Analyst: Ken Zacher



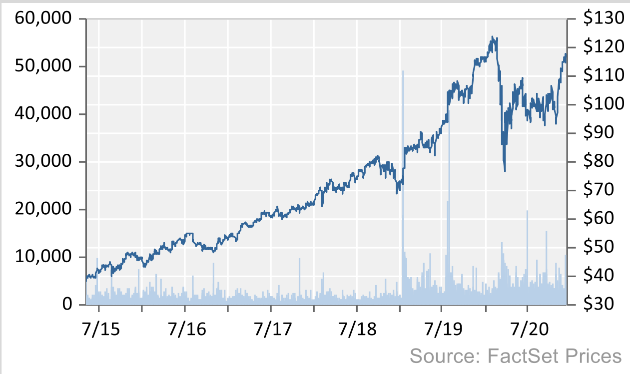
Information Technology, Financial Services

# Fiserv, Inc.

**Recommendation: Buy**

| | | | | |
|---|---|---|---|---|
| Current Price | **$113.63** | --- | Ticker | FISV |
| 1 Year Bear | $105 | *-8%* | Sh. Out. (M) | 670 |
| 1 Year Base | **$135** | ***19%*** | M.Cap. ($M) | 7,698 |
| 1 Year Bull | $150 | *32%* | EV ($M) | 9,730 |

## Price History




| | 5Y | 3Y | 2Y | LTM | YTD | 3M | 1M |
|---|---|---|---|---|---|---|---|
| **Return** | 140% | 78% | 56% | -2% | -1% | 21% | 8% |

## Financials

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021E` | 2022E |
|---|---|---|---|---|---|---|---|
| Sales($B) | **5.5** | **5.7** | **5.8** | **10.2** | **14.0** | **15.1** | **16.3** |
| *Gr. %* | 4.8% | 3.5% | 2.2% | 74.9% | 37.4% | 8.3% | 7.6% |
| *v. Cons.* | - | - | - | - | - | 8.0% | 7.0% |
| **EPS** | **$2.11** | **$2.95** | **$2.93** | **$1.74** | **$2.05** | **$3.20** | **$4.27** |
| *Gr. %* | 40.7% | 39.8% | -0.7% | -40% | 17.8% | 56.1% | 33.4% |
| *v. Cons.* | - | - | - | - | - | 71.0% | 56.0% |

## Ratios

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021E | 2022E |
|---|---|---|---|---|---|---|---|
| **NPM** | **16.9%** | **21.9%** | **20.4%** | **8.8%** | **8.9%** | **12.7%** | **15.2%** |
| *Industry* | 9.5% | 13.1% | 15.6% | 11.3% | 10.3% | | |
| **ROE** | 36.6% | 47.3% | 47.3% | 4.8% | 3.6% | 5.4% | 6.9% |
| *Industry* | 18.1% | -25% | 20.1% | 6.9% | 6.7% | | |
| **ROA** | 9.5% | 12.4% | 11.0% | 2.0% | 1.6% | 2.5% | 3.1% |
| *Industry* | 5.6% | 6.6% | 8.0% | 5.4% | 4.6% | | |
| **A T/O** | 0.57 | 0.57 | 0.54 | 0.23 | 0.18 | 0.20 | 0.21 |
| **A/E** | 3.83 | 3.80 | 4.29 | 2.41 | 2.22 | 2.19 | 2.19 |

## Valuation

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021E | 2022E |
|---|---|---|---|---|---|---|---|
| P/E | 26.7 | 31.2 | 21.4 | 53.5 | 87.3 | 21.4 | 18.4 |
| *Industry* | 39.2 | 52.4 | 21.1 | 28.4 | 66.5 | 26.0 | 22.9 |
| P/S | 4.4 | 5.0 | 5.2 | 9.0 | 5.5 | | |
| P/B | 9.0 | 11.7 | 11.1 | 2.4 | 2.4 | | |
| P/CF | 16.5 | 20.0 | 20.9 | 31.5 | 16.4 | | |
| EV/EBITDA | 14.9 | 16.9 | 16.4 | 38.6 | 46.3 | | |
| D/P | 0% | 0% | 0% | 0% | 0% | | |

## Summary

I recommend a buy rating with a target of $135. Fiserv acquired First Data in 2019, opening up new sources of revenue growth and diversifying Fiserv from its core operations. While there are some integration risks, I believe that the company will be able to achieve the synergies laid out by management and produce strong sales and earnings growth going forward. There is also a nice tailwind as society becomes cashless over time. This trend has been amplified by the Covid-19 pandemic. The stock is undervalued based on relative and DCF analysis.

## Key Drivers

- Integration of First Data Acquisition: Fiserv made its largest acquisition ever when they purchased First Data in 2019. The First Data Segment represents nearly 40% of total company revenue as of 2020. Sales and earnings growth depend on successful integration.
- International Expansion: Fiserv's international revenues have historically been less than 5% of total revenue, but First Data has a large global client base. Fiserv can leverage First Data's large international presence to aid its own expansion.
- Consolidation in the Banking Industry: There is a long-term trend of banks consolidating via mergers and acquisitions, reducing Fiserv's potential customer base.
- Macroeconomic Trends: Fiserv is highly correlated with consumer confidence. The state of the economy has a large impact on Fiserv's operating performance.

## Valuation

Using a relative valuation approach, Fiserv is undervalued compared to its peers. DCF analysis implies that the stock is undervalued and should be worth $132. Taking a weighted average of the approaches suggests that Fiserv is undervalued, as the stock's value should be $135 and the shares trade at $113.63.

## Risks

- Integration issues with First Data
- Prolonged downturn in the economy from Covid-19
- Increased government regulation of the financial industry

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## Company Overview

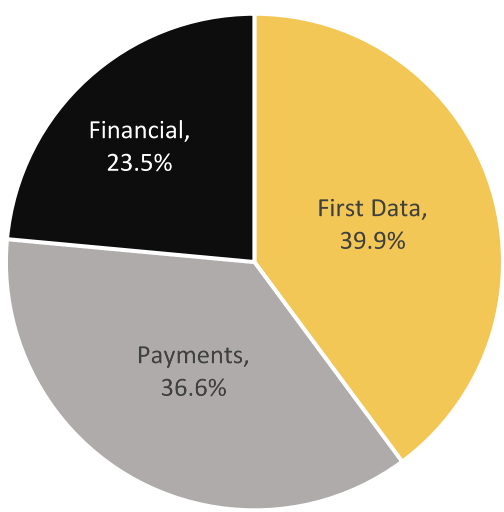
Fiserv, Inc. (FISV) is a leading global provider of financial services technology. Fiserv serves clients around the globe, including banks, credit unions, other financial institutions, and merchants, providing them with account processing systems, electronic payments processing products, account-to-account transfers, debit network solutions, payments infrastructure services, internet and mobile banking systems, loan origination and servicing products, fraud and risk management products, and point-of-sale merchant acquiring and e-commerce services. Most of the services that Fiserv provides are necessary for its clients to operate their businesses and are non-discretionary in nature. The company services clients in the United States, Canada, Europe, Middle East, Africa, Latin America, and Asia Pacific regions.

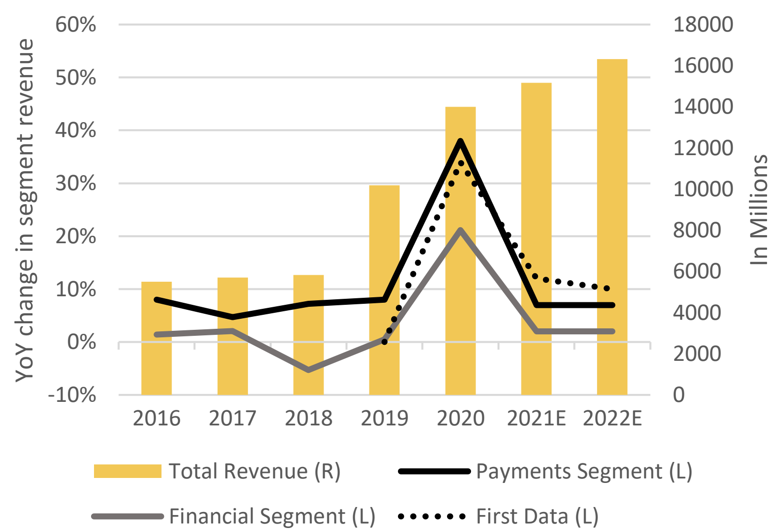
In 2019, Fiserv generated 84% of its revenue from the Processing and Services segment, which are typically account and transaction-based fees under multi-year contracts with high renewal rates. The other 16% of revenue was from the Products division, which is derived from integrated print and card production sales, as well as software license sales and hardware (POS) sales. As of 2019, Fiserv operated in three distinct segments:

The First Data and payments segments are Fiserv's main areas of growth

1) First Data: Acquired in July of 2019, First Data is a global leader in commerce enabling technology and solutions for merchants, financial institutions, and card issuers. First Data offers the Clover POS system, allowing small businesses to easily accept card and mobile payments. First Data was just acquired in 2019 so there is no historical growth rate for this segment yet; however, it is expected to grow around 10% for each of the next two years.
2) Payments: This segment provides financial institutions and other companies with the products and services required to process electronic payment transactions and to offer their customers access to financial services and transaction capability through digital channels. The payments segment has seen a five-year CAGR of 5.5%.
3) Financial: This segment provides financial institutions with the products and services they need to run their operations. Financial institutions can typically reduce costs and enhance their service offerings by outsourcing their processing requirements to Fiserv. The financial segment has seen a five-year CAGR of -0.3%.

**Figures 1 & 2: Revenue Sources for FISV by segment in FY2019 (left) and revenue history with segment growth since 2015**




*Source: Company Reports*

## Business/Industry Drivers

Though several factors may contribute to Fiserv's future success, the following are the most important business drivers:

1) The Integration of the First Data Acquisition
2) International Expansion
3) Consolidation in the Banking Industry
4) Macroeconomic Trends

The Integration of the First Data Acquisition

The First Data Acquisition was the first of three major mergers in the fintech industry in 2019

One of the most important business drivers for Fiserv is the acquisition and integration of First Data Corporation. This was a major acquisition for Fiserv, with a total purchase price of $46.5 billion. It was an all-stock transaction, where First Data shareholders received 0.303 Fiserv shares for each share of First Data common stock that they held. Fiserv also made a cash payment of $16.4 billion to repay existing First Data debt. This payment and other transaction-related expenses were funded through a combination of cash on-hand, proceeds from the issuance of senior notes, and revolving credit facility borrowings.

The First Data Acquisition solidifies Fiserv as one of the world's leading payments and financial technology providers. Fiserv's traditional strength has been offering core processing platforms to financial institutions, whereas First Data is geared more towards merchants and issuers. The combined company will be able to offer end-to-end solutions to clients, boosting the competitive positioning of the company. There are numerous opportunities for future growth for the company through cross selling new service offerings to existing clients, attracting new clients with the enhanced offerings of the combined company, and international expansion due to First Data's large global footprint. Fiserv and First Data have highly complementary products that will create value for their clients through an expanded universe of solutions. For example, Fiserv will be able to help financial institution clients meet the needs of business and commercial clients with offerings like First Data's Clover POS system.

Fiserv management anticipates $500 million in annual run-rate revenue synergies, and $900 million in annual run-rate cost savings as a result of the acquisition. These synergies are expected to be realized over the next five years following the acquisition. If fully realized, the cost savings will add $1.02 in EPS and the revenue synergies will add $0.57 in EPS in five years. This would represent about 75% EPS growth from 2020 levels. Management has reported they are ahead of schedule on the cost savings and on track to achieve the revenue synergies as well.

**Figures 3: Tables displaying annual run rate revenue synergies and cost savings**

| Annual Run-Rate Revenue Synergies | |
|---|---|
| Distribution of merchant bank acquiring services | $200 million |
| Expanded payments offerings and network innovation | $250 million |
| Integrated Sales | $50 million |
| Total | $500 million |
| **Annual Run-Rate Cost Savings** | |
| Technology Infrastructure | $350 million |
| Operational Synergies | $200 million |
| Duplicative Corporate Structures | $350 million |
| Total | $900 million |

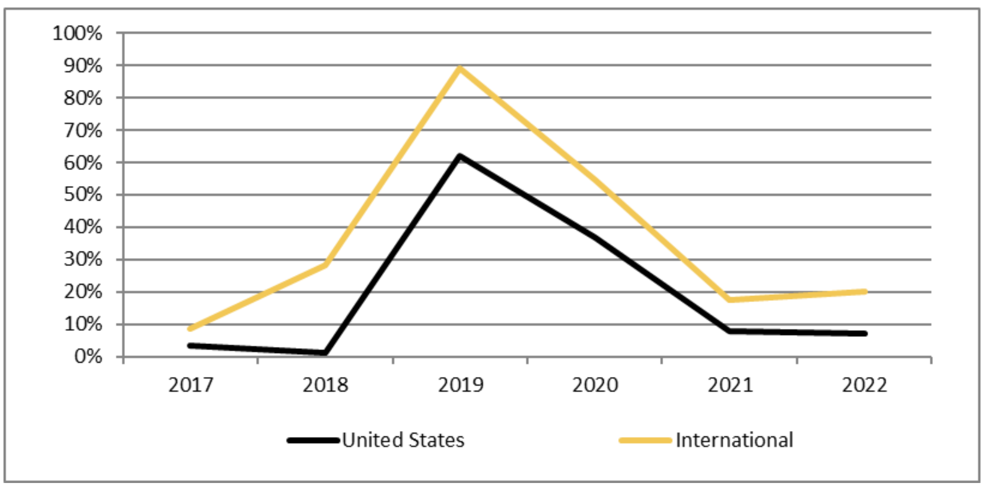
*Source: Company Presentation*

The cost savings of the acquisition come from three different areas, technology infrastructure ($350m), operational synergies ($200m), and duplicative corporate structures ($350m). The revenue synergies can be broken down into three categories: Distribution of merchant banking acquiring services ($200m), expanded payments offerings and network innovation ($250m), and integrated sales ($50m). Fiserv expects to incrementally invest the $500 million in revenue synergies to develop significantly enhanced solutions for clients and accelerate growth.

International Expansion

One of Fiserv's largest opportunities for revenue growth is through international expansion. The United States is a mature market for financial technology companies, and it can be costly for banks and other financial institutions to switch providers for their online banking infrastructure and other services. This limits the number of new customers Fiserv can obtain in the United States. In addition to this, Fiserv already generates an overwhelming majority of its revenue in North America. As foreign economies become more developed, there will be a demand for financial infrastructure and services. With the acquisition of First Data, Fiserv has provided itself with a clear runway towards international expansion. At the time of the acquisition, First Data was the number one global merchant acquirer, the number one global issuer processor, and had more than one billion card accounts on file globally. Fiserv will be able to leverage this high level of international penetration to accelerate its own international growth.

**Figure 4: Domestic and International revenue growth rates**



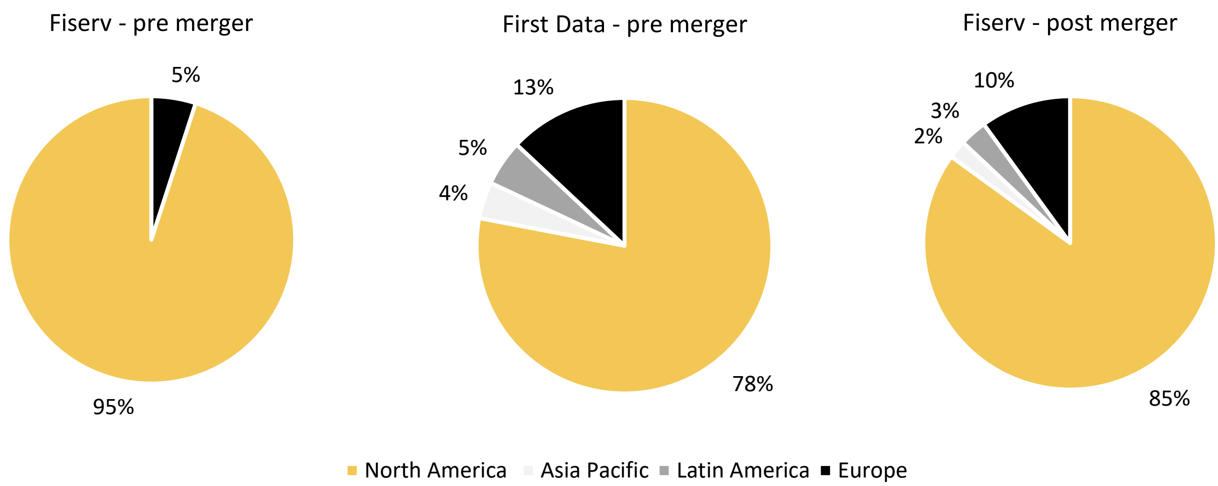

*Source: Factset, IMCP*

The First Data acquisition helps diversify Fiserv's geographic revenue

International revenue growth has outpaced domestic growth in each of the last four years and is projected to continue to do so through 2022. Some foreign economies are further along on becoming "cashless" than the United States, so there is certainly an opportunity for Fiserv to sign new clients, whether it be for their traditional bank processing or card issuance offerings.

Prior to the First Data Acquisition, 95% of Fiserv's revenue was generated in North America. While international revenue has been growing, the acquisition of First Data caused revenue from outside of North America to rise from 5% to 15%, as shown in the figure below. This jump in international revenue is due to First Data's relatively high percentage of revenue from outside of North America.

**Figure 5: Charts showing Geographic Revenues of Fiserv (left), First Data (middle), and combined entity (right)**




*Source: Company Presentation*

Consolidation in the Banking Industry

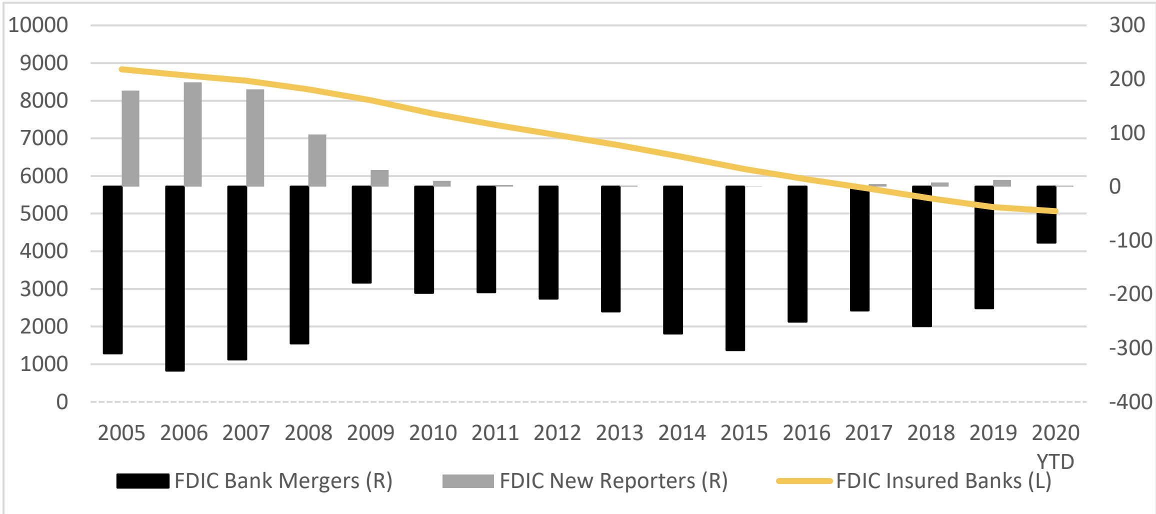
While Fiserv has many positive revenue drivers, consolidation of customers is a risk. The number of individual financial institutions has declined at a relatively steady rate over the last 25 years, primarily due to voluntary mergers and acquisitions, and a lack of new entrants in the banking industry. Banks have looked to mergers and acquisitions with other banks to quickly gain new customer accounts, to expand their geographic footprint, and to achieve the cost synergies that come with larger scale. After the Dodd-Frank act was passed in the wake of the 2008 Financial Crisis, there were new regulation and compliance costs that banks had to take on. For large banks, it was possible to assume these new costs without too much of an adverse impact. Smaller banks have struggled to deal with the additional regulatory costs, forcing them to combine or be acquired by other banks.

Fiserv has a large share of the small bank processing market

In many cases, larger banks have enough capital and scale to maintain in-house technology for their infrastructure and processing requirements. This is particularly an issue for Fiserv as it has a large market share of smaller banks and financial institutions. If a smaller bank that outsources some or all of its processing requirements to Fiserv is acquired by a larger institution, the client can be lost. Fiserv receives a termination fee based on the size of the client and how early in the contract term the contract is terminated, but future revenue is lost. Fiserv tries to mitigate consolidation risk by focusing on long-term client relationships and recurring, transaction-oriented products and services. Fiserv management believes that the integration of their products and services creates a strong value proposition for clients by providing new sources of revenue and opportunities for reduced costs. Also, growth in fintech is a positive offsetting driver to consolidation. Financial institutions need companies like Fiserv to maintain their competitive position as the way people bank and use their money become digitized.

Figure 6 below shows the consistent decline of the number of FDIC insured financial institutions in the United States over the last 15 years. The mergers are shown as a negative number to showcase the disparity between the number of new FDIC reporting banks and the number of banks that are removed from the FDIC total. Following 2008, the number of new FDIC banks has dramatically slowed down, whereas mergers have persistently reduced the total number of FDIC insured banks.

**Figure 6: Number of FDIC insured banks, number of FDIC new reporters, and number of bank mergers**



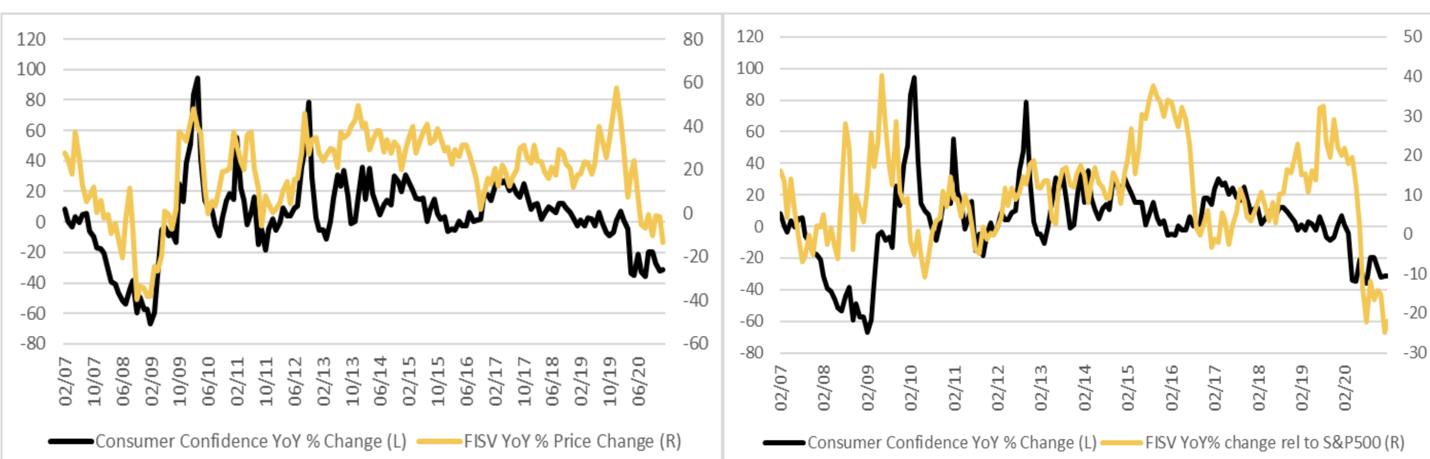

*Source: FDIC.gov statistics*

<u>Macroeconomic Trends</u>

Fiserv generates most of its revenue from recurring account and transaction-based fees. When consumer confidence is high, Fiserv generates more revenue due to a higher volume of economic transactions and activity. During economic downturns and when consumer confidence falls, Fiserv is more sensitive to the reduced economic activity. While the number of transactions may fall, Fiserv still retains clients as Fiserv provides a service that is necessary for its clients to operate their businesses. The fact that Fiserv provides a non-discretionary service provides some degree of safety, even when the economy is doing poorly.

Fiserv is highly correlated with consumer confidence. When times are good, Fiserv will usually outperform the market, but when consumer confidence falls, Fiserv will usually underperform the market, with the most recent drop in consumer confidence leading to -20% underperformance relative to the market.

**Figure 7 and 8: Consumer confidence compared to FISV % change YoY in price (left) and Consumer Confidence YoY % change compared to FISV relative to S&P 500 index**

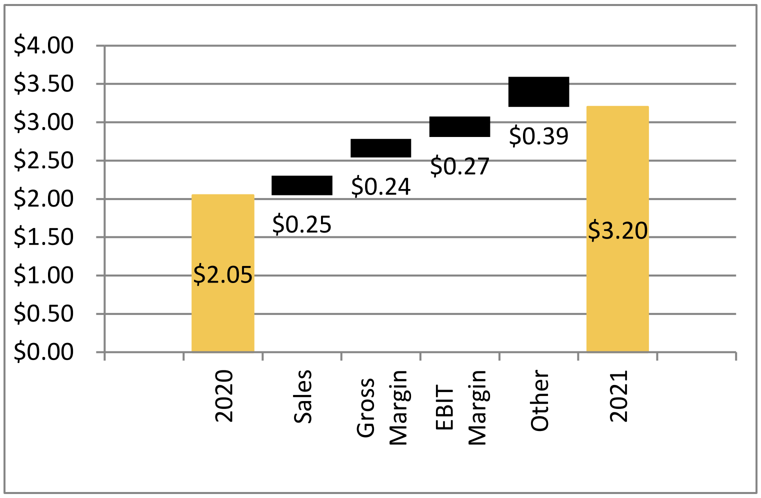



*Source: Factset, IMCP*

## Financial Analysis

I am forecasting EPS to grow from $2.05 in FY 2020 to $3.20 in FY 2021. Strong revenue growth should add $0.25 per share, as the company realizes its revenue synergies and leverages cross-selling opportunities to both banking and small business customers. Improved gross margin from realized cost synergies from the First Data acquisition should add $0.24 per share. Forecasted SG&A and R&D are expected to decrease as a percentage of sales, resulting in an improved EBIT margin and adding $0.27 to FY 2021 EPS. There will also be a positive impact of $0.39 per share from continued share buybacks.

**Figure 9: Quantification of 2021 EPS drivers**

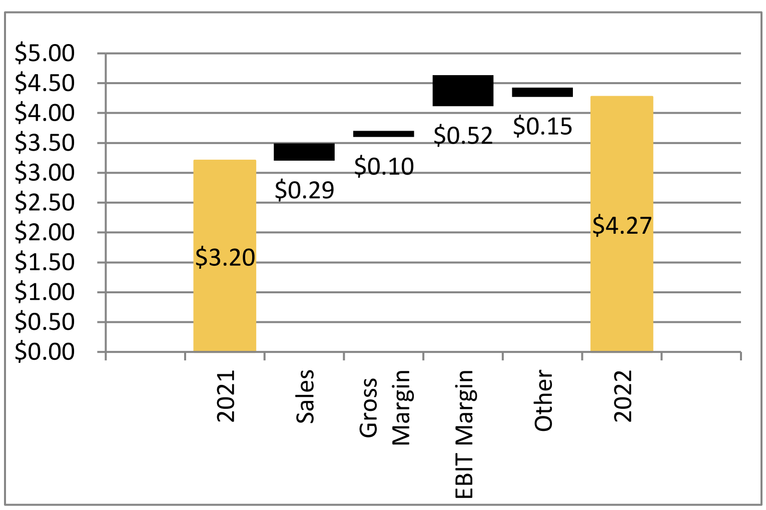



Increasing profitability will be the main driver of EPS growth

*Source: Company Reports, IMCP*

I expect 2022 EPS to increase $3.20 to $4.27. Fiserv should see steady sales growth year-over-year in 2022, resulting in $0.29 more per share. I anticipate a smaller expansion of gross margin in 2022 versus 2021; however, I still expect an improvement, resulting in an additional $0.10 per share. My model predicts a further increased EBIT margin in 2022, as the cost synergies from the Fiserv acquisition are fully realized and sales grow faster than R&D spending, resulting in a boost of $0.52 to EPS. Finally, I expect share buybacks to continue, adding $0.15 per share.

**Figure 10: Quantification of 2016 EPS drivers**




*Source: Company Reports, IMCP*

My forecasted sales growth is about in line with consensus estimates. I differ from consensus on EPS estimates, as I expect the company to be resilient even with the current macro environment and post strong EPS growth as management has stated they are well ahead of post-acquisition cost synergies in their most recent earnings call. Consensus has EPS dropping by 7% in 2020, followed by a strong rebound in 2021 and 2022; however, I am expecting steady EPS growth through 2022.

**Figure 11: EPS and Sales (mil) growth estimates by year**

| | FY2020 | FY 2021 | FY 2022 |
|---|---|---|---|
| Revenue - Estimate | 13997 | 15161 | 16318 |
| YoY Growth | 37% | 8% | 8% |
| Revenue - Consensus | 14037 | 15119 | 16224 |
| YoY Growth | 38% | 8% | 7% |
| EPS - Estimate | 2.05 | 3.2 | 4.27 |
| YoY Growth | 18% | 56% | 33% |
| EPS - Consensus | 1.59 | 2.72 | 4.25 |
| YoY Growth | -7% | 71% | 56% |

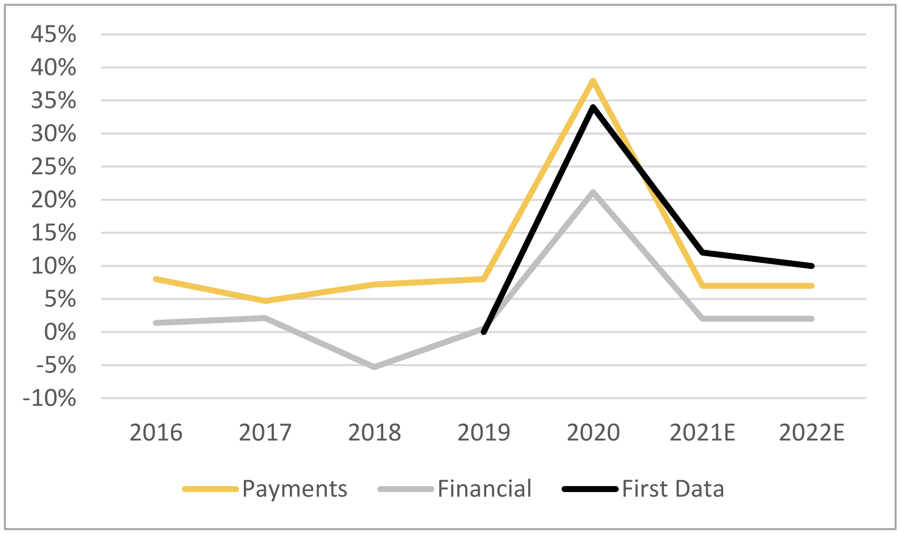
*Source: Factset, IMCP*

Revenues

Fiserv's revenues have been steadily increasing since 2009, and I expect that growth to accelerate in the years following the First Data acquisition. There is a long-term trend in the banking and financial industry towards online and electronic banking as consumers demand the convenience of having access to their accounts at all times. Fiserv is positioned to be one of the main beneficiaries of this secular trend, as their solutions allow banks to offer their customers online banking and the ability to transfer money electronically. Banks have increasingly been outsourcing this service, as it can be costly to maintain in-house processing for smaller banks that lack scale. This tailwind has allowed Fiserv to enjoy steady revenue growth over the last decade, and the covid-19 pandemic may end up accelerating the digitization of banking.

Legacy Fiserv focused on core processing platforms for banking clients (financial segment) and offering electronic payment capabilities (payments segment). The financial segment is not expected to see much growth, as it is a relatively mature market, and it can be difficult and costly for a bank to overhaul their account processing provider. However, most of the clients in the financial segment are under long term contracts with high-renewal rates, so there should not be any significant declines. The payments segment is one the largest areas of growth for Fiserv and should continue to be in the coming years. After the First Data acquisition, Fiserv ventured into merchant acquiring for small and medium sized businesses, and this segment should be the highest area of growth going forward. It should be noted that this segment is also the most sensitive to the macroeconomic environment, since revenues are directly related with the number of transactions. If another lockdown were to occur, there could be an adverse impact on this segment in the short term.

**Figure 12: Fiserv historical and projected revenue growth rates**




*Source: Company Reports*

The large increase in the growth rates across all segments in 2020 is because that will be the first full year following the First Data acquisition. The acquisition was completed in July of 2019, so only a portion of First Data revenue was attributed to Fiserv. Growth rates are expected to return to normal historical levels over the next two years.

Return on Equity

Fiserv had a high ROE in the years leading up to the First Data acquisition; however, a significant amount of new equity and debt was issued to finance the large purchase price of First Data. Equity increased from $2,293 million in 2018 to $34,595 million in 2019, and assets rose from $11,262 million to $77,539 million over the same period. A significant portion of the new assets are in the form of goodwill and intangible assets. This large increase in equity greatly reduced ROE from 47.3% in 2018 to only 4.8% in 2019, as asset turnover and asset to equity both fell. Profitability was also cut in half

Fiserv's ROE dropped following the First Data Acquisition

**Figure 13: ROE breakdown, 2017 - 2022**

| | FY 2017 | FY 2018 | FY 2019 | FY2020 | FY 2021E | FY 2022E |
|---|---|---|---|---|---|---|
| EBIT / sales | 26.9% | 30.1% | 15.8% | 17.3% | 20.0% | 23.0% |
| Sales / avg assets | 0.57 | 0.54 | 0.23 | 0.18 | 0.20 | 0.21 |
| EBT / EBIT | 88.5% | 89.0% | 70.6% | 78.4% | 83.2% | 86.4% |
| Net income /EBT | 91.9% | 76.1% | 78.6% | 65.8% | 76.3% | 76.3% |
| ROA | 12.4% | 11.0% | 2.0% | 1.6% | 2.5% | 3.1% |
| Avg assets / avg equity | 3.80 | 4.29 | 2.41 | 2.22 | 2.19 | 2.19 |
| ROE | 47.3% | 47.3% | 4.8% | 3.6% | 5.4% | 6.9% |

*Source: Company Reports*

I anticipate ROE increasing in the future as sales growth and improved margins come to fruition following the First Data acquisition. I also believe that share buybacks will continue in the future, bringing down the amount of equity on the balance sheet over time; although, the asset to equity ratio will remain somewhat stable

Free Cash Flow

Fiserv has a strong history of positive free cash flow, thanks in part to a consistently growing NOPAT. I expect NOPAT to continue to grow following the First Data acquisition. I also anticipate that net operating capital will remain steady when factoring in depreciation and amortization of intangible assets, which should allow for FCFF to grow 12% and 17% in 2021 and 2022 respectively. The acquisition occurred in 2019, which is why free cash flow was significantly negative that year. The company saw NFA grow almost 600% YoY, a large portion of which was goodwill and intangible assets. Fiserv paid a premium for First Data, but so far have executed well on the integration and I believe that the value created will ultimately make the high purchase price worth the investment.

Fiserv acquired First Data in 2019, resulting in a massive jump in NFA from goodwill

**Figure 14: Free cash flow calculations**

| Free Cash Flow | Dec-16 | Dec-17 | Dec-18 | Dec-19 | Dec-20 | Dec-21 | Dec-22 |
|---|---|---|---|---|---|---|---|
| FCFF per share | | $2.47 | $1.27 | ($99.62) | $4.09 | $4.65 | $5.65 |
| *Growth* | | | *-48.4%* | *-7925.3%* | *-104.1%* | *13.6%* | *21.5%* |
| FCFE per share | | $2.10 | $0.91 | ($100.38) | $3.44 | $4.00 | $4.98 |
| *Growth* | | | *-56.6%* | *-11101.6%* | *-103.4%* | *16.4%* | *24.4%* |
| NOPAT | $890 | $1,353 | $1,328 | $1,329 | $1,851 | $2,314 | $2,864 |
| *Growth* | | *52.0%* | *-1.9%* | *0.0%* | *39.3%* | *25.0%* | *23.8%* |
| NWC* | (297) | (285) | (197) | 713 | 800 | 152 | 326 |
| Net fixed assets | 8,015 | 8,314 | 9,038 | 60,493 | 59,759 | 59,925 | 59,339 |
| Total net operating capital* | $7,718 | $8,029 | $8,841 | $61,206 | $60,559 | $60,077 | $59,665 |
| *Growth* | | *4.0%* | *10.1%* | *592.3%* | *-1.1%* | *-0.8%* | *-0.7%* |
| - Change in NWC* | | 12 | 88 | 910 | 87 | (648) | 175 |
| - Change in NFA | | 299 | 724 | 51,455 | (734) | 166 | (586) |
| FCFF* | | $1,042 | $516 | ($51,036) | $2,498 | $2,796 | $3,276 |
| *Growth* | | | *-50.5%* | *-9986.3%* | *-104.9%* | *12.0%* | *17.1%* |
| - After-tax interest expense | 100 | 155 | 146 | 391 | 401 | 389 | 389 |
| FCFE** | | $887 | $370 | ($51,427) | $2,097 | $2,407 | $2,886 |
| *Growth* | | | *-58.3%* | *-13999.2%* | *-104.1%* | *14.8%* | *19.9%* |

*Source: Company Reports, IMCP*

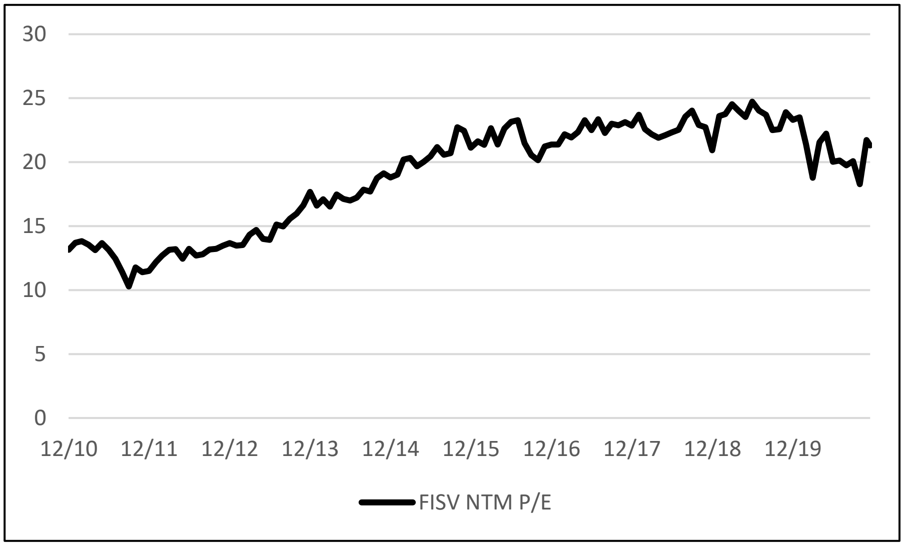
## Valuation

Fiserv was valued using multiples and a 3-stage discounted cash flow model. Based on earnings multiples, the stock is expensive relative to other firms and is worth $96. Relative valuation shows Fiserv to be slightly undervalued based on its fundamentals versus those of its peers. A price to sales valuation yielded a fair value price of $145 when comparing the relationship between P/S and NPM to its peers. A detailed DCF analysis valued Fiserv at $132; I give this value a bit more weight because it incorporates assumptions that take Fiserv's strong growth trends and profitability into consideration. As a result of these valuations, I believe the stock should be valued at $135.

Trading History

Fiserv is currently trading around 21.5 x NTM Earnings, compared to 87 x LTM GAAP Earnings. This disparity shows that the market expects Fiserv to see high earnings growth going forward. This also reflects the drop in earnings immediately following the First Data acquisition.

**Figure 15: FISV NTM P/E**




*Source: Factset*

Assuming the firm returns to a pre-Covid-19 NTM PE of 25 at the end of 2021, it should trade at $106.75 by the end of the year:

- Price = P/E x EPS = 25 x $4.27 = $106.75.

Discounting $106.75 back to today at a 10.9% cost of equity yields a price of $96.26. Given Fiserv's potential for earnings growth and continued profitability, this seems like a low valuation. However, the earnings used to calculate NTM P/E are adjusted EPS, whereas my estimates are in GAAP. This makes it seem as though Fiserv is currently overvalued. I forecasted 2022 EPS at $4.27, whereas consensus non-GAAP earnings are expected to be $6.34 per share. The P/E shown in figure 15 is based on non-GAAP EPS.

Relative Valuation

Fiserv is relatively cheap when compared to competitors, especially P/S and P/B

Fiserv is trading at a premium TTM P/E relative to competitors, with a TTM GAAP P/E of 87.9 versus an average P/E of 66.5 from its comp group. I believe that Fiserv deserves this premium valuation as it has higher sales and EPS growth projected for the future relative to its peers. 2021 earnings growth is 22.2% compared to an average of 16.7% for its competitors. Looking at P/B, Fiserv appears undervalued, with a 2.44 P/B ratio versus a median 3.97 for peers. Fiserv does have a lower ROE (9.3% vs. 10.9%) which can partly explain why the P/B is low. I used median instead of mean for this analysis because Western Union is a large outlier for the P/B ratio. Finally, Fiserv appears slightly undervalued when looking at the P/S ratio. Fiserv has a 5.51 P/S ratio, versus a comp average of 6.97. This is a little surprising to me considering Fiserv's strong historical and projected sales growth, and just below average net profit margin. Based on some of the relative metrics, Fiserv appears undervalued relative to its peers.

**Figure 16: FISV comparable companies**

| Ticker | Name | Current Price | Market Value | Price Change 1 day | 1 Mo | 3 Mo | 6 Mo | 52 Wk | YTD | Earnings Growth LTG | NTM | 2019 | 2020 | 2021 | 2022 | Pst 5yr | Beta | LT Debt/ Equity | S&P Rating | LTM Dividend Yield | Payout |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FISV | FISERV INC | $115.53 | $77,456 | 0.5 | 19.6 | 16.7 | 9.7 | (0.7) | (0.1) | 15.6 | 293.8% | 29.0% | 10.3% | 22.2% | 16.3% | 3.9% | 0.75 | 65.9% | B+ | 0.00% | 0.0% |
| FIS | FIDELITY NATIONAL INFO SVCS | $148.28 | $92,009 | 0.2 | 7.6 | (1.9) | 7.4 | 7.1 | 6.6 | 13.2 | 152.6% | -19.0% | -2.5% | 21.6% | 15.0% | -16.4% | 0.69 | 31.0% | A- | 1.12% | |
| GPN | GLOBAL PAYMENTS INC | $197.03 | $58,978 | 0.0 | 19.6 | 12.8 | 10.8 | 8.8 | 7.9 | 17.7 | 358.5% | 19.8% | 2.9% | 25.3% | 17.0% | | 1.03 | 30.4% | A- | 0.49% | 46.5% |
| WU | WESTERN UNION CO | $22.52 | $9,258 | (0.3) | 8.0 | (5.6) | 11.0 | (17.4) | (15.9) | 4.4 | 13.5% | -9.9% | 6.4% | 9.8% | 10.9% | | 0.98 | ####### | B | 4.50% | 51.8% |
| JKHY | HENRY (JACK) & ASSOCIATES | $157.80 | $12,043 | (0.0) | 4.4 | (4.9) | (10.7) | 3.4 | 8.3 | 9.1 | 1.8% | 3.1% | 4.1% | 7.8% | 13.3% | 8.9% | 0.49 | 3.7% | A+ | 1.14% | 43.5% |
| BKI | BLACK KNIGHT INC | $90.53 | $14,216 | (0.6) | 0.6 | 8.4 | 23.6 | 43.2 | 40.4 | 9.2 | 60.9% | 6.4% | 3.5% | 13.6% | 11.1% | | 0.85 | 86.2% | | 0.000% | 0.0% |
| **Average** | | | $43,993 | (0.0) | 9.9 | 4.3 | 8.6 | 7.4 | 7.9 | 11.6 | 146.9% | 4.9% | 4.1% | 16.7% | 13.9% | -1.2% | 0.80 | 815.1% | | 1.21% | 28.4% |
| **Median** | | | $36,597 | (0.0) | 7.8 | 3.2 | 10.3 | 5.3 | 7.3 | 11.2 | 106.8% | 4.7% | 3.8% | 17.6% | 14.2% | 3.9% | 0.80 | 48.5% | | 0.81% | 43.5% |
| **SPX** | S&P 500 INDEX | $3,638 | | 0.2 | 7.3 | 4.4 | 19.8 | 15.4 | 12.6 | | | 20.9% | 1.0% | -20.8% | 27.5% | | | | | | |

| Ticker | Website | 2020 ROE | P/B | P/E 2018 | 2019 | 2020 | TTM | NTM | 2021 | 2022 | 2020 NPM | 2020 P/S | NM | OM | ROIC | EV/ EBIT | P/CF Current | Sales Growth NTM | STM | Pst 5yr | Book Equity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **FISV** | http://www.fiserv.com | 9.3% | 2.44 | 23.7 | 28.9 | 26.2 | 87.9 | 22.3 | 21.4 | 18.4 | 21.0% | 5.51 | 8.8% | 17.8% | 2.8% | 46.3 | 16.4 | -1.5% | 6.5% | 15.0% | $47.28 |
| **FIS** | http://www.fisglobal.com | 6.9% | 1.88 | 14.8 | 24.8 | 27.1 | 75.8 | 23.2 | 22.3 | 19.4 | 26.8% | 7.27 | 2.9% | 17.0% | 0.7% | 46.8 | 20.7 | 6.9% | 8.2% | 10.0% | $79.08 |
| **GPN** | http://www.globalpaymentsinc.com | 6.9% | 2.13 | 19.9 | 29.4 | 30.8 | 117.5 | 25.6 | 24.6 | 21.0 | 28.2% | 8.67 | 8.8% | 21.3% | 1.9% | 42.9 | 25.7 | -0.6% | 9.4% | | $92.71 |
| **WU** | http://www.westernunion.com | 1127.0% | 137.94 | 8.9 | 15.5 | 12.2 | 13.3 | 11.7 | 11.1 | 10.1 | 15.7% | 1.92 | 20.1% | 19.9% | 36.8% | 12.9 | 11.3 | 2.4% | 3.7% | | $0.16 |
| **JKHY** | http://www.jackhenry.com | 19.0% | 7.80 | 35.3 | 39.5 | 41.1 | 40.6 | 39.9 | 38.1 | 33.6 | 16.9% | 6.95 | 17.5% | 22.7% | 19.5% | 36.4 | | 5.2% | | | $20.23 |
| **BKI** | http://www.blackknightinc.com | 12.5% | 5.51 | 24.1 | 32.4 | 43.9 | 63.9 | 39.7 | 38.7 | 34.8 | 26.2% | 11.53 | 9.2% | 25.1% | 3.4% | 37.8 | 37.8 | 15.0% | 8.0% | | $16.44 |
| **Average** | | 196.9% | 26.28 | 21.1 | 28.4 | 30.2 | 66.5 | 27.1 | 26.0 | 22.9 | 22.5% | 6.97 | 11.2% | 20.6% | 10.8% | 37.2 | 22.4 | 4.6% | 7.2% | 12.5% | |
| **Median** | | 10.9% | 3.97 | 21.8 | 29.1 | 28.9 | 69.8 | 24.4 | 23.4 | 20.2 | 23.6% | 7.11 | 9.0% | 20.6% | 3.1% | 40.3 | 20.7 | 3.8% | 8.0% | 12.5% | |
| **spx** | S&P 500 INDEX | | | 18.8 | 20.0 | 22.3 | | | 28.2 | 22.1 | | | | | | | | | | | |

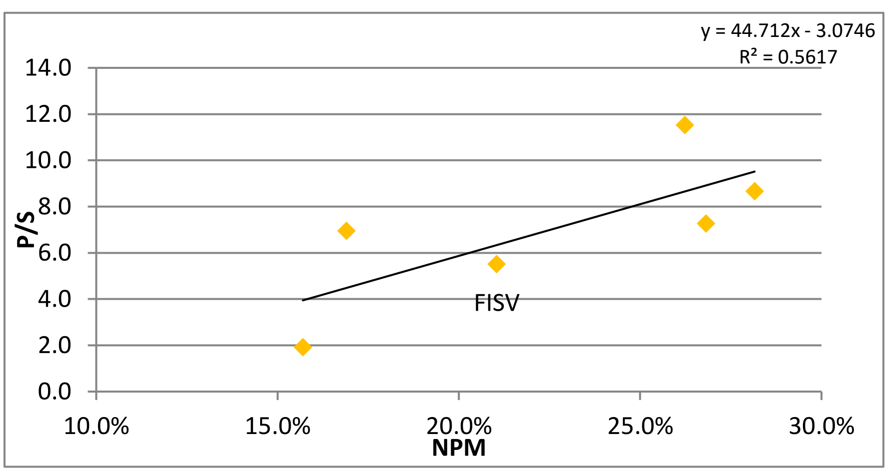
*Source: FactSet, IMCP*

A more thorough analysis of P/S and NPM is shown in figure 17. The calculated R-squared of the regression indicates that over 56% of a sampled firm's P/S is explained by its NPM. According to this measure Fiserv is undervalued because it falls below the regression line. If Fiserv was fairly valued relative to its peers, it would trade at 6.32 P/S instead of its current 5.51 ratio. Assuming the regression line is fair value, the stock should trade at $145.

- Estimated P/S = 2020 NPM (21%) x 44.712 – 3.0746 = 6.32 P/S
- Target Price = Estimated P/S (6.32) x Estimated 2020 sales per share (22.95) = $145.04

Fiserv is below the regression line, implying it is undervalued

**Figure 17: P/S vs NTM ROE**




*Source: Factset, IMCP*

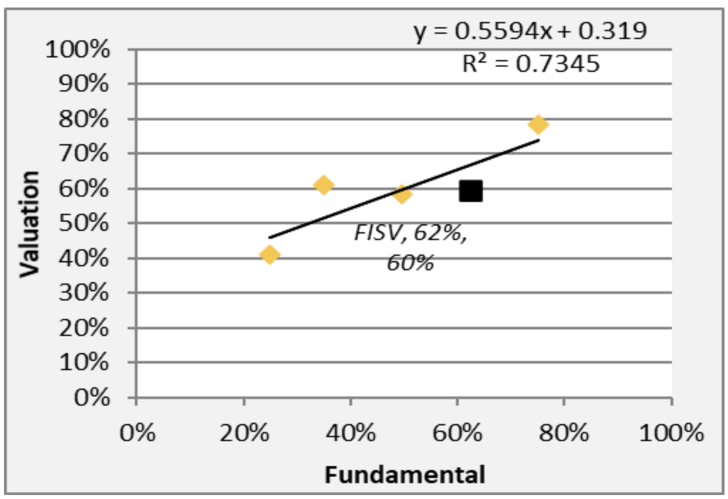
For a final comparison, I created a composite ranking of several valuation and fundamental metrics. Since the variables have different scales, each was converted to a percentile before calculating the composite score. For fundamentals, I weighted 30% to Long term EPS growth, 30% to NTM EPS growth, 25% to ROE, and 15% to NPM. For valuation, I weighted 50% to TTM P/E, 15% to P/B, 25% to P/S, and 10% to EV/EBIT. The regression line had an R-squared of 0.73. Figure 19 shows that Fiserv is below the regression line, meaning that based on the selected fundamentals, Fiserv is undervalued relative to its peers.

**Figure 18: Composite valuation, % of range**

| | | | | | | | Fundamental | | | | Valuation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Weight | | | 30.0% | 30.0% | 25.0% | 15.0% | 50.0% | 15.0% | 25.0% | 10.0% |
| | | Rank | | Target | Weighted | | EPS Growth | | 2020 | 2020 | P/E | | | EV/ |
| Ticker | Name | Diff | Diff | Value | Fund | Value | LTG | NTM | ROE | NPM | TTM | P/B | P/S | EBIT |
| FISV | FISERV INC | 5 | 4% | 64% | 62% | 60% | 88% | 82% | 1% | 75% | 75% | 2% | 48% | 99% |
| FIS | FIDELITY NATIONAL INFO SVCS | 3 | -3% | 55% | 50% | 58% | 75% | 43% | 1% | 95% | 65% | 1% | 63% | 100% |
| GPN | GLOBAL PAYMENTS INC | 2 | -6% | 72% | 75% | 78% | 100% | 100% | 1% | 100% | 100% | 2% | 75% | 92% |
| JKHY | HENRY (JACK) & ASSOCIATES | 4 | -2% | 39% | 25% | 41% | 51% | 1% | 2% | 60% | 35% | 6% | 60% | 78% |
| BKI | BLACK KNIGHT INC | 1 | -15% | 45% | 35% | 61% | 52% | 17% | 1% | 93% | 54% | 4% | 100% | 81% |

*Source: IMCP*

**Figure 19: Composite relative valuation**




*Source: Factset, IMCP*

<u>Discounted Cash Flow Analysis</u>

A three-stage discounted cash flow model was also used to value Fiserv.

For the purpose of this analysis, the company's cost of equity was calculated to be 10.9% using the Capital Asset Pricing Model. The underlying assumptions used in calculating this rate are as follows:

- The risk-free rate, as represented by the ten-year Treasury bond yield, is 1%.
- A ten-year beta of 1.1 was utilized since the company has slightly higher risk than the market.
- A long-term market rate of return of 10% was assumed, since historically, the market has generated an annual return of about 10%.

Given the above assumptions, the cost of equity is 10.9% (1 + 1.1 (10.0 – 1)).

*Stage One* - The model's first stage simply discounts fiscal years 2021 and 2022 free cash flow to equity (FCFE). These per share cash flows are forecasted to be $4.00 and $4.98, respectively. Discounting these cash flows, using the cost of equity calculated above, results in a value of $7.66 per share. Thus, stage one of this discounted cash flow analysis contributes $7.66 to value.

I expect NFA and NWC to gradually increase over the next 7 years, barring a major acquisition

*Stage Two* - Stage two of the model focuses on fiscal years 2023 to 2027. During this period, FCFE is forecasted using revenue growth, NOPAT margin and capital growth assumptions. The resulting cash flows are then discounted using the company's 10.9% cost of equity. I assume 7.0% sales growth in 2023, tapering down to 6.5% in 2027 as the company matures. The ratio of NWC to sales will increase from 16 in 2023 to 17.4 in 2027, and NFA turnover will rise from 0.29 in 2023 to 0.35 in 2027. Also, the NOPAT margin is expected to reach pre-acquisition levels of 25.0% in 2027 from 15.3% in 2021.

**Figure 20: FCFE and discounted FCFE, 2021 – 2027**

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
|---|---|---|---|---|---|---|---|
| FCFE | $4.00 | $4.98 | $2.34 | $5.83 | $5.02 | $5.82 | $4.98 |
| Discounted FCFE | $3.61 | $4.05 | $1.71 | $3.85 | $2.99 | $3.13 | $2.41 |

*Source: IMCP*

Added together, these discounted cash flows total $14.10.

*Stage Three* – Net income for the years 2023 – 2027 is calculated based upon the same margin and growth assumptions used to determine FCFE in stage two. EPS is expected to grow from $3.20 in 2021 to $8.81 in 2027.

**Figure 21: EPS estimates for 2021 – 2027**

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
|---|---|---|---|---|---|---|---|
| EPS | $3.20 | $4.27 | $5.16 | $6.00 | $6.73 | $7.83 | $8.81 |

*Source: IMCP*

Stage three of the model requires an assumption regarding the company's terminal price-to-earnings ratio. For the purpose of this analysis, I assumed a terminal P/E ratio of 26. This P/E is justified due to the strong earnings growth Fiserv is expected to experience in the coming years. While this may seem like a high multiple at the end of 2027, I believe that investors will be willing to pay a premium for Fiserv's earnings as the world trends towards becoming cashless and digital payments become the norm. This tailwind will allow Fiserv to sustain growth in revenue and earnings to justify a premium well above the overall market P/E. Also, Fiserv's profitability and ROE will be much higher than current levels, and I expect the market to reward the company as it returns to pre-acquisition profitability.

Given the assumed terminal earnings per share of $8.81 and a price to earnings ratio of 26, a terminal value of $228.95 per share is calculated. Using the 10.9% cost of equity, this number is discounted back to a present value of $110.97

*Total Present Value* – given the above assumptions and utilizing a three stage discounted cash flow model, an intrinsic value of $132.73 is calculated (7.66 + 14.10 + 110.97). Given FISV's current price of $113.63, this model indicates that the stock is undervalued.

<u>Scenario Analysis</u>

Fiserv is difficult to value with certainty as the most important driver, the First Data acquisition, is still new, and it is unknown at this point how well its operations will be integrated into Fiserv. In order to account for the unknown future, I adjusted my DCF model assumptions to forecast a bull and bear case for the company.

In the bull case, I assumed that sales would grow faster than the base case, and the company is more profitable on those sales. I also assumed that investors will be willing to pay a higher premium on earnings due to the higher growth rates, so I increased the terminal P/E from 26 to 28

| Bull Case | | |
|---|---|---|
| First stage | $7.66 | Present value of first 2 year cash flow |
| Second stage | $13.94 | Present value of year 3-7 cash flow |
| Third stage | $126.20 | Present value of terminal value P/E |
| Value (P/E) | **$147.80** | |

In the bear case, I assume Fiserv will run into some issues integrating First Data, and sales will not grow as fast as the base case. In addition to slower sales growth, the company will not be as profitable on sales since the acquisition cost synergy targets will be missed. I assume investors will be wary of the integration troubles and will not pay as high of a terminal P/E that I forecasted in the base case. The terminal P/E was lowered from 26 to 23 in the bear case.

| Bear Case | | |
|---|---|---|
| First stage | $7.66 | Present value of first 2 year cash flow |
| Second stage | $15.22 | Present value of year 3-7 cash flow |
| Third stage | $84.56 | Present value of terminal value P/E |
| Value (P/E) | **$107.44** | |

## Business Risks

Although I am very optimistic about the future prospects of Fiserv, there are some risks that could adversely impact the operations and profitability of the company.

Difficulty integrating First Data:

Fiserv paid a premium to acquire First Data, and the purchase significantly increased Fiserv's debt and adversely impacted Fiserv's short-term profitability. If management has difficulties integrating First Data, or the company falls short of achieving the expected revenue and cost synergies, investors could lose confidence in the growth prospects of the company.

Covid-19 related shutdowns:

A significant portion of Fiserv's revenue comes from transaction-based fees. In the most recent earnings call, Fiserv management pointed out the economic activity has rebounded nicely from the lows in April; however, if the pandemic worsens and a national lockdown order goes into effect, Fiserv's revenue could be negatively impacted. This could cause sales growth estimates to be missed.

Failure to innovate:

The fintech industry is constantly evolving and very competitive. If Fiserv is unable to innovate and keep up with competitors, it could lose market share to competitors with better product offerings.

Increased government regulation:

The financial industry is heavily regulated. If government regulations increased, this could put pressure on Fiserv's margins and cause earnings to grow slower than expected.

# Appendix 1: Porter's 5 Forces

Threat of New Entrants – Relatively Low

It takes a lot of capital and time to develop the financial infrastructure needed for the financial technology industry. However, it could be easier for new competitors to arise in the merchant acquiring business that Fiserv obtained in the First Data acquisition.

Threat of Substitutes – Moderate

Fiserv has several competitors for each of its business segments. Its core banking and processing business enjoys great customer retention due to high switching costs for banks to switch account processing infrastructure. The rise of Square as a merchant acquirer dampens the ability for Fiserv to grow its Clover platform that it acquired from First Data.

Supplier Power - Low

Fiserv's suppliers do not have an advantage they can exploit to increase the costs to Fiserv.

Buyer Power – Moderate

Fiserv provides services that are necessary for its customers to operate their businesses. There are also high switching costs. However, there are alternatives that customers could choose if Fiserv raised transactions fees too high, prohibiting large price increases.

Intensity of Competition – Very High

The financial technology industry is very competitive, with companies introducing new product offerings constantly. If a company fails to innovate, it could get left behind and lose market share.

# Appendix 2: SWOT Analysis

| Strengths | Weaknesses |
|---|---|
| Nondiscretionary product<br>Customer retention<br>High gross margins | Recent increase in debt<br>No dividend |
| **Opportunities** | **Threats** |
| International expansion<br>Synergy with First Data | Covid-19 shutdowns<br>Increased regulations<br>Economic downturn |

# Appendix 3: Income Statement

| Income Statement | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Items** | **Dec-16** | **Dec-17** | **Dec-18** | **Dec-19** | **Dec-20** | **Dec-21** | **Dec-22** |
| Sales | $5,505 | $5,696 | $5,823 | $10,187 | $13,997 | $15,161 | $16,318 |
| Direct costs | 2,949 | 3,024 | 3,176 | 5,262 | 6,897 | 7,277 | 7,751 |
| Gross Margin | 2,556 | 2,672 | 2,647 | 4,925 | 7,100 | 7,884 | 8,567 |
| SG&A, R&D, D&A, and other | 1,111 | 1,140 | 894 | 3,316 | 4,675 | 4,852 | 4,814 |
| EBIT | 1,445 | 1,532 | 1,753 | 1,609 | 2,425 | 3,032 | 3,753 |
| Interest | 163 | 176 | 193 | 473 | 525 | 510 | 510 |
| EBT | 1,282 | 1,356 | 1,560 | 1,136 | 1,900 | 2,522 | 3,243 |
| Taxes | 492 | 158 | 378 | 198 | 450 | 597 | 768 |
| Income | 790 | 1,198 | 1,182 | 938 | 1,450 | 1,925 | 2,475 |
| Other | (140) | (48) | (5) | 45 | 200 | - | - |
| Net income | 930 | 1,246 | 1,187 | 893 | 1,250 | 1,925 | 2,475 |
| Basic Shares | 440.6 | 422.3 | 405.5 | 512.3 | 610.0 | 601.3 | 579.6 |
| Fully Diluted Shares | 447.8 | 431.3 | 413.7 | 522.6 | 620.0 | 611.3 | 589.6 |
| EPS | $2.11 | $2.95 | $2.93 | $1.74 | $2.05 | $3.20 | $4.27 |
| EPS Fully Diluted | $2.08 | $2.89 | $2.87 | $1.71 | $2.02 | $3.15 | $4.20 |
| DPS | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |

# Appendix 4: Balance Sheet

| Balance Sheet | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Items** | **Dec-16** | **Dec-17** | **Dec-18** | **Dec-19** | **Dec-20** | **Dec-21** | **Dec-22** |
| Cash | 300 | 325 | 415 | 893 | 950 | 2,357 | 2,743 |
| Operating assets ex cash | 1,428 | 1,650 | 1,809 | 16,153 | 16,000 | 16,071 | 16,808 |
| Operating assets | 1,728 | 1,975 | 2,224 | 17,046 | 16,950 | 18,428 | 19,551 |
| Operating liabilities | 1,725 | 1,935 | 2,006 | 15,440 | 15,200 | 15,919 | 16,481 |
| NOWC | 3 | 40 | 218 | 1,606 | 1,750 | 2,509 | 3,070 |
| NOWC ex cash (NWC) | (297) | (285) | (197) | 713 | 800 | 152 | 326 |
| NFA | 8,015 | 8,314 | 9,038 | 60,493 | 59,759 | 59,925 | 59,339 |
| *Invested capital* | *$8,018* | *$8,354* | *$9,256* | *$62,099* | *$61,509* | *$62,434* | *$62,409* |
| Marketable Securities | | | | | | - | - |
| *Total assets* | *$9,743* | *$10,289* | *$11,262* | *$77,539* | *$76,709* | *$78,353* | *$78,890* |
| S-T and L-T debt | $4,562 | $4,900 | $5,959 | $21,899 | $20,700 | $20,700 | $20,700 |
| Other liabilities | 915 | 723 | 1,004 | 5,605 | 5,809 | 5,809 | 5,809 |
| Debt/equity like securities | - | - | - | - | - | | |
| Equity | 2,541 | 2,731 | 2,293 | 34,595 | 35,000 | 35,925 | 35,900 |
| *Total supplied capital* | *$8,018* | *$8,354* | *$9,256* | *$62,099* | *$61,509* | *$62,434* | *$62,409* |
| *Total liabilities and equity* | *$9,743* | *$10,289* | *$11,262* | *$77,539* | *$76,709* | *$78,353* | *$78,890* |

## Appendix 5: Sales Forecast

| Sales Forecast | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Items** | **Dec-16** | **Dec-17** | **Dec-18** | **Dec-19** | **Dec-20** | **Dec-21** | **Dec-22** |
| Sales | $5,505 | $5,696 | 5,823 | $10,187 | $13,997 | $15,161 | $16,318 |
| *Growth* | | *3.5%* | *2.2%* | *74.9%* | *37.4%* | *8.3%* | *7.6%* |
| | | | | | | | |
| Payments | 3,090 | 3,234 | 3,467 | 3,744 | 5,597 | 6,045 | 6,528 |
| *Growth* | | *4.7%* | *7.2%* | *8.0%* | *49.5%* | *8.0%* | *8.0%* |
| *% of sales* | *56.1%* | *56.8%* | *59.5%* | *36.8%* | *40.0%* | *39.9%* | *40.0%* |
| Financial | 2,477 | 2,530 | 2,395 | 2,407 | 2,917 | 2,975 | 3,035 |
| *Growth* | | *2.1%* | *-5.3%* | *0.5%* | *21.2%* | *2.0%* | *2.0%* |
| *% of sales* | *45.0%* | *44.4%* | *41.1%* | *23.6%* | *20.8%* | *2.0%* | *18.6%* |
| First Data | - | - | - | 4,078 | 5,483 | 6,141 | 6,755 |
| *Growth* | | | | | *34.5%* | *12.0%* | *10.0%* |
| *% of sales* | *0.0%* | *0.0%* | *0.0%* | *40.0%* | *39.2%* | *40.5%* | *6.0%* |
| Corporate and Other | (62) | (68) | (39) | (42) | - | - | - |
| *Growth* | | *9.7%* | *-42.6%* | *7.7%* | *-100.0%* | *0.0%* | *0.0%* |
| *% of sales* | *-1.1%* | *-1.2%* | *-0.7%* | *-0.4%* | *0.0%* | *0.0%* | *0.0%* |
| | | | | | | | |
| Total | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| United States | 5,295 | 5,468 | 5,531 | 8,964 | 12,248 | 13,190 | 14,115 |
| *Growth* | | *3.3%* | *1.2%* | *62.1%* | *36.6%* | *7.7%* | *7.0%* |
| *% of sales* | *96.2%* | *96.0%* | *95.0%* | *88.0%* | *87.5%* | *87.0%* | *86.5%* |
| International | 209 | 227 | 291 | 1,222 | 1,749 | 1,971 | 2,203 |
| *Growth* | | *8.6%* | *28.2%* | *319.9%* | *43.1%* | *12.7%* | *11.8%* |
| *% of sales* | *3.8%* | *4.0%* | *5.0%* | *12.0%* | *12.5%* | *13.0%* | *13.5%* |

# Appendix 6: Ratios

| Ratios | Dec-16 | Dec-17 | Dec-18 | Dec-19 | Dec-20 | Dec-21 | Dec-22 |
|---|---|---|---|---|---|---|---|
| Profitability | | | | | | | |
| Gross margin | 46.4% | 46.9% | 45.5% | 48.3% | 50.7% | 52.0% | 52.5% |
| Operating (EBIT) margin | 26.2% | 26.9% | 30.1% | 15.8% | 17.3% | 20.0% | 23.0% |
| Net profit margin | 16.9% | 21.9% | 20.4% | 8.8% | 8.9% | 12.7% | 15.2% |
| Activity | | | | | | | |
| NFA (gross) turnover | | 0.70 | 0.67 | 0.29 | 0.23 | 0.25 | 0.27 |
| Total asset turnover | | 0.57 | 0.54 | 0.23 | 0.18 | 0.20 | 0.21 |
| Liquidity | | | | | | | |
| Op asset / op liab | 1.00 | 1.02 | 1.11 | 1.10 | 1.12 | 1.16 | 1.19 |
| NOWC Percent of sales | | 0.4% | 2.2% | 9.0% | 12.0% | 14.0% | 17.1% |
| Solvency | | | | | | | |
| Debt to assets | 46.8% | 47.6% | 52.9% | 28.2% | 27.0% | 26.4% | 26.2% |
| Debt to equity | 179.5% | 179.4% | 259.9% | 63.3% | 59.1% | 57.6% | 57.7% |
| Other liab to assets | 9.4% | 7.0% | 8.9% | 7.2% | 7.6% | 7.4% | 7.4% |
| Total debt to assets | 56.2% | 54.7% | 61.8% | 35.5% | 34.6% | 33.8% | 33.6% |
| Total liabilities to assets | 73.9% | 73.5% | 79.6% | 55.4% | 54.4% | 54.2% | 54.5% |
| Debt to EBIT | 3.16 | 3.20 | 3.40 | 13.61 | 8.54 | 6.83 | 5.52 |
| EBIT/interest | 8.87 | 8.70 | 9.08 | 3.40 | 4.62 | 5.94 | 7.36 |
| Debt to total net op capital | 56.9% | 58.7% | 64.4% | 35.3% | 33.7% | 33.2% | 33.2% |
| ROIC | | | | | | | |
| NOPAT to sales | 16.2% | 23.8% | 22.8% | 13.0% | 13.2% | 15.3% | 17.6% |
| Sales to NWC | | (19.57) | (24.16) | 39.48 | 18.50 | 31.86 | 68.28 |
| Sales to NFA | | 0.70 | 0.67 | 0.29 | 0.23 | 0.25 | 0.27 |
| Sales to IC ex cash | | 0.72 | 0.69 | 0.29 | 0.23 | 0.25 | 0.27 |
| Total ROIC ex cash | | 17.2% | 15.7% | 3.8% | 3.0% | 3.8% | 4.8% |
| | | | | | | | |
| NOPAT to sales | 16.2% | 23.8% | 22.8% | 13.0% | 13.2% | 15.3% | 17.6% |
| Sales to NOWC | | 264.93 | 45.14 | 11.17 | 8.34 | 7.12 | 5.85 |
| Sales to NFA | | 0.70 | 0.67 | 0.29 | 0.23 | 0.25 | 0.27 |
| Sales to IC | | 0.70 | 0.66 | 0.29 | 0.23 | 0.24 | 0.26 |
| Total ROIC | | 16.5% | 15.1% | 3.7% | 3.0% | 3.7% | 4.6% |
| | | | | | | | |
| NOPAT to sales | 16.2% | 23.8% | 22.8% | 13.0% | 13.2% | 15.3% | 17.6% |
| Sales to EOY NWC | (18.54) | (19.99) | (29.56) | 14.29 | 17.50 | 100.00 | 50.00 |
| Sales to EOY NFA | 0.69 | 0.69 | 0.64 | 0.17 | 0.23 | 0.25 | 0.28 |
| Sales to EOY IC ex cash | 0.71 | 0.71 | 0.66 | 0.17 | 0.23 | 0.25 | 0.27 |
| Total ROIC using EOY IC ex casl | 11.5% | 16.9% | 15.0% | 2.2% | 3.1% | 3.9% | 4.8% |
| | | | | | | | |
| NOPAT to sales | 16.2% | 23.8% | 22.8% | 13.0% | 13.2% | 15.3% | 17.6% |
| Sales to EOY NOWC | 1,835 | 142.40 | 26.71 | 6.34 | 8.00 | 6.04 | 5.32 |
| Sales to EOY NFA | 0.69 | 0.69 | 0.64 | 0.17 | 0.23 | 0.25 | 0.28 |
| Sales to EOY IC | 0.69 | 0.68 | 0.63 | 0.16 | 0.23 | 0.24 | 0.26 |
| Total ROIC using EOY IC | 11.1% | 16.2% | 14.3% | 2.1% | 3.0% | 3.7% | 4.6% |
| ROE | | | | | | | |
| **5-stage** | | | | | | | |
| EBIT / sales | | 26.9% | 30.1% | 15.8% | 17.3% | 20.0% | 23.0% |
| Sales / avg assets | | 0.57 | 0.54 | 0.23 | 0.18 | 0.20 | 0.21 |
| EBT / EBIT | | 88.5% | 89.0% | 70.6% | 78.4% | 83.2% | 86.4% |
| Net income /EBT | | 91.9% | 76.1% | 78.6% | 65.8% | 76.3% | 76.3% |
| ROA | | 12.4% | 11.0% | 2.0% | 1.6% | 2.5% | 3.1% |
| Avg assets / avg equity | | 3.80 | 4.29 | 2.41 | 2.22 | 2.19 | 2.19 |
| ROE | | 47.3% | 47.3% | 4.8% | 3.6% | 5.4% | 6.9% |
| **3-stage** | | | | | | | |
| Net income / sales | | 21.9% | 20.4% | 8.8% | 8.9% | 12.7% | 15.2% |
| Sales / avg assets | | 0.57 | 0.54 | 0.23 | 0.18 | 0.20 | 0.21 |
| ROA | | 12.4% | 11.0% | 2.0% | 1.6% | 2.5% | 3.1% |
| Avg assets / avg equity | | 3.80 | 4.29 | 2.41 | 2.22 | 2.19 | 2.19 |
| ROE | | 47.3% | 47.3% | 4.8% | 3.6% | 5.4% | 6.9% |
| Payout Ratio | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Retention Ratio | | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| Sustainable Growth Rate | | 47.3% | 47.3% | 4.8% | 3.6% | 5.4% | 6.9% |

## Appendix 7: Cash Flow Statement

| Cash Flow Statement | | | | | | |
|---|---|---|---|---|---|---|
| Note: This is not the actual cash flow statement. It is created using the indirect method and various simplifying assumptions. | | | | | | |
| **Items** | **Dec-17** | **Dec-18** | **Dec-19** | **Dec-20** | **Dec-21** | **Dec-22** |
| **Cash from Operatings (understated - depr'n added to net assets)** | | | | | | |
| Net income | $1,246 | $1,187 | $893 | $1,250 | $1,925 | $2,475 |
| Change in Net Working Capital ex cash | (12) | (88) | (910) | (87) | 648 | (175) |
| Cash from operations | $1,234 | $1,099 | ($17) | $1,163 | $2,573 | $2,300 |
| **Cash from Investing (understated - depr'n added to net assets)** | | | | | | |
| Change in NFA | ($299) | ($724) | ($51,455) | $734 | ($166) | $586 |
| Change in Marketable Securities | $0 | $0 | $0 | $0 | $0 | $0 |
| Cash from investing | ($299) | ($724) | ($51,455) | $734 | ($166) | $586 |
| **Cash from Financing** | | | | | | |
| Change in Short-Term and Long-Term Debt | $338 | $1,059 | $15,940 | ($1,199) | $0 | $0 |
| Change in Other liabilities | (192) | 281 | 4601 | 204 | 0 | 0 |
| Change in Debt/Equity-Like Securities | 0 | 0 | 0 | 0 | 0 | 0 |
| Dividends | 0 | 0 | 0 | 0 | 0 | 0 |
| Change in Equity ex NI and Dividends | (1056) | (1625) | 31409 | (845) | (1000) | (2500) |
| Cash from financing | ($910) | ($285) | $51,950 | ($1,840) | ($1,000) | ($2,500) |
| **Change in Cash** | 25 | 90 | 478 | 57 | 1407 | 386 |
| **Beginning Cash** | 300 | 325 | 415 | 893 | 950 | 2357 |
| **Ending Cash** | $325 | $415 | $893 | $950 | $2,357 | $2,743 |

## Appendix 8: 3-stage DCF Model

| | First Stage | | | Second Stage | | | | |
|---|---|---|---|---|---|---|---|---|
| Year ending January | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
| *Sales Growth* | *37.4%* | *8.3%* | *7.6%* | *7.0%* | *7.0%* | *6.5%* | *6.5%* | *6.5%* |
| *NOPAT / S* | *13.2%* | *15.3%* | *17.6%* | *19.5%* | *21.0%* | *22.0%* | *23.8%* | *25.0%* |
| *S / NWC* | *17.50* | *100.00* | *50.00* | *16.00* | *16.50* | *17.00* | *17.20* | *17.40* |
| *S / NFA (EOY)* | *0.23* | *0.25* | *0.28* | *0.29* | *0.31* | *0.33* | *0.34* | *0.35* |
| *S / IC (EOY)* | *0.23* | *0.25* | *0.27* | *0.28* | *0.30* | *0.32* | *0.33* | *0.34* |
| *ROIC (EOY)* | *3.1%* | *3.9%* | *4.8%* | *5.6%* | *6.4%* | *7.0%* | *7.9%* | *8.6%* |
| *ROIC (BOY)* | | *3.8%* | *4.8%* | *5.7%* | *6.4%* | *7.1%* | *8.1%* | *8.9%* |
| *Share Growth* | *19.1%* | *-1.4%* | *-3.6%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* |
| Sales | $13,997 | $15,161 | $16,318 | $17,461 | $18,683 | $19,897 | $21,190 | $22,568 |
| NOPAT | $1,851 | $2,314 | $2,864 | $3,405 | $3,923 | $4,377 | $5,043 | $5,642 |
| *Growth* | *39.3%* | *25.0%* | *23.8%* | *18.9%* | *15.2%* | *11.6%* | *15.2%* | *11.9%* |
| - Change in NWC | 87 | -648 | 175 | 765 | 41 | 38 | 62 | 65 |
| *NWC EOY* | *800* | *152* | *326* | *1091* | *1132* | *1170* | *1232* | *1297* |
| *Growth NWC* | *12.2%* | *-81.0%* | *115.3%* | *234.4%* | *3.8%* | *3.4%* | *5.3%* | *5.3%* |
| - Chg NFA | -734 | 166 | -586 | 870 | 58 | 955 | 1103 | 2155 |
| *NFA EOY* | *59,759* | *59,925* | *59,339* | *60,209* | *60,267* | *61,222* | *62,325* | *64,480* |
| *Growth NFA* | *-1.2%* | *0.3%* | *-1.0%* | *1.5%* | *0.1%* | *1.6%* | *1.8%* | *3.5%* |
| Total inv in op cap | -647 | -482 | -411 | 1635 | 99 | 993 | 1164 | 2220 |
| Total net op cap | 60559 | 60077 | 59665 | 61300 | 61399 | 62392 | 63557 | 65777 |
| FCFF | $2,498 | $2,796 | $3,276 | $1,770 | $3,824 | $3,384 | $3,879 | $3,422 |
| *% of sales* | *17.8%* | *18.4%* | *20.1%* | *10.1%* | *20.5%* | *17.0%* | *18.3%* | *15.2%* |
| *Growth* | | *12.0%* | *17.1%* | *-46.0%* | *116.0%* | *-11.5%* | *14.6%* | *-11.8%* |
| - Interest (1-tax rate) | 401 | 389 | 389 | 417 | 446 | 475 | 506 | 539 |
| *Growth* | *2.6%* | *-2.8%* | *0.0%* | *7.0%* | *7.0%* | *6.5%* | *6.5%* | *6.5%* |
| FCFE w/o debt | $2,097 | $2,407 | $2,886 | $1,354 | $3,378 | $2,909 | $3,373 | $2,884 |
| *% of sales* | *15.0%* | *15.9%* | *17.7%* | *7.8%* | *18.1%* | *14.6%* | *15.9%* | *12.8%* |
| *Growth* | | *14.8%* | *19.9%* | *-53.1%* | *149.6%* | *-13.9%* | *15.9%* | *-14.5%* |
| / No Shares | 610.0 | 601.3 | 579.6 | 579.6 | 579.6 | 579.6 | 579.6 | 579.6 |
| FCFE | $3.44 | $4.00 | $4.98 | $2.34 | $5.83 | $5.02 | $5.82 | $4.98 |
| *Growth* | | *16.4%* | *24.4%* | *-53.1%* | *149.6%* | *-13.9%* | *15.9%* | *-14.5%* |
| * Discount factor | | 0.90 | 0.81 | 0.73 | 0.66 | 0.60 | 0.54 | 0.48 |
| Discounted FCFE | | $3.61 | $4.05 | $1.71 | $3.85 | $2.99 | $3.13 | $2.41 |
| **Third Stage** | | | | | | | | |
| **Terminal value P/E** | | | | | | | | |
| Net income | $1,250 | $1,925 | $2,475 | $2,988 | $3,478 | $3,903 | $4,538 | $5,103 |
| *% of sales* | *8.9%* | *12.7%* | *15.2%* | *17.1%* | *18.6%* | *19.6%* | *21.4%* | *22.6%* |
| EPS | $2.05 | $3.20 | $4.27 | $5.16 | $6.00 | $6.73 | $7.83 | $8.81 |
| *Growth* | *17.6%* | *56.2%* | *33.4%* | *20.7%* | *16.4%* | *12.2%* | *16.3%* | *12.5%* |
| Terminal P/E | | | | | | | | 26.00 |
| * Terminal EPS | | | | | | | | $8.81 |
| Terminal value | | | | | | | | $228.95 |
| * Discount factor | | | | | | | | 0.48 |
| Discounted terminal value | | | | | | | | $110.97 |

| **Summary (using P/E multiple for terminal value)** | | |
|---|---|---|
| First stage | $7.66 | Present value of first 2 year cash flow |
| Second stage | $14.10 | Present value of year 3-7 cash flow |
| Third stage | $110.97 | Present value of terminal value P/E |
| Value (P/E) | **$132.73** | |