consumer, weigh on merchants from multiple angles. Not only do actual transaction costs increase (every $1 disputed equates to a cost of $1.50 for the merchant), as the merchant is on the hook for the fraudulent transaction, but the process is lengthy and can take up to three to four months to settle.

Chargeback Breakdown and Authorization Rate Matrix
(Left Chart -- Method of Chargeback and Right Chart -- Authorization Rates)



Rate Improvement (%)	Transaction Value Increase ($M) 5%	10%	15%	20%
1-pt	6.3	11.6	17.2	23.1
2-pt	7.6	13.0	18.7	24.6
3-pt	8.9	14.4	20.1	26.1
4-pt	10.3	15.8	21.6	27.6

Source: CFRA, ProcessOut, Company Filings

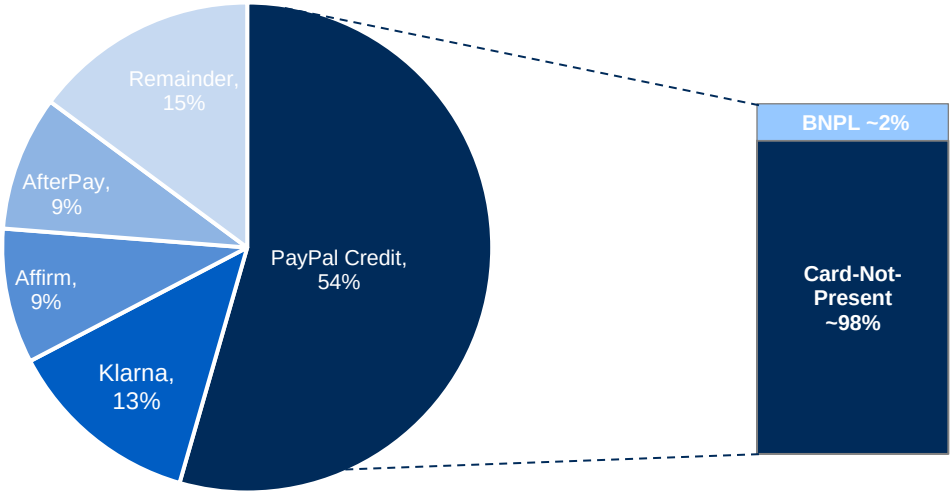
The importance of authorization rates is only amplified by cross-border transactions and other various payment methods, such as automated clearing house (ACH), wire, and real-time, at a consumer's disposal. The figure above illustrates the uplift in transaction value retained by a merchant from a 1-pt to 4-pt improvement in authorization rates on a $100 million base. We then build upon that, scaling in higher transaction values to show the total effect, which would be money that directly flows back to the merchant.

Buy-Now-Pay-Later (BNPL) – A Growing Payment Method

Consumers have increasingly turned to BNPL options to skirt higher interest rate charges from traditional credit cards. The move not only allows consumers to pay for goods through a four-month payment/installment plan, but also boosts spend at the point of sale by 50%+ in some cases, which is a net beneficiary for payment facilitators.

Buy-Now-Pay-Later

(Left Chart -- Market Share by User; Right Chart -- BNPL as Percentage of E-commerce Transactions in 2020)



Source: CFRA, Company Reports, WorldPay.

Ironically, BNPL has been around for decades, but it has been brought to the forefront following Square's acquisition of Afterpay and PayPal's of Paidy, and we would argue the implications for most in the payment complex are positive. As a reminder, most companies in the sub-industry don't charge merchants for the specific BNPL payment method but reap benefits through increased user engagement and increased numbers of transactions, which bears little risk to both parties.

PayPal Credit remains the leader in terms of users currently using installment method payments, given it's been around since 2008 through its acquisition of Bill Me Later. Looked at differently, according to Worldpay, global e-commerce transactions totaled $4.6 trillion dollars in 2020, up 19% from the year prior; of that total, BNPL totaled roughly $97 billion, or 2.1% of that total e-commerce amount, but is expected to double by 2024, given the number of companies entering the space and overall increased adoption as an accepted method of payment for both merchants and consumers.

Issuer Processing and Bank Technology (Back-End)

Bank Technology and Issuer Processors Bumping Up Against Mixed Market Crosscurrents

According to the Federal Deposit Insurance Corporation (FDIC), only 67 de novo bank applications were filed from 2010 to October 2022 (versus 1,323 from 2000 to 2009), or approximately six on average per year. Whether the blame is to be placed on tepid interest rates crimping bank profitability through lower net interest margins (NIMs) or strict regulatory restrictions, the lull in formations is not without just cause following the 2008-2009 recession.

Following the clampdown on discretionary IT spending in 2020, demand slowly recovered within the banking industry. The key message is that while the total bank count remains stagnant, the current focus for spending remains in transformational areas, such as digital, commercial, and risk management. As a reminder, many banks and financial institutions are still running on infrastructure more than three decades old and are now approaching a crossroad of either having to build out technology stacks internally, which is very capital intensive, or offloading the burden to third-party companies.

Although recent request for proposal (RFP) activity has slowed, we attribute the pushout in sales cycles to macroeconomic uncertainty, rather than a structural change in competition, given what the contractionary conditions have done to venture capital (VC) funding, as many companies have turned to survival mode by carving out costs through headcount reductions.

Banks Diligently Modernizing Their Systems

The move to modernize banking systems remains in full force, and CFRA notes that any increase in discretionary spending from the banking industry would be a tailwind for the Data Processing & Outsourced Services sub-industry. Spending on bank technology is crucial to enable new capabilities that are executed by mobile phone, tablet, and computer, as consumer expectations continue to increase. This becomes even more important, in CFRA's view, now that Covid-19 likely accelerates the shift away from physically conducting business in a bank branch or credit union.

Key companies that operate in this sub-industry vertical are Fiserv, Fidelity National Information Services, and Jack Henry. Most contractual relationships are longer-term in nature at 5+ years, with high renewal rates of 90%+, which usually results in more predictable fundamentals. Below, we highlight the key factors for customer, revenue, and margin growth.

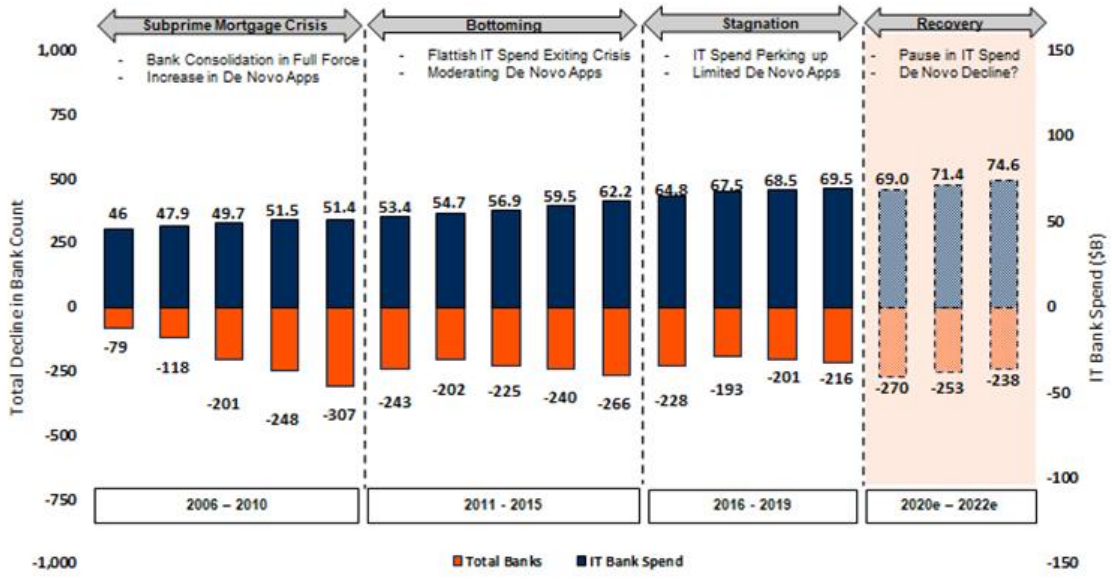
1. Account and transaction growth via checking accounts, debit cards, and overall money transfer.

2. Ancillary products, such as electronic bill payment, peer-to-peer or P2P (*e.g.*, Zelle) payments, and online/mobile banking.

3. New client signings, which gained traction more recently, as sub-industry participants sell multiple products (*i.e.*, ancillary products and merchant acquiring services) to the same clients. As a result, term fees are more favorable, with more room for upselling, and client retention is strengthened.

Because of the increasing number of banks choosing to outsource (*i.e.*, host on third-party privatized clouds) versus in-house implementation, there has been a temporary impact on financials due to recent accounting changes (ASC 606) as to how and when a company can recognize bundled revenues. While the contract structure shifts from 1-3-year license fee agreements to 7+ year lockups, which is advantageous to longer-term business prospects, the change also requires companies to recognize software usage and subscription revenues over time as the client is onboarded, instead of the entire amount upfront. The new dynamic provides a smaller window of visibility in the near term, in CFRA's view, until companies fully convert to the new accounting process.

Discretionary Bank Spend vs. Depository Institutions

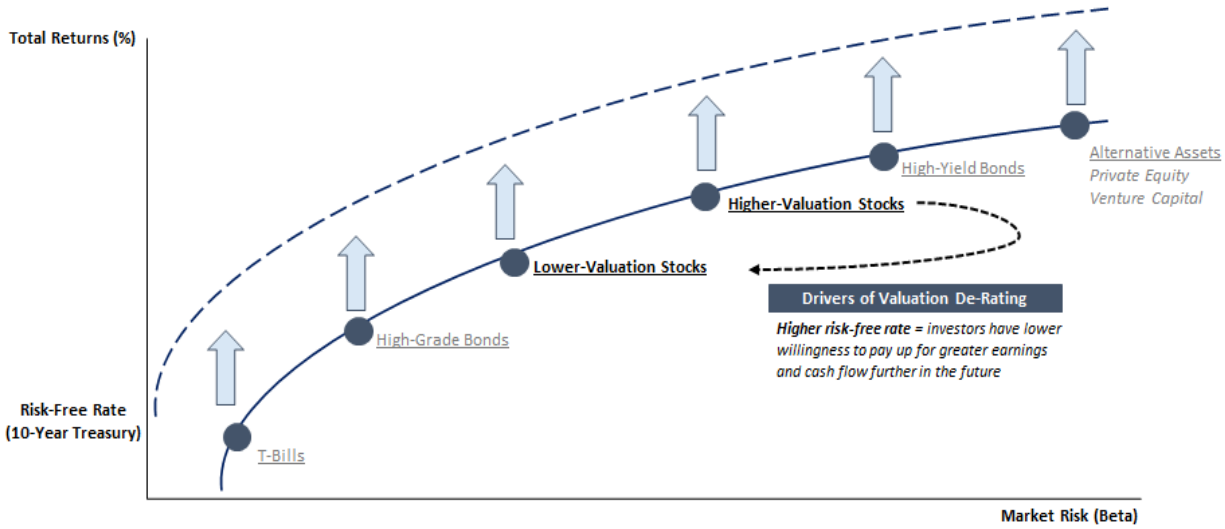


Source: CFRA, Celent, Fiserv

Contractionary Policy Has Greatly Changed the Payment Startup Landscape

The abrupt shift by the Federal Reserve to a contractionary policy to rein in inflation has caused a large re-rating in stocks prices furthest out on the risk curve (*i.e.*, no earnings companies and venture capital). Subsequently, funding levels for payment startups saw a similar contraction, as hurdle rates (*i.e.*, weighted average cost of capital) significantly increased, making money no longer free.

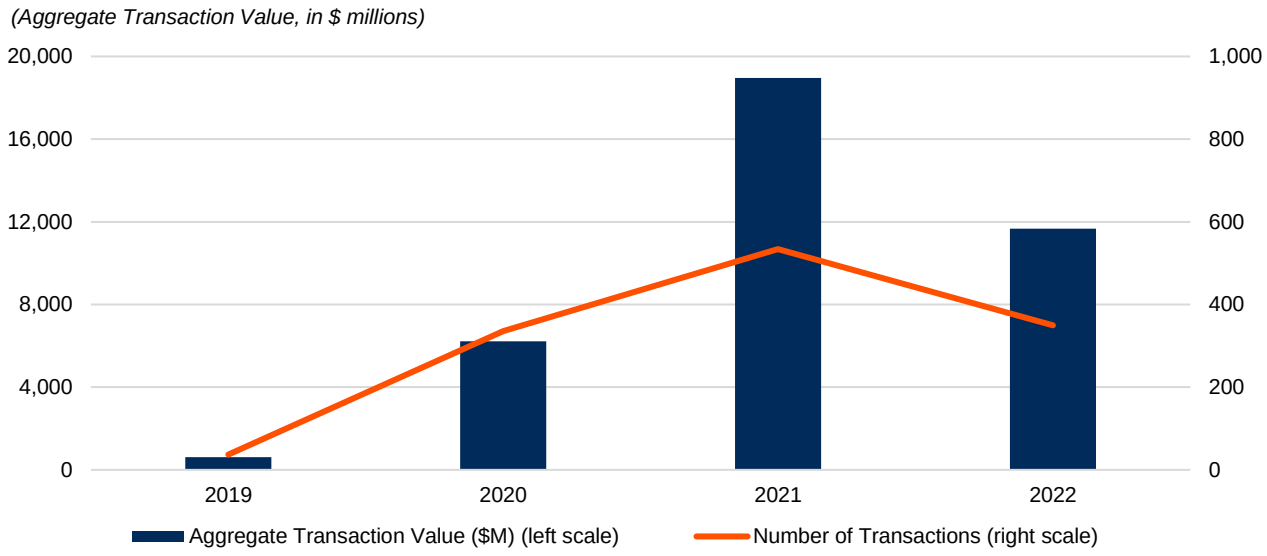
CULPRIT OF VALUATION DE-RATING ACROSS HIGHER-GROWTH NAMES



Note: Illustrative purpose only and not true to scale.
Source: CFRA.

2021 saw all types of funding rounds (*i.e.*, early stage, venture, growth, mature, debt) raised $18.9 billion through 534 transactions, compared to 2020, which only saw 336 deals for $6.2 billion, in a largely reckless fashion. Since then, high valuations of tech companies came crumbling due to rising inflation, geopolitical tensions, and ongoing pandemic. As of November 7, 2022, $11.7 billion were raised and expected to double 2020's funding by the end of the year.

VENTURE FUNDING IN PAYMENT STARTUPS



Source: CFRA, S&P Global Market Intelligence. Data as of November 7, 2022.

Volume, a U.K.-based startup that has recently closed a pre-seed round of $2.4 million led by firstminute Capital and joined by SeedX and Haatch Ventures, is trying to create the world's first-ever transparent checkout, according to its founder Simone Martinelli. E-commerce has a "hidden tax" in the form of payment commissions to cards and e-wallets, which impacts on the prices consumers pay. Volume's mission is to bring transparency to this huge market and kill all hidden fees. Startups in this industry must focus on scale and traction to be a success story in this industry.

P2P Payments Remain a Focal Point

Real-time peer-to-peer (P2P) payments have been gathering attention as they revolutionize the way consumers make payments. With real-time payment technology, all parties involved in a payment cycle benefit from enhanced transaction visibility, which enables better cash management and liquidity. According to Fiserv, the confluence of smartphones, mobile banking, and a decline in cash usage suggests P2P payments could be a key solution and are likely to see near-term growth.

Many people assume non-bank peers like Venmo lead the space, but roughly 75% of all U.S. P2P payments are provided institutionally as clients look for turnkey solutions like Zelle and PopMoney. Total growth reflects P2P as a viable alternative for households to pay bills, hovering around 10-11 billion transactions per year prior to the Covid-19 pandemic. However, as benefits from stimulus have faded, so have total transaction volumes. Square recently reported a notable slowdown in total Cash App figures, which was partly attributed to lower bitcoin transactions and partly due to lower overall money movement figures on its platform.

According to Fiserv and Aite Group, P2P transaction volumes are expected to increase at a 25% CAGR from 2015 to 2022, reaching $465 billion by 2022. Throughout the pandemic, P2P usage has picked up

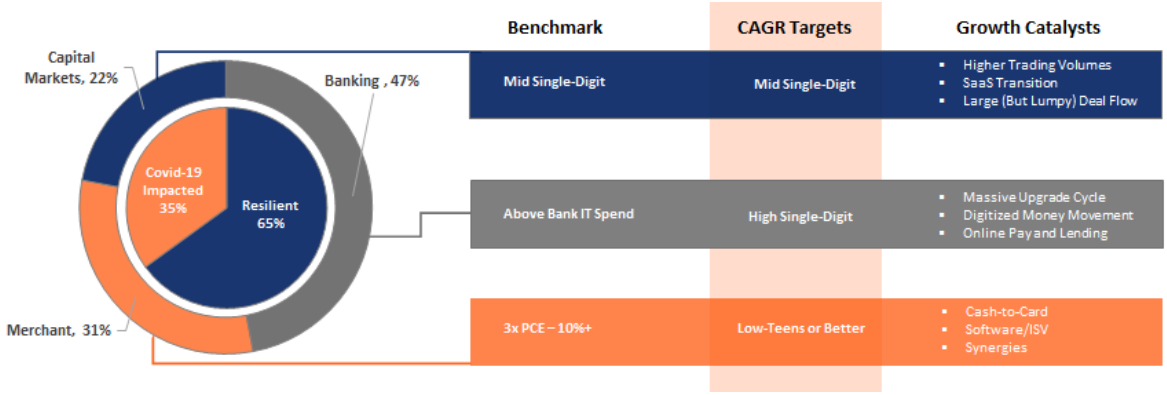
as it offers an incredibly easy way to casually exchange funds without physical contact, with new user growth increasing by 19% and transaction growth increasing by roughly 9% per month, Fiserv said on June 12, 2020. Although P2P transactions are still a small portion of non-cash payments, CFRA thinks that real-time P2P payments could become a primary payment method in the future as Covid-19 makes contact-intensive payments unattractive.

Front- and Back-End Combination – A New Revenue Model

Core processors continue to stiff-arm industry maturation with technical expertise and scale, with some verticals that fall under the greater "back-end processing" umbrella held back by commoditization and higher card penetration, which have prompted more mature growth rates. To help neutralize these effects, secular themes (*e.g.*, electronic transactions) remain a bedrock across the industry, as companies have developed more specialized solutions in attempts to hang more technologically savvy transaction methods, such as electronic bill pay and remote capture, off core deposit accounts.

To diversify, back-end processors have combined with the front-end side of the business, something relatively unheard of previously. For example, issuer processor Fiserv acquired merchant acquirer First Data Corporation in July of 2019. The merged company intends to stitch all front and back-end operations together seamlessly, thus creating a more compelling platform. This likely stacks up better against both new (*e.g.*, gateway parties) and traditional competition (like Fidelity National Information Services) across financial institutions, billers, and now, merchant channels.

Gameplan for Big Three Mergers



Source: CFRA and Company Filings.

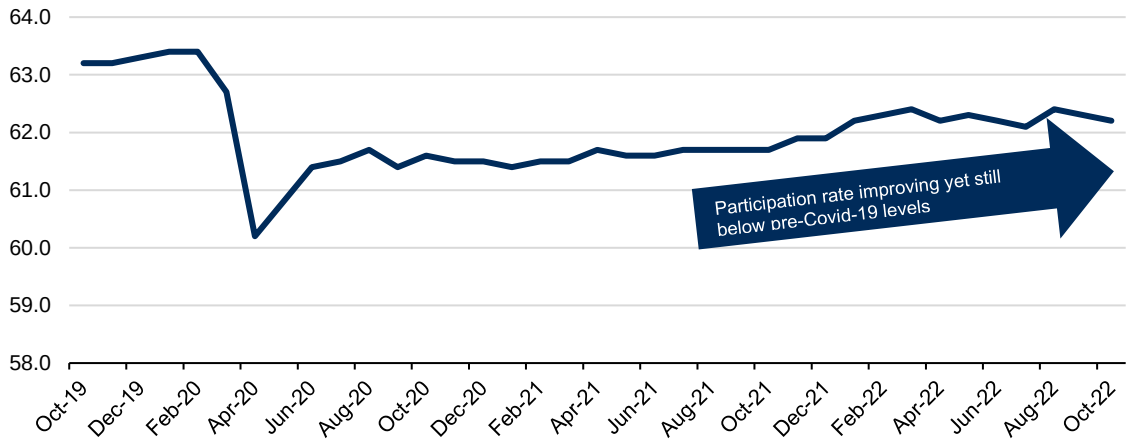
The table above summarizes the financial growth targets and catalysts for each of the megadeals – Fiserv and First Data, Fidelity National Information Services and Worldpay, and Global Payments and Total System Services – which combine Capital Markets, Banking, and Merchant Acquiring businesses together, and should provide a boost to overall organic growth rates, provide meaningful synergies, and drive future earnings growth.

Human Resource and Payroll Technology

HR processing companies have been hurt by higher unemployment levels, shrinking worksites, and a lower number of paychecks to process – all due to the Covid-19 pandemic. However, rising federal funds rate is expected to increase net interest rate income, as companies in this vertical generate cash on the absolute level of funds held on account for their clients. On a brighter note, most companies have experienced a less protracted decline in company fundamentals (*e.g.*, bookings) as government stimulus

from the Paycheck Protection Program (PPP) and CARES Act have helped support higher-growth areas of the market, including small- and medium-sized business (SMB).

LABOR FORCE PARTICIPATION RATE



Source: CFRA, Bureau of Labor Statistics. Data as of October 2022.

Recent labor market data has also softened and is no longer delivering wild swings since the spring lockdowns were lifted, and despite the recent reduction in jobless claims from December 2020 levels that came in at ~800K. Although many companies in the vertical have shown a great amount of resiliency during tough times so far, data points suggest much of the positive news could now be largely discounted into multiples following recent share price performance across the sub-industry.

Going forward, we think labor force participation rate, coupled with employment levels, could serve as a more accurate performance indicators of the human resource and payroll industry vertical. Reason being, any downtrend in either figure will likely be the product of the ongoing contractionary measures being implemented by the Federal Reserve to slow the economy down and could weigh on bookings and/or pays per control figures going forward.

Human Capital Management (HCM)

Comprehensive HR outsourcing is achieved by offloading multiple processes such as payroll management, human capital consulting, workers' compensation insurance, personnel training and development, safety and risk mitigation services, regulatory compliance assistance, and much more. The outsourcing of the entire HR process purportedly enables client companies to better focus on core businesses and to allocate resources more efficiently. Clients could also benefit from better rates on workers' compensation and health-care coverage as human capital management (HCM) firms combine employees of several companies into a single, large pool. Existing HCM firms have been capitalizing on such trends to provide their clients with a one-stop HR solution.

HCM firms have also adopted a more tech-based approach to insulating themselves against a tightening labor market. By applying smart automation processes, such as intelligent data capture and robotic process automation, HCM firms can cut down on staff hours while improving service delivery. According to estimates by industry research firm HCM Technology Report, firms adopting such processes would be able to operate with 21% fewer employees and with 17% less cost.

To position better for future growth, many HCM firms are pivoting towards more agile software solutions, such as Artificial Intelligence (AI), cognitive interfaces, sentiment analysis, cloud, and other new technologies designed to make work easier. Meanwhile, Gartner, a technology research firm, projects nearly 30% of all IT spending will shift to cloud-based software by 2022. As such, the rising adoption of cloud-based HCM software and an increasing need to modernize HR operations are the major driving factors for the HCM market.

Many legacy providers have done a good job at protecting market share, with net client retention rates remaining near record-highs. However, as businesses navigate around the worst of the pandemic, we would not be surprised if retention metrics see a decline from current levels, as customers shift focus to cost containment (versus sheer survival). As a result, we think new entrants like Paycom and Paylocity could experience accelerated growth coming out of this downturn as overall switching activity intensifies.

Business Process Outsourcing

There has been a shift in recent years from business process outsourcing (BPO) to business process management (BPM). Historically, BPO work was mainly used for cost control measures, leaning heavily on cheaper non-U.S. labor to carry out “one size fits all” repetitive tasks like customer-care solutions. Today, disruption spurred by key players has deeply imprinted a more compelling value proposition for clients, in CFRA’s view. Companies have retooled skillsets, leveraging newly found technology platforms to achieve better enterprise performance through BPM. While “offshoring” will continue to some extent, the notion of being able to deliver comprehensive services via cloud-based platforms with a sharper focus on tangible outcomes and key performance indicators presents a convincing method to deliver business tasks more efficiently.

Annual contract value (ACV) indicates pricing dynamics and/or targeted markets (enterprise, mid-market, and SMBs) remain favorable, providing additional evidence that BPM and IT-centric outsourcing will continue to rise. In our opinion, the steady rise in ACV suggests that customers are finding newer BPM services more applicable to everyday operations and are willing to pay up for some of the newer products.

HOW THE INDUSTRY OPERATES

The Data Processing & Outsourced Services sub-industry is best understood by breaking it down into three core verticals: 1) data and payment processing, 2) human resource and payroll technology, and 3) outsourcing.

Data and Payment Processing

Most companies in the data processing sub-industry play distinct roles in the overall payment processing ecosystem. There are five overall parties involved in executing transactions: 1) issuing banks (*e.g.*, Bank of America or Citi), 2) card networks (*e.g.*, Visa or Mastercard), 3) payment processors, 4) gateway processors (Global Payments), and 5) indirect sales channels (independent sales organizations) and integrated channels (independent software vendors and value-added resellers).

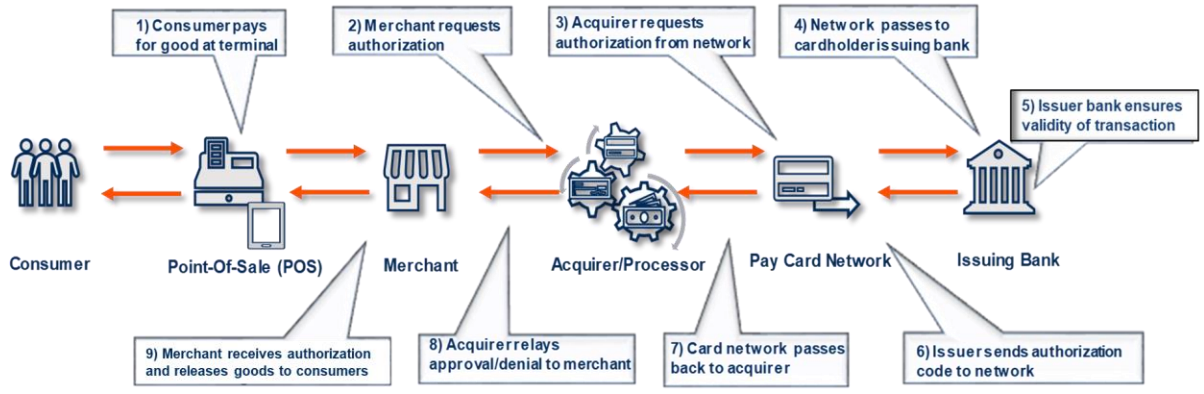
The lion's share of companies involved with payments in this sub-industry operate in a third-party setting and handle credit/debit card transactions for merchants. These processors are usually characterized as either front-end processors, which simply authorize transactions to merchant banks or back-end processors (*e.g.*, Fiserv, Fidelity National Information Systems, and Jack Henry and Associates) that accept/reject authorizations from front-end processors and move money from issuer banks to the merchant banks.

In return for these efforts, merchants are charged processor fees that flow back to their respective parties. For each transaction, merchants pay the processor a discount rate (MDR), which encompasses fees for the card networks and interchange rate for card issuers. In total, these fees usually add up to be around 2% of the total transaction amount.

How Payment Processing Works

The payment industry consists of many companies and each of them plays a specific role in a payment lifecycle. In a typical transaction, the parties involved are the 1) customer, 2) merchant, 3) merchant bank, 4) payment processor, and 5) issuing bank.

HOW A CARD PAYMENT IS PROCESSED



Source: CFRA

◆ **Merchant bank.** The merchant bank (also known as the acquirer) is the financial institution that holds the merchant's bank account. The bank acts as guarantee that the merchant represents a legitimate business and will deliver the goods or services as agreed upon. Once a contract between the merchant and the merchant bank is signed, a merchant account will be created to enable the merchant to accept credit and debit card payments for its product.

◆ **Payment processor.** Payment processors are companies that facilitate communication from the customer's card to both the merchant bank and issuing bank. Payment processors play an important role in preventing fraudulent practices through security checks and customer data verification. Once the verification process is completed (*i.e.*, sufficient funds, valid card, and accurate data), the payment transaction will be authorized and settled all in a matter of seconds.

There are three types of payment processors – front-end, back-end, and issuer:

- **Front-End Processor** – Enables merchants to accept transactions (*e.g.*, POS), underwrite, and authorize payment with the cardholder's bank.
- **Back-End Processor** – Also referred to as an acquirer processor. The party relays settlement and/or clearing instructions from payment network and puts actual funds in merchant hands.
- **Issuer Processor** – Works as the middle party to the Issuing Bank and Network, settles and clears with the Issuing Bank.

◆ **Gateway processor.** Also known as payment gateway, its functions are similar to a payment processor in that it connects the payment between the acquirer and the issuer. However, one main difference is that the payment gateway is essentially used as an e-commerce tool acting like a POS terminal for online transactions. Given the growth in e-commerce, many payment processors currently include payment gateway services as part of their product offering. However, there are also third-party gateway providers.

◆ **Card network**. There are four main credit card networks in the industry, and they are commonly confused with credit card issuers (issuing banks). Visa and Mastercard are solely credit card networks and do not issue any credit cards, while American Express and Discover act as both card networks as well as credit card issuers. Credit card networks control where credit cards are accepted and set the interchange fees that merchants are charged when accepting a transaction.

◆ **Issuing bank.** The issuing bank is a financial institution that issues credit cards to customers on behalf of card networks such as Visa or Mastercard. The issuing bank acts as a guarantor that merchants will be paid whenever the credit card is used. Issuers also process credit card applications; set credit limits; provide customer service; and set payment terms, fees, etc.

Payment Processing Fees

There are two general categories of fees involved in payment processing: 1) wholesale fees and 2) markups. Wholesale fees (also called base fee or pre-markup) are determined by card networks and issuers and are non-negotiable. Markup fees, on the other hand, are set by the payment processor and represent the margin (profit) that the processor gains from the transaction. The markup portions are typically different across processors and can be negotiated to suit a particular client or the business conditions.

According to JBD Consulting, the total cost of a credit card transaction can be broken down into four components: interchange range, dues and assessments range, discount rate range, and surcharge or hidden fees.

◆ **Interchange range** *(0.05% - 3.25%)*

- Set by the credit card networks and paid to credit card issuing banks.
- The largest cost component in a transaction and non-negotiable. However, merchants can reduce interchange fees through proper processing strategies.

◆ **Dues & assessment range** *(0.10% - 0.13%)*

- Set by the credit card networks and paid to the networks (i.e., Visa, Mastercard, or Discover).
- This is normally the second largest cost component in a transaction, and it is non-negotiable.

◆ **Discount rate range or MDR** *(0.01% - 4% or more)*

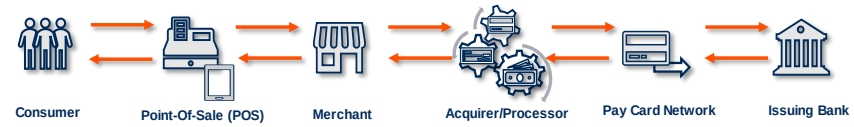
- This is the component that is determined by the credit card processor or Independent Sales Organization (ISO), a third-party organization that sells services to merchants, for its debit and credit card services and it generally makes up the smallest component of the total transaction cost (though sometimes it may end up becoming the largest portion).
- Merchants should be aware and understand the MDR as this component is negotiable and processors are not limited by any fee cap.

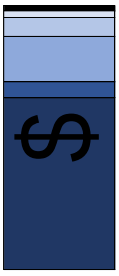
◆ **Surcharges or hidden fees** *(0.10% - unknown)*

- Hidden surcharges are also known as downgrade fees and are rarely disclosed prior to the merchant account activation.
- According to Card Payment Options, a credit card processing watchdog group, downgrade fees are present in 50% of a merchant's card transactions and are typically variable depending on the customer's card type, issuing bank, how the transaction is entered, and other merchant actions. However, this component could possibly be eliminated with proper discussion during the negotiation phase.

TRANSACTION FEE BREAKDOWN

(Merchant Discount Rate of $100 transaction)





- **($0.10)** - Card network keeps 0.10% dues and assessment fee.
- **($1.54)** - Issuing bank keeps 1.54% in interchange fee.
- **($0.12)** - Acquirer bank keeps 0.12% for acquiring fee.
- **($0.36)** - Payment processor keeps 0.36% as MDR portion.
- **($0.25)** - Payment processor keeps $0.25 for gateway services.
- **$97.63** - Merchant received $97.63 after deducting for transaction costs.

Source: JBD Consulting

Human Resource (HR) and Payroll Technology

HR has been evolving over the years from straightforward policy and benefits administration to a more involved strategic role. With the aid of technology, the role of HR professionals is shifting from administrative tasks into broader responsibilities as an organization's advocates, coaches, and consultants who focus on talent, learning, and workforce management. This has given rise to the demand for human capital management (HCM) solutions that are able to take over core HR functions, which are still essential to every organization.

In the Data Processing and Outsourced Services sub-industry, ADP and Paychex are the two companies that focus on HR services. These two companies are HCM solutions providers that assist their clients in simplifying their core HR processes by offering products including but not limited to payroll, benefits administration, recruitment, time and attendance management, insurance, retirement, tax, and compliance services.

Human Capital Management (HCM)

HCM describes a comprehensive set of practices for recruiting, managing, developing, and optimizing the human resources in an organization.

◆ **Payroll.** Although there are HR tech vendors that specialize in payroll, many HCM systems have incorporated these functions in their product offerings. This includes the preparation and generation of payroll checks and journals, employee earnings statements, departmental earnings and deduction summaries, quarterly and annual Social Security and income tax withholding reports and statements, employee earnings histories, tax-filing services, and pension fund and profit-sharing reports.

◆ **Talent Management.** The process of recruiting, developing, evaluating, and compensating employees is often managed in separate applications or in integrated talent management software suites. Given the increased focus in talent management, several popular technologies and systems have emerged, including application tracking systems, candidate relationship management, employee referral software, and employee assessment software.

◆ **Performance Management.** Many employers have started to migrate into continuous performance monitoring systems from traditional annual job reviews. HCM systems and several performance

management platforms have since started offering interactive features that enable continuous employee feedback plus workforce analytics that assists in optimizing allocation and development of human capital.

◆ **Benefits Administration.** The advancement of digital transformation has led to the incorporation of wellness and well-being programs into businesses' benefit offerings other than the standard insurance, vacation, and sick days. Vendors are now able to tailor insurance protection packages for individual employees by analyzing claims data.

◆ **Learning and Development.** HR technology has revolutionized corporate training and education programs into interactive online platforms. This has allowed employers to utilize learning management software (LMS), which is able to customize training and track each employee's progress.

The long-term prospects for HR and payroll landscape remain favorable; however, this business can be sensitive to the overall economic backdrop. For example, in a recession, the unemployment rate increases, reducing the number of payroll checks that are processed. Interest rates affect payroll processing companies that hold client funds.

Outsourcing

Outsourcing refers to the practice of shifting non-core tasks, operations, jobs, or processes to an external third-party contractor to reduce operating cost or improve efficiency. Business process outsourcing (BPO) is a broad classification that generally describes any delegation of business processes of an organization to external service providers. Today, the rapid development of new technologies such as Software as a Service (SaaS) and mobility are further catalyzing the evolution of the outsourcing industry. According to Accenture, BPO providers now offer on-demand services that could be applied across multiple clients with the development of flexible software platforms.

The BPO industry could be divided into two main categories: "traditional" people-based BPO services (TBPO), and BPO SaaS offerings (BPaaS). According to Gartner, TBPO are characterized by companies that provide customized services with less automation, non-standardized Service Level Agreements (SLA), and higher costs – whereas BPaaS are highly standardized with little customization, SLAs tied to a benchmark metric, and lower costs.

Based on a report by Catalyst, services offered by external providers could typically be segregated into high-level horizontal segments including: 1) finance and accounting (*e.g.*, CoreLogic and ADP), 2) governance, risk, and compliance (*e.g.*, Equifax), 3) human resource outsourcing (*e.g.*, Paychex), 4) outsourced customer care (*e.g.*, TeleTech), and 5) operations/supply chain management (e.g., ExlService). However, these companies are no longer expected to solely provide basic service silos. Instead, clients expect service providers to deliver more complex work and to serve as more of a "partner" as the marketplace gets increasingly competitive.

The push to outsource functions in locations with less-expensive labor (known as "offshoring") adds to the market's competitiveness and fragmentation. Countries such as India and Malaysia – with large, well-educated, English-speaking populations – are experiencing demand for call centers, customer service back-office work, and software programming, and have become the preferred areas of offshore outsourcing work.

Types of Outsourcing Models

◆ **Professional service outsourcing.** This is the most in-demand type of outsourcing as almost every business and company requires some non-core functions to keep the business running. The type of outsourcing that falls into this category are services such as “IT”, legal, accounting, and HR.

◆ **Manufacturing outsourcing.** This usually caters to businesses that have a high cost of manufacturing. Providers are common in Asia or Latin America, where the cost of labor is relatively low – allowing manufacturing at a much lower cost per product.

◆ **Process-specific outsourcing.** Many companies outsource processes that may be secondary to the core product. One example could be a bakery that contracts an outsource delivery service provider to deliver its baked goods. These contracts usually involve detailed clauses that specify items including but not limited to timeline, contacts, and costs.

◆ **Operational outsourcing.** Operational outsourcing is more commonly associated with the manufacturing industry as it involves a large amount of operational stages prior to producing the product. For example, a sports equipment manufacturer will have to conduct periodic machinery maintenance and repairs to ensure its production line remains active. This is commonly outsourced to a third-party vendor that specializes in machinery maintenance to leverage the vendor’s expertise.

HOW TO ANALYZE A COMPANY IN THIS INDUSTRY

Knowledge of general economic and business trends is essential in determining the Data Processing & Outsourced Services sub-industry's overall strength. What are the current trends? Which key factors are affecting the industry's growth? The answers to such questions can help the investor gain insights into the underlying forces shaping the market for data processing & outsourced services. To assess an individual company's situation within this environment, it is important to consider both qualitative and quantitative factors affecting the company's condition.

Qualitative Factors

An investor can obtain a sense of the fundamental position of a services vendor by identifying the markets in which it competes and understanding the growth dynamics. What are the overall growth expectations for those markets?

It is important to note the vertical markets in which the company competes (e.g., government, financial, consumer, communications) and the percentage of revenue that each market contributes. This information will help in assessing the likely impact that macroeconomic factors or market-specific risks may have on the company.

The company's market segments should be evaluated with regard to the degree of competition in each. Are there many small competitors or a few large firms wielding significant resources? Who are the major competitors? How does the company stack up against them, and what are its particular advantages? One possible advantage is size, which is an important barrier to entry in the Data Processing & Outsourced Services sub-industry. While larger companies with vast resources dominate most segments of the Data Processing & Outsourced Services sub-industry, we note pockets of growth for smaller- and medium-sized companies, as pointed out in the "Industry Trends" section of this Survey. Therefore, a company's size relative to its competitors should be considered.

Management is another important qualitative factor. An investor can uncover clues about the management team by looking at its history. What is its track record for meeting expectations and/or integrating acquisitions? How long have the high-ranking managers been with the company? If they took control only recently, what was their previous experience? It is also preferable for managers to own company stock or options. This helps to ensure they have the incentive to do what is best for the shareholders: create value.

Quantitative Factors

Once the qualitative questions have been answered, quantitative methods can be used to evaluate a company's prospects. These methods stem from analysis of the firm's financial statements – including the income statement and balance sheet – as well as its free cash flow.

THE INCOME STATEMENT

The income statement yields information on the strength of a firm's current business, including its revenues, gross margins, and expenses.

◆ **Net Revenues.** A company's sales growth should be compared with both its historical rates and those of its competitors to gain insight into possible future growth and changes in market share. If any major changes have occurred, it is important to determine why they happened and whether they are likely to endure or reverse in future periods.

For some data processing & outsourced services firms, revenues often come from contracts that are multiyear in duration or are renewed with predictability. Information related to contracts – specifically, their length and value – can help investors project future revenues. However, customers often are allowed to renegotiate the terms of an agreement, depending on the nature of the contract and end-market conditions, which makes predicting future revenue streams less reliable. Average contract lengths also have been decreasing, which makes forecasting long-term cash inflows more challenging.

For others, growth can be assessed by a closer look at transactions volumes both from individual payments, as well as long-term contracts from financial institutions. As discussed in an earlier section of this publication, a growth in total non-cash transaction volumes could suggest stronger demand for payment processing services, which could then translate into positive top-line growth for companies in the sub-industry. Nonetheless, it is also important to pay attention to a company's net revenue per transaction as a decrease in this metric could offset the benefit gained from the increase in transaction volumes.

The adoption of ASC 606 revenue recognition standard had varying levels of impact across the sub-industry. For some front-end merchant acquirers, examples were clean cut, as gross revenues were re-based, backing out fees collected for payment networks and card issuers, resulting in net figures. That said, little difference was seen in absolute growth rates, given prior periods were also restated. On the contrary, ASC 606 created lumpy revenue recognition for some back-end processors, as companies with a large base of multi-year outsourced contracts were required to spread out recognition over multiple periods, instead of full up-front recognition with ASC 605. This caused some companies to push out growth timelines and promoted general uncertainty around when recognition occurs for specific contracts.

Watch Out! *Companies may hide a revenue slowdown by recognizing revenue in an earlier period than originally expected. When companies accelerate revenue into the current period, they are essentially "stealing" revenue from future periods. As such, the reported revenue growth during a period in which revenue has been accelerated is likely unsustainable.*

Watch Out! *Revenue recognition for long-term construction or production contracts is typically based on the percentage-of-completion (POC) method historically. The estimates required in accruing revenues and costs under the POC method enable management to manipulate revenues and earnings.*

◆ **Gross margin.** In the Data Processing & Outsourced Services sub-industry, gross margins (total revenues minus the cost of services provided, divided by total revenues) vary widely. The gross margin can range from slightly more than 20% for certain outsourcing and contract management firms to 50% or more for certain processing firms, information providers, or other specialized services vendors.

Comparing a firm's gross margin with its historical rates – as well as with those of its peers – can yield information on changes in the mix of services revenue that the company has taken in. It might also indicate the company's efficiency in providing those operations. A vendor can improve its efficiency by implementing cost-saving technology in its business or by getting past initial costs associated with setting up operations for a new contract. A drop in the gross margin may reveal that a vendor has changed its bidding policies to use price as a competitive weapon to win contracts. Although this will reduce each contract's profitability, it often increases the company's overall business volume.

◆ **Expenses.** When analyzing a data processing & outsourced services firm, it is important to review sales and marketing outlays, as well as research and development (R&D) costs. Sales and marketing expenses can indicate the extent to which a vendor is building its sales force or is spending to market its services. Tracking year-to-year growth in the absolute dollars spent on sales and marketing – and comparing these expenses as a percentage of revenue over defined time periods – can be useful in determining the adequacy of selling and marketing expenses. Comparisons can be made with the company's own past record, as well as with those of its peers. If sales and marketing costs grow faster than revenues, operating margins are pinched. Alternatively, if revenues grow faster than selling and marketing expenses, operating margins expand.

Watch Out! *Data processing & outsourced services firms typically capitalize certain costs related to contract acquisitions and the set-up of infrastructure for contracts. These firms can also capitalize certain costs for developing internal software and commercial software. However, some companies have been aggressive in their capitalization of costs by including normal operating expenses along with appropriate development costs. Inappropriate capitalization of normal operating expenses shields such expenses from the income statement. Aggressive cost capitalization provides a boost to reported earnings that is unsustainable, and moreover, these costs must be amortized in future periods, thus increasing future operating expenses.*

THE CASH FLOW STATEMENT

Companies frequently have cash outlays that are not included on the income statement, such as capital expenditures, debt repayment, and dividends to shareholders. These items, which appear on the cash flow statement and are reflected on the balance sheet, are sometimes discretionary and should be considered when evaluating a data processing & outsourced services company's cash flow.

The cash flow statement gives a detailed look at where a company's cash comes from and where it goes. An important question to ask is how much of that cash was generated from recurring earnings rather than various accounting adjustments and nonrecurring items. It is cash flow, not earnings, that determines whether a company will be able to cover its future spending. Cash flow growth is an important confirmation of earnings per share (EPS) growth. Investors look for consistent growth trends for earnings and cash flow and prefer companies that can use their own cash to finance future growth. Negative cash flow may signal unsustainable cash burn for companies with little growth. However, if a company yields adequate growth, it may be a signal that the given company could be generating sufficient cash for current operations or capital allocation returns to shareholders.

When valuing a data processing & outsourced services firm, an important measure is free cash flow – the amount of excess cash the company has available after paying off obligations. The investor should

determine how the company expects to use its free cash flow. Three possible strategies are to repurchase shares of the company's common stock; pay dividends to shareholders; or reinvest the cash in the business, which includes the possibility of an acquisition. Generally, a company in a growth stage will pump its cash back into the business to fuel further growth. Mature companies that do not earn a high enough return on their invested capital may choose to direct the cash to their shareholders, either through dividends or share repurchases.

Watch Out! *Some companies engage in supplier financing arrangements, i.e., arranging for a financial institution to pay its suppliers and repaying the financial institution later. This effectively lengthens the supplier payment terms and thus improves working capital. Supplier financing arrangements can delay a company's payments to its suppliers. These arrangements can result in overstated cash flows and understated leverage ratios.*

THE BALANCE SHEET

Comparing the balance sheet of a data processing & outsourced services firm with its past results or with the balance sheets of other industry vendors yields information about a firm's financial strength and the degree of financial leverage that it employs.

Data processing & outsourced services firms generally enjoy stable earnings. This results in a highly predictable cash flow and makes the repayment of debt relatively easy. Nonetheless, keeping some debt on the balance sheet may be beneficial, as it lowers a firm's cost of capital. However, too much debt can limit a vendor's ability to make strategic acquisitions. It also heightens the risk that an unexpected drop in business retention rates or new contract awards would severely constrain cash flow.

Other Factors to Consider

Additional factors that can affect the overall health of select data processing & outsourced services companies include technological change, globalization, acquisition strategies, contract backlogs and retention rate, and attrition rates.

Technological Change
Although a services firm can adapt to technological changes (as mentioned in the "Industry Trends" section of this Survey), such changes always entail risk. A services firm may lose a competitive advantage if other firms gain a reputation in new technology areas, or vice versa. Investors should be alert to changes in processing markets, the causes of those changes, and new areas that data processing & outsourced services firms are targeting. Discussions with data processing & outsourced services vendors can yield information on the size, growth rates, and attractiveness of new and emerging markets, as well as on each firm's related technologies, philosophies regarding those markets, and competitiveness.

Globalization
The size and growth of opportunities available in non-U.S. markets continue to attract U.S.-based companies that provide outsourcing services. Thus, developments outside the U.S. can affect an outsourcing company's business. For example, an economic slowdown could hurt new business, especially large contracts that may be deferred until better economic times. The non-U.S. markets served and the strength of operations in those markets varies by vendor.

Some of the larger domestic outsourcing services companies derive a significant portion (around 30% or more) of their revenues outside the U.S., while firms based outside the U.S. often derive a majority of their revenues (sometimes more than 60%) from the U.S. Thus, many outsourcing services companies

are subject to foreign currency risk. For U.S.-based firms, overseas sales are translated from local currencies into dollars; a strong dollar hurts reported earnings, while a weak dollar helps. The inverse is true for companies based overseas. Therefore, the investor should be aware of where a company is based, the countries in which it does business, and the value of the dollar against those countries' currencies.

Tapping into the less expensive labor resources of other countries has helped companies offer reduced prices to their customers. India has been a big beneficiary of this trend. However, this shift involves additional costs, such as infrastructure and travel, which can dilute the initial value of the shift overseas. Nonetheless, in the longer run, if a company is using these resources effectively, there should be a gradual widening of operating margins. An investor should determine whether the company is using an offshoring strategy, and, if so, whether it is adding incremental value.

Acquisitions

The data processing & outsourced services sub-industry continues to consolidate. Companies seek to gain new areas of expertise, enter new geographic and vertical markets, and leverage their established sales organizations. Small companies have an added reason to go the acquisition route – they may see being acquired or acquiring others as a means of reaching critical mass. The investor should assess a firm's acquisition strategy to determine its future competitiveness.

Contracts and Retention Rate

Contract backlogs (i.e., contracts that have been signed but not implemented) should be examined, as should the duration of those contracts. Analysis – of recent contracts awarded to an outsourcing services vendor, of the firms competing for those contracts, and of the percentage of contract bids that the company has won – can indicate a vendor's competitiveness.

An offshoot of contract backlogs, which applies primarily to companies that service the public sector (i.e., the federal government, or state and local governments), is the funded backlog. The unfunded portion of the backlog refers to contracts that have been approved by the government agency but for which funds have not yet been appropriated. For data processing & outsourced services companies with government clients, this analysis can yield further visibility into future revenue and earnings growth and serve as a leading indicator for potential changes.

Outsourcing firms involved with annual contracts, or with other contracts that are expiring but have been put up for renewal, have certain advantages. Being an incumbent vendor with first-hand knowledge of a customer's business operations improves a company's chances that its services will be retained. Because startup costs associated with a contract already have been largely absorbed, an incumbent provider's bid will usually be very competitive, if not the lowest among all bidders. Users of IT services are also loath to displace incumbent vendors because of the disruption that any transition would have on their operations. This is particularly the case now that computer and processing operations are so crucial to organizational viability.

For incumbent vendors, all of these factors influence the predictability of their future revenue streams. The amount of business renewed when contracts expire, known as the "retention rate," is a gauge to be watched. If a company's retention rate falls or rises materially, there could be a fundamental change in the way the firm is performing its services, which could have an impact on future results.

If a company loses a major customer or contract, the investor should find out the cause to determine if there is an underlying problem with the company's business. When considering contract wins, it is important to keep in mind that sometimes companies underbid in order to win the business – possibly to gain a reputation from the status of dealing with a certain organization.

In such cases, the data processing & outsourced services vendor may not make much money – it may even take a loss – but it may hope to derive new business opportunities from the prestige of that particular win. However, too many such bids tend to weaken a vendor's financial health – a condition referred to as the "winner's curse." Such underbidding may manifest itself in contraction of gross margin.

Attrition/Churn Rates
Not all companies in the outsourcing segment quote their attrition rates, but this number can provide insight into a company's labor costs. In areas (such as India) where IT workers are in high demand, turnover tends to be high, as new employers entice workers away from their current positions with higher wages. This has two effects. First, after losing an employee, a company must replace that worker with someone who will likely be less productive as he or she climbs the learning curve. Second, it tends to put upward pressure on labor costs, as employers bid up wages in an attempt to hire the most qualified candidates. Investors should watch for companies with attrition rates that tend to be above 15% on a regular basis.

Equity Valuation

When trying to determine the appropriate valuation for equities of companies in the data processing & outsourced services sub-industry, CFRA uses a few different methods. The most common method used is the price-to-earnings (P/E) ratio. When we use the P/E ratio, we will most often compare the stock's current level to its competitors within the field. Since there are numerous different segments within the data processing & outsourced services sub-industry, it is important to know what specific area the company operates in for a more apples-to-apples comparison. A comparison to the stock's historical range can also be beneficial.

Another good metric is the P/E-to-growth ratio (PEG), which is the P/E ratio divided by the earnings growth rate. This allows for a more direct comparison between older, slower-growing firms and their faster growing peers.

Another metric CFRA uses is free cash flow, which is calculated by taking operating cash flow and subtracting capital expenditures. By determining the size of the expected free cash flows, we have a better idea of how much capital the company will have at its disposal for other uses. Companies can use their free cash to pay dividends, buy back stock, pay off outstanding debt, or to reinvest into the business. If a company's priorities line up with the individual investor (e.g., a conservative investor looking for current income and a company that has a high dividend payout ratio), the stock may be a worthwhile investment.

Discounted Cash Flow
Because of the limitations of P/E ratios, other methods for valuing data processing & outsourced services companies are often used. One such method is the discounted cash flow (DCF) model. Compared with the P/E ratio, this metric is much more complicated, as it involves making estimates for a variety of factors well into the future. However, many investors think that the DCF model gives a true long-term intrinsic value of the stock, since it is based on the fundamental expectations of the business rather than on public market factors or historical precedents.

In DCF analysis, the net present value of projected cash flows for a company, minus the investment needed to generate future cash flows, is calculated. The three major components of DCF analysis are free cash flow, terminal value, and discount rate. Free cash flow is the cash generated by the business that is available to all providers of capital. Higher free cash flow is preferred for capital allocation such as buybacks and dividends for shareholders as well as funding for capital expenditures, including capacity buildouts or expansion and maintenance of machines.

The terminal value is the value of the cash flows at the end of the horizon period. The discount rate is the rate used to discount free cash flows and the terminal value back to their present values. The discount rate is an important factor in the analysis because variations in it can significantly affect the present value of the cash flows. CFRA thinks the best discount rate to use is the company's weighted average cost of capital, which takes into consideration all forms of capitalization (such as debt and equity) that the company employs. While DCF analysis provides an inherent value of the company based on its ability to generate future cash flows, it is highly dependent on the accuracy of the many assumptions regarding free cash flows, terminal value, and the discount rate.

Sum-of-the-Parts Valuation

Another method used by investors in the data processing & outsourced services sub-industry in evaluating their companies is the sum-of-the-parts (SOTP) model, sometimes known as "break-up" analysis. SOTP involves adding up the value of a company's individual businesses to arrive at a total enterprise value (TEV). Equity value is then determined by subtracting net debt and other non-operating adjustments. The first step in SOTP analysis is to determine a value for each segment.

For those operations that are generating income, a forecast of earnings before interest and taxes (EBIT); earnings before interest, taxes, depreciation, and amortization (EBITDA); or net income is prepared. This value is then compared with a peer group of similar companies to determine a value for that business unit. For segments that are not generating significant income, other valuation methods need to be used, such as book value or price-to-sales ratios. After the value of each segment is determined, they are totaled; then, the amount of debt and other non-operating adjustments are subtracted. This figure is divided by the number of shares outstanding to determine a current value for the stock. If that value is significantly more than the current market value of the stock, an investment opportunity may exist.

GLOSSARY

Artificial Intelligence (AI)—A computational system that simulates parts of human intelligence but focuses on one narrow task.

Authorization rate—A calculation that determines how many of the total number of transactions were successful.

Automated clearing house (ACH)—An electronic clearing system in which payment orders are exchanged among participants and handled by a data-processing center.

Back-end processor—Also referred to as an acquirer processor, it relays settlement/clearing from payment network and puts funds in merchant hands. Fees are usually derived as a fixed percentage of total merchant acquiring spread.

Basel III—An internationally agreed set of measures developed by the Basel Committee on Banking Supervision in response to the financial crisis of 2007-09. The measure aims to strengthen the regulation, supervision, and risk management of banks.

Business process management (BPM)—A systematic approach to enhancing an organization's workflow to be more effective, efficient, and adaptive.

Business process outsourcing (BPO)—When a corporation contracts out the operations and responsibilities of specific (usually noncore) business function (or process) to a third-party service provider, typically to cut costs and shift its focus to core business functions. Frequently outsourced functions include human resources (*e.g.*, payroll, training, benefits, and hiring), procurement, customer relationship management (CRM), supply chain logistics, finance and accounting, and manufacturing, among other operations.

Business to business (B2B)—Refers to a situation where a business initiates a transaction with another business. Some B2B relationships include manufacturer-manufacturer, manufacturer-wholesaler, and wholesaler-retailer.

Business to consumer (B2C)—Transactions that are conducted between a business and a consumer. It is the most popular sales model for mall shopping, restaurant dining, e-commerce, etc., where the customers are the end-users of the products or services.

Card-not-present (CNP)—When a payment transaction is completed without the card holder or his/her credit card being physically present to hand to the merchant. This commonly refers to transactions in which credit card information is provided over the phone, mail, or internet.

Contactless payment—A system that uses radio frequency identification (RFID) or near field communication (NFC) on credit cards, debit cards, smart cards, and smart phones to make secure payments. This can significantly speed up transactions as it does not require any form of identity verification.

Credit—In accounting terms, credit usually refers to an increase in liability (amount owing). This is similar in the payment industry whereby consumers can use a credit card to make purchases on credit (owing the bank) and make the payment at a later date.

Customer relationship management (CRM)—A strategy whereby a business focuses on improving service to its customers through automated processes, personal information gathering and processing, and by offering self-service to customers.

Debit—In accounting terms, debit refers to an increase in assets or a decrease in liabilities on a company's balance sheet. However, in payment terms, debit usually refers to the drawing of money directly from an account that has sufficient funds. When using a debit card to make a purchase, the issuing bank will place a hold on the amount of the purchase and transfer the money to the merchant's bank automatically.

Digital—Electronic technology that generates, stores, and processes data as a series of numbers. In the data processing & outsourced services sub-industry, "digital" refers to new technologies helping change respective business models (cloud infrastructure, social, and big data).

Digital payment—Digital payment is a method of payment made through digital modes. It is also called electronic payment.

Discount rate—In banking, this refers to the interest rate that is charged to banks for loans received from the Federal Reserve. In term of finance and valuation, discount rate is also the interest rate that is used in discounted cash flow (DCF) analysis to determine the present value of future cash flows. In the payment business, the discount rate or the merchant discount rate (MDR) is the rate charged by a merchant bank for providing debit and credit card services to the merchant.

E-commerce—Buying and selling goods over the internet.

Europay, Mastercard, and Visa (EMV)—A standard for credit, debit, and prepaid cards that have embedded microprocessor chips. This standard is named after the three companies that developed the specifications for the technology.

Financial technology (Fintech)—Financial services driven by technology innovation. The term refers to innovation in financial literacy and education, retail banking, investment, and cryptocurrencies such as bitcoin.

Front-end processor—Enables merchants to accept transactions (e.g., POS), underwrite, and authorize payment with the cardholder's bank. Usually earns much of the acquiring spread due to multiple roles in the payment process.

Hardware—The physical components of a computer system (e.g., monitors, CPUs, servers), as opposed to the software that makes the system or its applications run.

Human capital management (HCM)—A set of practices related to people resource management. These practices are focused on the organizational need to provide specific competencies and are implemented in three categories: workforce acquisition, workforce management, and workforce optimization.

Independent software vendor (ISV)—A software producer that builds software in conjunction with other hardware, software, or cloud providers. One example is software that is built to run on technology platforms created by Microsoft or Oracle.

Integrated payments—Software solutions that converge multiple lines of business (such as general ledger and HR management) with payment processing to reduce friction with easy-to-integrate applications at merchants.

Interchange—Commonly referred to as interchange rate/fee in the payment industry. It is the fee paid by the merchant bank to the issuing bank each time a payment transaction occurs. This fee is for the issuing bank to cover its cost on fraud, bad debt, and the risk exposed in approving the payment.

Issuing bank/card issuer—An issuing bank is a bank that grants credit cards to consumers. It is the party in the payment ecosystem that guarantees the card holder's ability to pay for the purchased goods and/or services.

Merchant—A person or company that is involved in selling goods and/or services.

Merchant acquirer—The bank or financial institution that processes credit or debit card payments on behalf of a merchant. The merchant acquirer, also known as merchant bank or acquirer, enables the merchant to accept card payments and charges a fee for their services.

Mobile payment—A payment performed from or via a mobile device.

Offshoring—The practice of outsourcing a business process to a company located in a foreign nation where costs are lower than in the home country. In the U.S., the trend is for companies to contract with firms in countries such as India, China, Russia, Eastern European nations, and Latin American countries.

Outsourcing—Hiring an IT services company to perform some of an organization's data processing and data management tasks.

Payment processor—Companies that are appointed by merchants to process debit and credit card transactions for acquiring banks are split into two types: front-end processors and back-end processors. Front-end payment processors are involved in authorizing payments and providing settlement services to merchants. Back-end

processors typically accept settlements from front-end processors and are responsible for the transfer of money from the issuer to the acquirer.

Payment network—Refers to a credit card association that sets transaction terms for merchants, issuing banks, and acquiring banks. There are currently four major credit card associations: Visa, Mastercard, American Express, and Discover.

Point-of-sale (POS)—A system that utilizes internet connection to enable the processing of payments through different providers without the need for separate terminals for each payment method.

Request for proposal (RFP)—It is both the process and documentation used in soliciting bids for potential business or IT solutions required by an enterprise or government agency.

Revenue per transaction (RPT)—The amount of revenue (fee) a payment company receives for each transaction made by a customer.

Sentiment analysis—Refers to the use of natural language processing, text analysis, and computational linguistics to systematically identify, extract, quantify, and study effective states and subjective information.

Software—Computer programs that either direct the operation of a computer (system software) or accomplish user tasks (application software).

Terminal—A device that interfaces with payment cards or mobile payment methods to make electronic funds transfers.

Transaction fee—A charge that is incurred to the merchant each time it processes a customer's credit or debit card transaction. The fees are normally calculated as a percentage of the total transaction amount plus a flat fee for additional services such as e-commerce. Also known as the merchant discount rate (MDR).

Value-added reseller (VAR)—Companies that provide additional features or services to an existing product prior to reselling them. The payment industry is actively partnering with VARs to build mutually beneficial relationships that can enhance all parties in the payment processing value chain.

INDUSTRY REFERENCES

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nilsonreport.com
Provides news and analysis on global card and mobile payment industries.

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Provides research and business solutions in strategy, consulting, digital, technology, and operations.

Aite Group
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Provides research on business, technology, and regulatory issues in the financial services industry.

Capgemini
capgemini.com
Provides information and research on consulting, technology, outsourcing, and other managed services.

Celent
celent.com
A consulting firm that provides research and advice on financial services technology.

eMarketer
emarketer.com
A market research company that provides insights and trends related to digital marketing, media, and commerce.

Forrester Research Inc.
forrester.com
Projects and analyzes the impact that changes in technology will have on large companies, consumers, and society.

Gartner Inc.
gartner.com
Researches and analyzes developments and trends in the information technology industry.

Google e-Conomy SEA
economysea.withgoogle.com
Multi-year research program launched by Google and Temasek and joined by Bain & Company. The research sheds light on the internet economy in Southeast Asia.

IDC Research Inc.
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Provides IT data, analysis, and consulting.

IHS Markit
ihs.com
Provider of economic, financial, and political information to support planning and decision-making.

Infinicept
Infinicept.com
A platform that provides all of the payments infrastructure and expert advisory services needed for payment facilitators.

iResearch Consulting Group
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Provides research, advice, and online business services in China.

Ovum
omdia.com
Provides research and advice to decision makers in technology, telecom, and other industries.

S&P Global Market Intelligence
marketintelligence.spglobal.com
Provider of independent ratings, benchmarks, analytics, and data to the capital and commodity markets worldwide.

GOVERNMENT AGENCIES

Federal Reserve Bank of the U.S.
federalreserve.gov
The U.S. central banking system functions to promote the effective operations of the U.S. economy.

U.S. Bureau of Economic Analysis
bea.gov
Agency within the U.S. Department of Commerce that collects economic data.

U.S. Bureau of Labor Statistics
bls.gov
Agency within the U.S. Department of Labor with the mandate to collect labor statistics.

U.S. Department of Commerce
commerce.gov
A Cabinet-level department responsible for a variety of government agencies that monitor and regulate U.S. commerce.

People's Bank of China
pbc.gov.cn
China's central banking system functions to promote the effective operations of the Chinese economy.

COMPARATIVE COMPANY ANALYSIS

			Operating Revenues															
			Million $							CAGR (%)			Index Basis (2011=100)					
Ticker	Company	Yr. End	2021	2020	2019	2018	2017	2016	2015	10-Yr.	5-Yr.	1-Yr.	2021	2020	2019	2018	2017	2016
DATA PROCESSING AND OUTSOURCED SERVICES																		
ADP	[] AUTOMATIC DATA PROCESSING, INC.	JUN	15,005.4	14,589.8	14,110.2	13,274.2	12,372.0	11,667.8	10,938.5	4.3	5.2	2.8	137	133	129	121	113	107
BR	[] BROADRIDGE FINANCIAL SOLUTIONS, INC.	JUN	4,993.7	4,529.0	4,362.2	4,329.9	4,142.6	2,897.0	2,694.2	8.7	11.5	10.3	185	168	162	161	154	108
CNXC	† CONCENTRIX CORPORATION	NOV	5,587.0	4,719.5	4,707.9	2,463.2	1,990.2	1,990.2	0.0	NA	NA	18.4	NA	NA	NA	NA	NA	NA
CSGS	§ CSG SYSTEMS INTERNATIONAL, INC.	DEC	1,046.5	990.5	996.8	875.1	789.6	761.0	752.5	3.6	6.6	5.6	139	132	132	116	105	101
EEFT	† EURONET WORLDWIDE, INC.	DEC	2,995.4	2,482.7	2,750.1	2,536.6	2,252.4	1,958.6	1,772.3	9.9	8.9	20.7	169	140	155	143	127	111
EVTC	§ EVERTEC, INC.	DEC	589.8	510.6	487.4	453.9	407.1	389.5	373.5	6.3	8.7	15.5	158	137	130	122	109	104
EXLS	§ EXLSERVICE HOLDINGS, INC.	DEC	1,122.3	958.4	991.3	883.1	762.3	686.0	628.5	12.0	10.3	17.1	179	152	158	141	121	109
FIS	[] FIDELITY NATIONAL INFORMATION SERVICES, INC.	DEC	13,877.0	12,552.0	10,333.0	8,423.0	8,668.0	8,831.0	6,596.0	9.4	9.5	10.6	210	190	157	128	131	134
FISV	[] FISERV, INC.	DEC	16,226.0	14,852.0	10,187.0	5,823.0	5,696.0	5,505.0	5,254.0	14.2	24.1	9.3	309	283	194	111	108	105
FLT	[] FLEETCOR TECHNOLOGIES, INC.	DEC	2,833.7	2,388.9	2,648.8	2,433.5	2,249.5	1,831.5	1,702.9	18.5	9.1	18.6	166	140	156	143	132	108
G	† GENPACT LIMITED	DEC	4,022.2	3,709.4	3,520.5	3,000.8	2,736.9	2,570.8	2,461.0	9.7	9.4	8.4	163	151	143	122	111	104
GPN	[] GLOBAL PAYMENTS INC.	DEC	8,523.8	7,423.6	4,911.9	3,366.4	3,975.2	3,776.4	3,776.4	16.4	17.7	14.8	226	197	130	89	105	100
JKHY	[] JACK HENRY & ASSOCIATES, INC.	JUN	1,758.2	1,697.1	1,552.7	1,470.8	1,388.3	1,354.6	1,256.2	6.2	5.4	3.6	140	135	124	117	111	108
MA	[] MASTERCARD INCORPORATED	DEC	18,884.0	15,301.0	16,883.0	14,950.0	12,497.0	10,776.0	9,667.0	10.9	11.9	23.4	195	158	175	155	129	111
MMS	† MAXIMUS, INC.	SEP	4,254.5	3,461.5	2,886.8	2,392.2	2,451.0	2,403.4	2,099.8	16.4	12.1	22.9	203	165	137	114	117	114
PAYX	[] PAYCHEX, INC.	MAY	4,611.7	4,056.8	4,040.5	3,772.5	3,377.7	3,153.0	2,951.9	6.9	6.6	0.4	156	137	137	128	114	107
PYPL	[] PAYPAL HOLDINGS, INC.	DEC	25,371.0	21,454.0	17,772.0	15,451.0	13,094.0	10,842.0	9,248.0	NA	18.5	18.3	274	232	192	167	142	117
PAYO	PAYONEER GLOBAL INC.	DEC	473.4	345.6	317.8	260.1	260.1	0.0	0.0	NA	NA	37.0	NA	NA	NA	NA	NA	NA
SABR	† SABRE CORPORATION	DEC	1,688.9	1,334.1	3,975.0	3,867.0	3,598.5	3,373.4	2,960.9	-5.1	-12.9	26.6	57	45	134	131	122	114
WU	† THE WESTERN UNION COMPANY	DEC	5,070.8	4,835.0	5,292.1	5,589.9	5,524.3	5,422.9	5,483.7	-0.8	-1.3	4.9	92	88	97	102	101	99
TTEC	§ TTEC HOLDINGS, INC.	DEC	2,273.1	1,949.2	1,643.7	1,509.2	1,477.4	1,275.3	1,286.8	6.8	12.3	16.6	177	151	128	117	115	99
V	[] VISA INC.	SEP	24,105.0	21,846.0	22,977.0	20,609.0	18,358.0	15,082.0	13,880.0	10.1	9.8	10.3	174	157	166	148	132	109
WEX	† WEX INC.	DEC	1,850.5	1,553.4	1,707.6	1,492.6	1,248.6	1,012.5	854.6	12.8	12.8	19.1	217	182	200	175	146	118
OTHER COMPANIES WITHIN DATA PROCESSING AND OUTSOURCED SERVICES OPERATIONS																		
COF	[] CAPITAL ONE FINANCIAL CORPORATION	DEC	32,379.0	18,259.0	22,357.0	22,220.0	19,686.0	19,042.0	18,877.0	8.8	11.2	77.3	172	97	118	118	104	101
FDC	FILINVEST DEVELOPMENT CORPORATION	DEC	62,314.5	69,541.9	84,616.3	72,147.2	66,187.7	56,933.3	48,287.7	10.5	1.8	-10.4	129	144	175	149	137	118
GDOT	§ GREEN DOT CORPORATION	DEC	1,433.0	1,258.1	1,106.7	1,060.5	895.3	717.0	696.0	11.4	14.9	13.9	206	181	159	152	129	103
IBM	[] INTERNATIONAL BUSINESS MACHINES CORPORATION	DEC	57,351.0	55,179.0	57,714.0	79,591.0	79,139.0	79,919.0	81,741.0	-6.0	-6.4	3.9	70	68	71	97	97	98
MGI	MONEYGRAM INTERNATIONAL, INC.	DEC	1,283.6	1,217.2	1,285.1	1,447.6	1,602.1	1,630.4	1,539.1	0.3	-4.7	5.5	83	79	83	94	104	106

Note: Data as originally reported. CAGR-Compound annual growth rate.
[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
Souce: S&P Capital IQ.

Net Income

Ticker		Company	Yr. End	Million $ 2021	2020	2019	2018	2017	2016	2015	CAGR (%) 10-Yr.	5-Yr.	1-Yr.	Index Basis (2011=100) 2021	2020	2019	2018	2017	2016
DATA PROCESSING AND OUTSOURCED SERVICES																			
ADP	[]	AUTOMATIC DATA PROCESSING, INC.	JUN	2598.5	2466.5	2292.8	1884.9	1787.8	1492.5	1452.5	7.6	11.7	5.4	179	170	158	130	123	103
BR	[]	BROADRIDGE FINANCIAL SOLUTIONS, INC.	JUN	547.5	462.5	482.1	427.9	326.8	307.5	287.1	12.4	12.2	18.4	191	161	168	149	114	107
CNXC	†	CONCENTRIX CORPORATION	NOV	405.6	164.8	117.2	48.3	72.3	72.3	0.0	NA	NA	146.1	NA	NA	NA	NA	NA	NA
CSGS	§	CSG SYSTEMS INTERNATIONAL, INC.	DEC	72.3	58.7	82.8	66.1	61.4	62.9	62.6	5.5	2.8	23.2	116	94	132	106	98	101
EEFT	†	EURONET WORLDWIDE, INC.	DEC	70.7	-3.4	346.7	232.9	156.8	174.4	98.8	6.7	-16.5	NM	72	-3	351	236	159	177
EVTC	§	EVERTEC, INC.	DEC	161.1	104.4	103.5	86.3	55.1	75.0	85.4	20.9	16.5	54.3	189	122	121	101	64	88
EXLS	§	EXLSERVICE HOLDINGS, INC.	DEC	114.8	89.5	67.7	56.7	48.9	61.7	51.6	12.7	13.2	28.3	223	174	131	110	95	120
FIS	[]	FIDELITY NATIONAL INFORMATION SERVICES, INC.	DEC	417.0	158.0	298.0	846.0	1261.0	525.0	632.0	-1.2	-4.5	163.9	66	25	47	134	200	83
FISV	[]	FISERV, INC.	DEC	1334.0	958.0	893.0	1187.0	1246.0	930.0	712.0	10.9	7.5	39.2	187	135	125	167	175	131
FLT	[]	FLEETCOR TECHNOLOGIES, INC.	DEC	839.5	704.2	895.1	811.5	740.2	452.4	362.4	19.0	13.2	19.2	232	194	247	224	204	125
G	†	GENPACT LIMITED	DEC	369.4	308.3	304.9	282.0	263.1	269.7	239.8	7.2	6.5	19.8	154	129	127	118	110	112
GPN	[]	GLOBAL PAYMENTS INC.	DEC	965.5	584.5	430.6	452.1	468.4	214.2	214.2	16.5	35.1	65.2	451	273	201	211	219	100
JKHY	[]	JACK HENRY & ASSOCIATES, INC.	JUN	311.5	296.7	271.9	365.0	229.6	248.9	211.2	8.5	4.6	5.0	147	140	129	173	109	118
MA	[]	MASTERCARD INCORPORATED	DEC	8687.0	6411.0	8118.0	5859.0	3915.0	4059.0	3808.0	16.4	16.4	35.5	228	168	213	154	103	107
MMS	†	MAXIMUS, INC.	SEP	291.2	214.5	240.8	220.8	209.4	178.4	157.8	13.6	10.3	35.8	185	136	153	140	133	113
PAYX	[]	PAYCHEX, INC.	MAY	1392.8	1097.5	1098.1	1034.4	994.1	826.3	756.8	7.9	7.7	-0.1	184	145	145	137	131	109
PYPL	[]	PAYPAL HOLDINGS, INC.	DEC	4169.0	4202.0	2459.0	2057.0	1795.0	1401.0	1228.0	NA	24.4	-0.8	339	342	200	168	146	114
PAYO		PAYONEER GLOBAL INC.	DEC	-34.0	-23.7	-0.6	-7.2	-7.2	0.0	0.0	NA	NA	43.1	NA	NA	NA	NA	NA	NA
SABR	†	SABRE CORPORATION	DEC	-928.5	-1282.3	158.6	337.5	242.5	242.6	545.5	30.2	NM	-27.6	-170	-235	29	62	44	44
WU	†	THE WESTERN UNION COMPANY	DEC	805.8	744.3	1058.3	851.9	-557.1	253.2	837.8	-3.6	26.1	8.3	96	89	126	102	-66	30
TTEC	§	TTEC HOLDINGS, INC.	DEC	141.0	118.6	77.2	35.8	7.3	33.7	61.7	6.6	33.2	18.8	229	192	125	58	12	55
V	[]	VISA INC.	SEP	12311.0	10866.0	12080.0	10301.0	6699.0	5991.0	6328.0	12.9	15.5	13.3	195	172	191	163	106	95
WEX	†	WEX INC.	DEC	0.1	-243.6	99.0	168.3	160.1	23.5	101.9	-49.8	-64.3	NM	0	-239	97	165	157	23
OTHER COMPANIES WITHIN DATA PROCESSING AND OUTSOURCED SERVICES OPERATIONS																			
COF	[]	CAPITAL ONE FINANCIAL CORPORATION	DEC	12390.0	2714.0	5546.0	6015.0	1982.0	3751.0	4050.0	14.7	27.0	356.5	306	67	137	149	49	93
FDC		FILINVEST DEVELOPMENT CORPORATION	DEC	6065.8	8460.9	11970.3	9768.7	6612.4	5502.7	4371.0	5.1	2.0	-28.3	139	194	274	223	151	126
GDOT	§	GREEN DOT CORPORATION	DEC	47.5	23.1	99.9	118.7	85.9	41.6	38.4	-0.9	2.7	105.3	124	60	260	309	224	108
IBM	[]	INTERNATIONAL BUSINESS MACHINES CORPORATION	DEC	5743.0	5590.0	9431.0	8728.0	5753.0	11872.0	13190.0	-9.7	-13.5	2.7	44	42	72	66	44	90
MGI		MONEYGRAM INTERNATIONAL, INC.	DEC	-37.9	-7.9	-60.3	-24.0	-29.8	15.9	-77.7	NA	NM	379.7	49	10	78	31	38	-20

Note: Data as originally reported. CAGR-Compound annual growth rate.
[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
Souce: S&P Capital IQ.

				Return on Revenues (%)						Return on Assets (%)						Return on Equity (%)					
Ticker		**Company**	**Yr. End**	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**
DATA PROCESSING AND OUTSOURCED SERVICES																					
ADP	[]	AUTOMATIC DATA PROCESSING, INC.	JUN	17.3	16.9	16.2	14.2	14.5	12.8	5.3	6.3	5.5	4.9	4.8	3.4	45.5	44.2	45.2	43.3	42.3	32.2
BR	[]	BROADRIDGE FINANCIAL SOLUTIONS, INC.	JUN	11.0	10.2	11.1	9.9	7.9	10.6	6.7	9.5	12.4	12.9	10.4	10.7	34.7	37.4	43.4	40.8	31.9	31.2
CNXC	†	CONCENTRIX CORPORATION	NOV	7.3	3.5	2.5	2.0	3.6	0.0	8.0	3.2	2.5	1.0	NA	NA	16.5	8.7	8.4	0.0	0.0	0.0
CSGS	§	CSG SYSTEMS INTERNATIONAL, INC.	DEC	6.9	5.9	8.3	7.6	7.8	8.3	5.2	4.4	6.5	5.9	6.8	7.1	16.8	14.3	21.8	18.8	20.7	21.1
EEFT	†	EURONET WORLDWIDE, INC.	DEC	2.4	NM	12.6	9.2	7.0	8.9	1.5	NM	7.4	7.0	5.0	6.4	5.2	NM	24.7	19.1	14.9	20.2
EVTC	§	EVERTEC, INC.	DEC	27.3	20.5	21.2	19.0	13.5	19.3	14.1	9.7	10.2	9.3	6.1	8.5	39.7	34.2	42.6	47.6	43.3	72.8
EXLS	§	EXLSERVICE HOLDINGS, INC.	DEC	10.2	9.3	6.8	6.4	6.4	9.0	8.9	7.2	5.7	5.3	5.9	8.7	16.3	12.9	10.5	9.3	8.6	12.4
FIS	[]	FIDELITY NATIONAL INFORMATION SERVICES, INC.	DEC	3.0	1.3	2.9	10.0	14.5	5.9	0.5	0.2	0.4	3.6	5.1	2.0	0.9	0.3	1.0	8.4	12.5	5.7
FISV	[]	FISERV, INC.	DEC	8.2	6.5	8.8	20.4	21.9	16.9	1.7	1.3	1.2	10.5	12.1	9.5	4.3	2.9	4.9	47.3	46.7	35.8
FLT	[]	FLEETCOR TECHNOLOGIES, INC.	DEC	29.6	29.5	33.8	33.3	32.9	24.7	6.3	6.3	7.3	7.2	6.5	4.7	27.0	19.9	25.4	23.1	21.9	15.3
G	†	GENPACT LIMITED	DEC	9.2	8.3	8.7	9.4	9.6	10.5	7.4	6.3	6.8	8.0	7.6	9.3	19.8	17.5	19.7	19.9	19.2	20.6
GPN	[]	GLOBAL PAYMENTS INC.	DEC	11.3	7.9	8.8	13.4	11.8	5.7	2.1	1.3	1.0	3.4	3.6	2.0	3.7	2.2	2.9	11.9	14.7	0.0
JKHY	[]	JACK HENRY & ASSOCIATES, INC.	JUN	17.7	17.5	17.5	24.8	16.5	18.4	13.3	12.2	12.4	18.0	12.0	13.7	21.7	19.9	19.8	31.0	22.6	25.0
MA	[]	MASTERCARD INCORPORATED	DEC	46.0	41.9	48.1	39.2	31.3	37.7	23.1	19.1	27.8	23.6	18.4	21.7	124.7	102.5	141.4	106.0	69.6	69.1
MMS	†	MAXIMUS, INC.	SEP	6.8	6.2	8.3	9.2	8.5	7.4	7.1	10.6	13.8	15.1	15.5	13.2	21.4	17.2	20.6	21.7	25.0	26.3
PAYX	[]	PAYCHEX, INC. #	MAY	30.2	27.1	27.2	27.4	29.4	26.2	14.5	11.9	12.8	11.9	12.6	12.1	46.2	38.3	40.7	41.6	46.1	42.7
PYPL	[]	PAYPAL HOLDINGS, INC.	DEC	16.4	19.6	13.8	13.3	13.7	12.9	5.5	6.0	4.8	4.7	4.4	4.2	20.0	22.7	15.2	13.1	11.7	9.8
PAYO		PAYONEER GLOBAL INC.	DEC	NM	NM	NM	NM	0.0	0.0	NM	NM	NM	NA	NA	NA	NM	NM	0.0	0.0	0.0	0.0
SABR	†	SABRE CORPORATION	DEC	NM	NM	4.0	8.7	6.7	7.2	NM	NM	2.8	5.8	4.3	4.2	NM	NM	17.1	40.8	37.7	43.5
WU	†	THE WESTERN UNION COMPANY	DEC	15.9	15.4	20.0	15.2	NM	4.7	9.1	7.8	12.1	9.5	NM	2.7	297.2	1012.0	NM	NM	NM	21.9
TTEC	§	TTEC HOLDINGS, INC.	DEC	6.2	6.1	4.7	2.4	0.5	2.6	7.1	7.8	5.6	3.4	0.7	4.0	28.6	26.1	20.3	11.1	3.0	9.3
V	[]	VISA INC.	SEP	51.1	49.7	52.6	50.0	36.5	39.7	14.9	13.4	16.6	14.9	9.9	9.4	33.4	30.7	35.2	30.9	20.4	19.1
WEX	†	WEX INC.	DEC	0.0	NM	5.8	11.3	12.8	2.3	0.0	NM	1.2	2.5	2.4	0.4	6.6	NM	8.0	9.9	10.1	1.6
OTHER COMPANIES WITHIN DATA PROCESSING AND OUTSOURCED SERVICES OPERATIONS																					
COF	[]	CAPITAL ONE FINANCIAL CORPORATION	DEC	38.3	14.9	24.8	27.1	10.1	19.7	2.9	0.6	1.4	1.6	0.5	1.1	20.4	4.6	10.1	12.0	4.4	8.0
FDC		FILINVEST DEVELOPMENT CORPORATION	DEC	9.7	12.2	14.1	13.5	10.0	9.7	0.9	1.3	1.9	1.7	1.2	1.1	5.9	8.4	12.6	11.7	9.6	8.4
GDOT	§	GREEN DOT CORPORATION	DEC	3.3	1.8	9.0	11.2	9.6	5.8	1.0	0.6	4.1	5.2	3.9	2.4	4.6	2.4	10.9	14.2	11.9	6.2
IBM	[]	INTERNATIONAL BUSINESS MACHINES CORPORATION	DEC	10.0	10.1	16.3	11.0	7.3	14.9	4.4	3.6	6.2	7.1	4.6	10.1	23.7	18.9	37.7	50.3	31.9	72.4
MGI		MONEYGRAM INTERNATIONAL, INC.	DEC	NM	NM	NM	NM	NM	1.0	NM	NM	NM	NM	NM	0.3	NM	NM	NM	NM	NM	NM

Note: Data as originally reported. CAGR-Compound annual growth rate.
[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
Souce: S&P Capital IQ.

				Current Ratio						Debt/Capital Ratio (%)						Debt as a % of Net Working Capital					
Ticker		Company	Yr. End	2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016
DATA PROCESSING AND OUTSOURCED SERVICES																					
ADP	[]	AUTOMATIC DATA PROCESSING, INC.	JUN	1.1	1.0	1.1	1.0	1.1	1.1	34.8	15.0	30.6	29.7	33.5	30.9	113.7	70.7	132.1	142.0	70.4	55.0
BR	[]	BROADRIDGE FINANCIAL SOLUTIONS, INC.	JUN	1.0	1.0	1.3	1.3	1.3	1.9	68.2	50.7	56.6	49.0	52.3	46.0	NM	NM	613.2	492.7	450.4	149.4
CNXC	†	CONCENTRIX CORPORATION	NOV	1.6	1.4	0.5	0.4	0.0	0.0	23.4	32.6	134.8	169.9	NA	NA	139.5	268.0	NM	NM	NA	NA
CSGS	§	CSG SYSTEMS INTERNATIONAL, INC.	DEC	1.1	1.6	1.6	1.7	2.5	1.9	23.8	44.4	46.6	49.4	47.4	56.5	258.4	121.1	138.4	141.4	93.2	122.6
EEFT	†	EURONET WORLDWIDE, INC.	DEC	1.8	1.8	1.8	1.5	1.3	1.3	53.1	49.9	41.1	34.4	26.9	40.0	97.6	95.2	85.4	88.5	89.5	144.3
EVTC	§	EVERTEC, INC.	DEC	2.9	2.3	1.9	1.6	1.1	1.2	49.3	59.7	65.9	71.0	80.7	88.7	161.6	245.9	398.9	664.4	2648.9	2163.5
EXLS	§	EXLSERVICE HOLDINGS, INC.	DEC	1.2	2.8	2.4	3.2	3.1	3.0	0.0	21.9	22.5	29.9	7.7	6.2	0.0	52.0	62.2	76.3	16.3	13.7
FIS	[]	FIDELITY NATIONAL INFORMATION SERVICES, INC.	DEC	0.7	0.8	0.8	1.2	0.9	1.4	30.0	28.6	30.1	47.3	41.6	50.8	NM	NM	NM	1469.9	NM	897.1
FISV	[]	FISERV, INC.	DEC	1.0	1.0	1.1	1.1	1.0	0.9	39.4	37.8	38.4	72.2	64.2	63.7	3592.3	3466.2	1639.0	2782.7	13235.1	NM
FLT	[]	FLEETCOR TECHNOLOGIES, INC.	DEC	1.0	1.0	1.0	0.9	0.9	0.8	79.2	64.4	69.7	76.7	66.6	66.5	2939.0	NM	3163.8	NM	NM	NM
G	†	GENPACT LIMITED	DEC	1.5	1.5	1.7	1.4	1.7	1.7	40.1	49.6	46.5	53.4	48.3	43.1	207.6	285.1	219.8	335.5	197.7	173.1
GPN	[]	GLOBAL PAYMENTS INC.	DEC	1.1	1.0	1.2	1.0	1.1	1.1	31.8	24.6	25.8	62.2	60.9	66.1	4780.6	20413.7	1216.2	5326.1	1064.5	1762.1
JKHY	[]	JACK HENRY & ASSOCIATES, INC.	JUN	1.0	1.4	1.2	1.1	1.1	1.0	7.0	0.0	0.0	0.0	4.6	0.0	437.1	0.0	0.0	0.0	102.4	0.0
MA	[]	MASTERCARD INCORPORATED	DEC	1.3	1.6	1.4	1.4	1.6	1.8	63.9	64.8	58.7	51.5	49.3	47.7	346.2	165.5	170.6	127.4	108.4	86.0
MMS	†	MAXIMUS, INC.	SEP	1.4	1.7	2.2	2.9	2.1	1.8	49.1	1.4	0.0	0.0	0.0	18.0	492.7	4.9	0.1	0.0	0.0	59.0
PAYX	[]	PAYCHEX, INC.	# MAY	1.2	1.2	1.2	1.2	1.1	1.1	20.8	21.5	22.4	23.3	0.0	0.0	61.4	65.4	77.3	95.6	0.0	0.0
PYPL	[]	PAYPAL HOLDINGS, INC.	DEC	1.2	1.3	1.4	1.3	1.4	1.5	27.0	30.8	22.7	13.0	6.3	0.0	84.3	71.2	42.9	28.3	10.2	0.0
PAYO		PAYONEER GLOBAL INC.	DEC	1.1	1.0	1.1	0.0	0.0	0.0	2.7	12.3	28.6	NA	NA	NA	2.9	20.5	37.4	NA	NA	NA
SABR	†	SABRE CORPORATION	DEC	2.0	3.0	1.1	1.2	1.0	0.7	111.8	94.3	77.5	77.4	82.9	84.0	688.8	372.6	3392.6	1972.1	NM	NM
WU	†	THE WESTERN UNION COMPANY	DEC	0.5	0.4	0.4	0.2	0.2	0.2	89.4	94.3	101.2	109.9	119.3	75.5	NM	(83.5)	(99.0)	(80.6)	(58.9)	(66.8)
TTEC	§	TTEC HOLDINGS, INC.	DEC	1.6	1.7	1.5	2.2	2.7	2.4	57.1	43.0	37.6	44.4	48.7	37.5	311.9	147.7	155.5	96.9	101.3	85.7
V	[]	VISA INC.	SEP	1.8	1.9	1.6	1.6	1.9	1.8	34.7	36.8	32.5	32.8	33.7	32.5	168.3	160.4	221.4	240.6	184.1	253.4
WEX	†	WEX INC.	DEC	1.2	1.3	1.3	1.5	1.2	1.4	58.4	60.5	58.5	57.0	58.9	59.4	311.0	391.5	353.8	206.2	341.9	291.7
OTHER COMPANIES WITHIN DATA PROCESSING AND OUTSOURCED SERVICES OPERATIONS																					
COF	[]	CAPITAL ONE FINANCIAL CORPORATION	DEC	0.0	0.0	0.0	0.0	0.0	0.0	38.2	41.2	52.9	59.1	56.2	57.5	(12.3)	(15.5)	(21.7)	(24.1)	(26.3)	(27.2)
FDC		FILINVEST DEVELOPMENT CORPORATION	DEC	3.2	3.2	3.3	4.3	4.0	2.3	46.1	45.7	49.8	53.7	54.1	53.8	45.3	39.8	43.0	42.7	44.2	67.5
GDOT	§	GREEN DOT CORPORATION	DEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.2	7.3	10.6	(0.0)	(0.0)	NM	11.4	NM	2601.4
IBM	[]	INTERNATIONAL BUSINESS MACHINES CORPORATION	DEC	0.9	1.0	1.0	1.3	1.3	1.2	70.3	72.5	73.7	73.8	72.3	67.7	NM	NM	7680.9	354.6	336.6	472.0
MGI		MONEYGRAM INTERNATIONAL, INC.	DEC	33.5	37.4	34.4	64.0	34.7	31.1	130.7	138.2	139.4	142.5	137.0	130.8	21.6	22.6	25.8	25.9	23.6	25.0

Note: Data as originally reported. CAGR-Compound annual growth rate.
[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
Souce: S&P Capital IQ.

Ticker		Company	Yr. End	Price/Earnings Ratio (High-Low) 2021	2020	2019	2018	2017	2016	Dividend Payout Ratio (%) 2021	2020	2019	2018	2017	2016	Dividend Yield (High-Low, %) 2021	2020	2019	2018	2017	2016
DATA PROCESSING AND OUTSOURCED SERVICES																					
ADP	[]	AUTOMATIC DATA PROCESSING, INC.	JUN	33 - 21	32 - 19	32 - 23	33 - 24	26 - 21	28 - 23	60.6	59.6	56.4	56.4	55.7	63.2	2.1 - 1.6	2.8 - 1.9	3.3 - 1.8	2.6 - 1.8	2.4 - 1.9	2.5 - 2.2
BR	[]	BROADRIDGE FINANCIAL SOLUTIONS, INC.	JUN	35 - 26	33 - 21	33 - 22	33 - 20	28 - 22	25 - 19	47.8	52.1	43.8	38.7	46.6	44.9	1.9 - 1.3	1.8 - 1.4	2.6 - 1.4	2.1 - 1.2	2.0 - 1.2	2.2 - 1.7
CNXC	†	CONCENTRIX CORPORATION	NOV	24 - 12	25 - 25	NA - NA	NA - NA			3.2	0.0	0.0	0.0	0.0	0.0	1.0 - 0.5	0.6 - 0.5	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
CSGS	§	CSG SYSTEMS INTERNATIONAL, INC.	DEC	25 - 19	29 - 21	NA - NA	NA - NA	NA - NA	NA - NA	45.1	52.9	35.2	42.3	43.8	38.3	2.0 - 1.6	2.3 - 1.8	2.5 - 1.6	2.7 - 1.5	2.5 - 1.7	2.2 - 1.5
EEFT	†	EURONET WORLDWIDE, INC.	DEC	122 - 75	NM - NM	26 - 15	27 - 16	33 - 24	25 - 17	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
EVTC	§	EVERTEC, INC.	DEC	23 - 16	29 - 13	25 - 19	25 - 11	25 - 17	18 - 11	8.9	13.8	13.9	8.4	39.5	39.6	0.6 - 0.4	0.6 - 0.4	1.1 - 0.5	0.8 - 0.5	0.9 - 0.0	2.7 - 0.0
EXLS	§	EXLSERVICE HOLDINGS, INC.	DEC	42 - 22	33 - 16	36 - 26	40 - 30	43 - 31	29 - 23	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
FIS	[]	FIDELITY NATIONAL INFORMATION SERVICES, INC.	DEC	230 - 151	617 - 401	209 - 147	43 - 36	25 - 20	50 - 35	230.5	549.4	220.1	49.8	30.5	65.0	3.3 - 1.3	1.5 - 0.9	1.4 - 0.9	1.3 - 1.0	1.4 - 1.1	1.5 - 1.2
FISV	[]	FISERV, INC.	DEC	63 - 47	87 - 54	67 - 40	28 - 22	22 - 18	26 - 21	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
FLT	[]	FLEETCOR TECHNOLOGIES, INC.	DEC	29 - 20	39 - 20	30 - 18	25 - 19	24 - 16	36 - 23	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
G	†	GENPACT LIMITED	DEC	27 - 19	28 - 14	27 - 16	24 - 17	24 - 17	22 - 17	21.8	24.1	21.2	20.2	17.7	0.0	1.3 - 0.8	1.1 - 0.8	1.7 - 0.8	1.2 - 0.8	1.1 - 0.7	1.0 - 0.7
GPN	[]	GLOBAL PAYMENTS INC.	DEC	66 - 36	107 - 59	84 - 45	45 - 33	34 - 23	57 - 38	26.9	39.9	14.7	1.4	1.4	2.5	1.1 - 0.7	0.8 - 0.4	0.7 - 0.4	0.5 - 0.0	0.0 - 0.0	0.1 - 0.0
JKHY	[]	JACK HENRY & ASSOCIATES, INC.	JUN	48 - 35	49 - 34	46 - 34	28 - 21	36 - 27	27 - 21	43.0	43.0	43.7	28.8	39.9	33.8	1.2 - 1.0	1.3 - 0.9	1.3 - 0.9	1.2 - 0.9	1.3 - 1.0	1.4 - 1.2
MA	[]	MASTERCARD INCORPORATED	DEC	45 - 35	57 - 32	38 - 23	40 - 27	42 - 28	29 - 22	20.0	25.0	16.6	17.8	24.1	20.6	0.7 - 0.5	0.6 - 0.4	0.8 - 0.4	0.8 - 0.5	0.7 - 0.4	0.9 - 0.6
MMS	†	MAXIMUS, INC.	SEP	20 - 14	23 - 15	22 - 17	21 - 18	20 - 14	26 - 17	23.6	32.7	26.5	5.3	5.6	6.6	2.0 - 1.3	1.7 - 1.2	2.3 - 1.2	1.6 - 0.3	0.3 - 0.2	0.4 - 0.3
PAYX	[]	PAYCHEX INC. #	MAY	33 - 23	29 - 16	30 - 21	25 - 20	27 - 23	26 - 20	71.8	82.8	81.0	79.9	74.4	80.2	2.7 - 1.9	4.0 - 2.5	4.9 - 2.6	3.7 - 2.7	3.7 - 2.8	3.4 - 2.8
PYPL	[]	PAYPAL HOLDINGS, INC.	DEC	87 - 50	68 - 24	58 - 39	54 - 41	53 - 26	38 - 27	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
PAYO		PAYONEER GLOBAL INC.	DEC	NM - NM	NM - NM	NA - NA	NA - NA			0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
SABR	†	SABRE CORPORATION	DEC	NM - NM	NM - NM	43 - 34	22 - 15	29 - 20	34 - 27	NM	NM	96.8	45.6	63.9	59.5	0.0 - 0.0	0.0 - 0.0	16.9 - 0.0	2.9 - 2.1	3.0 - 2.1	3.2 - 1.9
WU	†	THE WESTERN UNION COMPANY	DEC	13 - 8	16 - 10	11 - 7	11 - 9	NM - NM	43 - 32	47.4	49.8	32.2	40.1	NM	123.3	7.6 - 4.7	5.9 - 3.6	5.1 - 2.8	4.6 - 2.9	4.3 - 3.3	3.8 - 2.8
TTEC	§	TTEC HOLDINGS, INC.	DEC	37 - 24	31 - 11	30 - 16	54 - 31	274 - 182	45 - 34	29.9	29.1	37.2	70.8	296.7	54.2	2.6 - 1.0	1.2 - 0.8	2.5 - 1.1	2.3 - 1.2	2.4 - 1.2	1.5 - 1.0
V	[]	VISA INC.	SEP	44 - 32	44 - 28	35 - 23	34 - 23	38 - 27	33 - 27	22.7	24.5	18.8	18.6	23.6	22.5	0.8 - 0.5	0.7 - 0.5	0.9 - 0.5	0.8 - 0.5	0.7 - 0.6	0.9 - 0.6
WEX	†	WEX INC.	DEC	75163 - 40418	NM - NM	97 - 59	51 - 34	38 - 26	202 - 101	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
OTHER COMPANIES WITHIN DATA PROCESSING AND OUTSOURCED SERVICES OPERATIONS																					
COF	[]	CAPITAL ONE FINANCIAL CORPORATION	DEC	7 - 4	21 - 8	9 - 7	9 - 6	29 - 22	13 - 8	9.3	27.3	18.7	17.3	52.7	27.4	2.6 - 1.5	1.7 - 0.3	3.8 - 0.4	2.3 - 1.6	1.9 - 1.5	2.1 - 1.7
FDC		FILINVEST DEVELOPMENT CORPORATION	DEC	14 - 11	14 - 7	12 - 9	11 - 6	12 - 11	14 - 7	25.0	22.4	14.1	14.9	21.4	23.5	1.5 - 1.0	1.7 - 1.2	1.8 - 0.7	0.8 - 0.5	1.1 - 0.7	0.8 - 0.6
GDOT	§	GREEN DOT CORPORATION	DEC	69 - 39	149 - 39	43 - 12	41 - 25	38 - 14	31 - 19	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
IBM	[]	INTERNATIONAL BUSINESS MACHINES CORPORATION	DEC	24 - 18	25 - 15	14 - 11	18 - 11	30 - 23	14 - 9	102.2	103.7	60.5	64.9	95.7	44.3	5.6 - 4.5	5.7 - 4.3	6.8 - 4.1	5.8 - 4.3	5.4 - 3.5	4.3 - 3.1
MGI		MONEYGRAM INTERNATIONAL, INC.	DEC	NM - NM	NM - NM	NM - NM	NM - NM	NM - NM	49 - 19	0.0	0.0	0.0	0.0	0.0	0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0

Note: Data as originally reported. CAGR-Compound annual growth rate.

[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.

Souce: S&P Capital IQ.

Ticker	Company	Yr. End	Earnings per Share ($)						Tangible Book Value per Share ($)						Share Price (High-Low, $)					
			2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016	2021	2020	2019	2018	2017	2016
DATA PROCESSING AND OUTSOURCED SERVICES																				
ADP	[] AUTOMATIC DATA PROCESSING, INC.	JUN	6.1	5.7	5.2	4.3	4.0	3.2	5.0	5.2	4.6	3.7	3.6	5.0	249.0 - 159.3	182.3 - 103.1	174.5 - 126.1	153.5 - 107.6	121.8 - 94.1	103.9 - 76.7
BR	[] BROADRIDGE FINANCIAL SOLUTIONS, INC.	JUN	4.7	4.0	4.1	3.6	2.7	2.5	(28.7)	(7.9)	(8.1)	(5.6)	(5.5)	(1.4)	185.4 - 137.9	154.2 - 81.9	137.0 - 92.4	138.2 - 87.5	92.4 - 65.2	71.7 - 48.6
CNXC	† CONCENTRIX CORPORATION	NOV	7.7	3.2	2.3	0.9	0.0	0.0	2.9	(6.5)	(25.1)	0.0	0.0	0.0	191.4 - 96.4	116.8 - 80.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
CSGS	§ CSG SYSTEMS INTERNATIONAL, INC.	DEC	2.3	1.8	2.6	2.0	1.9	1.9	0.9	2.3	1.5	(0.1)	2.4	(0.3)	59.5 - 42.6	54.9 - 36.3	58.7 - 31.3	48.8 - 30.4	51.3 - 35.5	49.9 - 32.5
EEFT	† EURONET WORLDWIDE, INC.	DEC	1.3	(0.1)	6.3	4.3	2.9	3.2	10.1	12.5	12.8	8.0	6.3	0.9	167.7 - 101.2	167.6 - 61.3	171.3 - 96.4	121.9 - 70.7	101.1 - 70.5	84.8 - 52.0
EVTC	§ EVERTEC, INC.	DEC	2.2	1.4	1.4	1.2	0.8	1.0	(2.0)	(3.9)	(5.3)	(6.1)	(7.4)	(7.8)	51.1 - 33.9	42.4 - 18.2	37.4 - 25.1	29.7 - 13.5	19.5 - 12.6	18.6 - 11.3
EXLS	§ EXLSERVICE HOLDINGS, INC.	DEC	3.4	2.6	2.0	1.6	1.4	1.8	6.0	8.9	6.9	4.9	10.2	8.6	146.0 - 76.4	87.5 - 40.6	71.0 - 50.0	67.1 - 44.3	63.4 - 44.3	54.8 - 40.8
FIS	[] FIDELITY NATIONAL INFORMATION SERVICES, INC.	DEC	0.7	0.3	0.7	2.6	3.8	1.6	(34.2)	(34.3)	(35.5)	(25.3)	(25.9)	(32.6)	156.0 - 101.8	158.2 - 91.7	141.4 - 98.1	110.8 - 92.1	96.7 - 75.5	81.7 - 55.1
FISV	[] FISERV, INC.	DEC	2.0	1.4	1.7	2.9	2.9	2.1	(30.0)	(28.9)	(30.4)	(14.1)	(11.4)	(10.8)	127.3 - 92.1	125.1 - 73.5	118.0 - 68.5	82.8 - 62.8	66.7 - 52.3	55.8 - 42.8
FLT	[] FLEETCOR TECHNOLOGIES, INC.	DEC	10.0	8.1	9.9	8.8	7.9	4.8	(57.7)	(41.6)	(40.6)	(42.1)	(41.9)	(41.0)	295.4 - 200.8	329.9 - 168.5	315.8 - 180.1	230.2 - 172.2	194.5 - 121.5	176.4 - 107.6
G	† GENPACT LIMITED	DEC	1.9	1.6	1.6	1.5	1.3	1.3	(0.0)	(0.5)	(0.6)	(0.9)	(0.2)	0.7	54.0 - 38.3	45.2 - 19.4	44.6 - 26.2	34.8 - 25.5	32.8 - 23.3	28.5 - 22.6
GPN	[] GLOBAL PAYMENTS INC.	DEC	3.3	2.0	2.2	2.8	3.0	1.4	(38.0)	(28.7)	(30.2)	(30.6)	(25.7)	(28.0)	220.8 - 116.7	215.7 - 105.5	185.4 - 98.6	129.3 - 94.8	104.9 - 69.0	79.9 - 51.3
JKHY	[] JACK HENRY & ASSOCIATES, INC.	JUN	4.1	3.9	3.5	4.7	2.9	3.1	2.1	5.2	4.0	3.0	1.4	1.0	180.0 - 141.6	201.0 - 123.6	152.9 - 121.0	163.7 - 112.8	119.8 - 88.1	91.1 - 73.2
MA	[] MASTERCARD INCORPORATED	DEC	8.8	6.4	7.9	5.6	3.7	3.7	(4.1)	(0.3)	0.5	1.5	1.2	2.9	401.5 - 306.0	367.3 - 200.0	301.5 - 181.0	225.4 - 151.1	154.7 - 104.0	108.9 - 78.5
MMS	† MAXIMUS, INC.	SEP	4.7	3.4	3.7	3.4	3.2	2.7	(19.6)	7.6	7.1	8.9	6.3	3.3	96.1 - 72.1	80.5 - 46.4	82.0 - 64.1	72.7 - 60.0	72.5 - 51.7	61.7 - 43.7
PAYX	[] PAYCHEX, INC. #	MAY	3.8	3.0	3.0	2.9	2.8	2.3	2.9	2.4	1.8	1.2	3.9	3.5	139.0 - 85.3	100.0 - 47.9	88.4 - 63.3	76.0 - 59.4	70.4 - 54.2	62.2 - 45.8
PYPL	[] PAYPAL HOLDINGS, INC.	DEC	3.5	3.5	2.1	1.7	1.5	1.2	7.7	8.4	8.4	7.1	9.6	8.7	310.2 - 179.2	244.3 - 82.1	121.5 - 81.9	93.7 - 70.2	79.4 - 39.0	44.5 - 30.5
PAYO	PAYONEER GLOBAL INC.	DEC	(0.3)	(0.8)	(0.3)	(1.1)	0.0	0.0	1.3	(1.3)	(1.1)	0.0	0.0	0.0	14.5 - 6.1	10.7 - 9.6	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
SABR	† SABRE CORPORATION	DEC	(3.0)	(4.5)	0.6	1.2	0.9	0.9	(10.6)	(9.0)	(8.3)	(8.0)	(9.3)	(9.8)	16.9 - 7.1	23.3 - 3.3	25.4 - 19.4	26.8 - 17.9	25.9 - 17.3	29.8 - 22.0
WU	† THE WESTERN UNION COMPANY	DEC	2.0	1.8	2.5	1.9	(1.2)	0.5	(5.3)	(6.3)	(6.8)	(7.5)	(7.7)	(5.5)	26.6 - 15.7	28.4 - 17.4	28.0 - 16.8	22.2 - 16.4	22.7 - 18.4	22.3 - 16.0
TTEC	§ TTEC HOLDINGS, INC.	DEC	3.0	2.5	1.7	0.8	0.2	0.7	(9.1)	(0.7)	0.0	1.3	1.2	4.2	113.4 - 70.4	80.0 - 26.3	50.5 - 26.8	42.3 - 23.0	43.8 - 28.2	32.0 - 24.2
V	[] VISA INC.	SEP	5.6	4.9	5.3	4.4	2.8	2.5	(4.8)	(6.5)	(6.7)	(6.9)	(7.3)	(6.9)	252.7 - 190.1	220.4 - 133.9	189.9 - 127.9	151.6 - 111.0	114.9 - 78.5	84.0 - 66.1
WEX	† WEX INC.	DEC	0.0	(5.6)	2.3	3.9	3.7	0.6	(60.5)	(52.8)	(48.2)	(25.1)	(32.8)	(37.5)	234.6 - 123.0	236.5 - 71.1	221.7 - 134.4	203.5 - 131.4	142.3 - 97.3	117.1 - 54.4
OTHER COMPANIES WITHIN DATA PROCESSING AND OUTSOURCED SERVICES OPERATIONS																				
COF	[] CAPITAL ONE FINANCIAL CORPORATION	DEC	26.9	5.2	11.0	11.8	3.5	6.9	99.8	88.5	84.0	69.5	60.6	58.3	178.0 - 97.0	107.6 - 38.0	105.7 - 74.4	106.5 - 69.9	101.4 - 76.1	91.6 - 58.0
FDC	FILINVEST DEVELOPMENT CORPORATION	DEC	0.7	1.0	1.4	1.1	0.7	0.6	12.2	10.5	9.8	8.3	7.3	5.4	9.7 - 7.4	13.5 - 6.5	16.3 - 11.8	13.8 - 6.8	8.2 - 7.5	8.3 - 4.1
GDOT	§ GREEN DOT CORPORATION	DEC	0.9	0.4	1.9	2.2	1.6	0.8	8.7	7.4	5.5	5.0	2.2	3.5	61.9 - 33.3	65.0 - 14.2	84.0 - 22.0	93.0 - 54.1	65.9 - 23.4	25.4 - 15.3
IBM	[] INTERNATIONAL BUSINESS MACHINES CORPORATION	DEC	6.3	6.2	10.6	9.5	6.1	12.4	(54.8)	(52.5)	(59.3)	(25.3)	(24.9)	(23.9)	152.8 - 114.6	158.8 - 90.6	153.0 - 111.7	171.1 - 105.9	182.8 - 139.1	170.0 - 116.9
MGI	MONEYGRAM INTERNATIONAL, INC.	DEC	(0.4)	(0.1)	(0.9)	(0.4)	(0.5)	0.2	(6.9)	(9.4)	(9.6)	(11.0)	(10.9)	(10.8)	12.4 - 5.1	8.9 - 1.2	6.7 - 1.3	14.0 - 1.6	17.9 - 11.3	12.7 - 4.7

Note: Data as originally reported. CAGR-Compound annual growth rate.
[]Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
Souce: S&P Capital IQ.

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