

## Cadence Design Systems (CDNS)

**\$54.60** (As of 03/16/20)

Price Target (6-12 Months): **\$63.00**

Long Term: 6-12 Months

**Zacks Recommendation:** **Outperform**  
(Since: 02/12/20)

Prior Recommendation: Neutral

Short Term: 1-3 Months

**Zacks Rank:** (1-5) **2-Buy**

Zacks Style Scores: VGM:C

Value: D | Growth: A | Momentum: F

### Summary

Cadence is expected to benefit from robust adoption of the company's digital and signoff, custom and analog, IP solutions. Moreover, an expanding customer base bodes well. The launch of products that include Protium X1, Spectre X, Smart JasperGol and Tensilica Vision Q7 is expected to drive the company's top line in the upcoming quarters. A sturdy pipeline of innovative cloud-ready solutions also hold promise. Further, collaborations with Azure, AWS and Google Cloud platform is a positive. Additionally, higher investments on emerging trends like IoT, AR/VR, 5G and autonomous vehicle sub-systems present significant growth opportunity. The acquisitions of Integrand Software and AWR Corporation are noteworthy. Although shares have underperformed in the past year, these factors are expected to help the company grow in the rest of 2020.

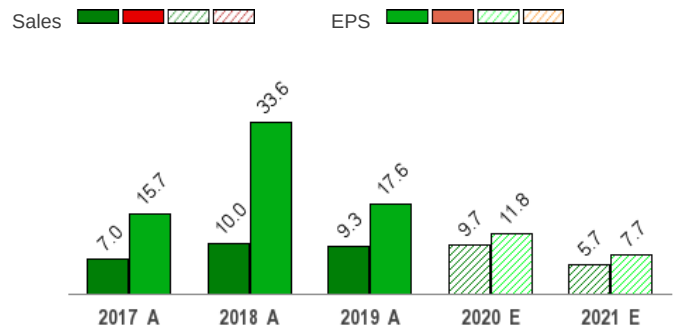
### Price, Consensus & Surprise



### Data Overview

|                            |                                     |
|----------------------------|-------------------------------------|
| 52 Week High-Low           | \$80.40 - \$54.10                   |
| 20 Day Average Volume (sh) | 2,833,164                           |
| Market Cap                 | \$15.3 B                            |
| YTD Price Change           | -21.3%                              |
| Beta                       | 1.17                                |
| Dividend / Div Yld         | \$0.00 / 0.0%                       |
| Industry                   | <a href="#">Computer - Software</a> |
| Zacks Industry Rank        | Top 24% (61 out of 253)             |

### Sales and EPS Growth Rates (Y/Y %)



|                           |            |
|---------------------------|------------|
| Last EPS Surprise         | 1.9%       |
| Last Sales Surprise       | 0.5%       |
| EPS F1 Est- 4 week change | 0.0%       |
| Expected Report Date      | 04/27/2020 |
| Earnings ESP              | 3.1%       |
| P/E TTM                   | 24.9       |
| P/E F1                    | 22.2       |
| PEG F1                    | 2.0        |
| P/S TTM                   | 6.6        |

### Sales Estimates (millions of \$)

|      | Q1    | Q2    | Q3    | Q4    | Annual* |
|------|-------|-------|-------|-------|---------|
| 2021 | 662 E | 669 E | 674 E | 682 E | 2,708 E |
| 2020 | 616 E | 627 E | 638 E | 682 E | 2,563 E |
| 2019 | 577 A | 580 A | 580 A | 600 A | 2,336 A |

### EPS Estimates

|      | Q1       | Q2       | Q3       | Q4       | Annual*  |
|------|----------|----------|----------|----------|----------|
| 2021 | \$0.64 E | \$0.65 E | \$0.66 E | \$0.68 E | \$2.65 E |
| 2020 | \$0.54 E | \$0.60 E | \$0.63 E | \$0.70 E | \$2.46 E |
| 2019 | \$0.54 A | \$0.57 A | \$0.54 A | \$0.54 A | \$2.20 A |

\*Quarterly figures may not add up to annual.

The data in the charts and tables, including the Zacks Consensus EPS and Sales estimates, is as of 03/16/2020. The reports text is as of 03/17/2020.

## Overview

Based in San Jose, CA, Cadence Design Systems Inc. (CDNS) offers products and tools that help customers to design electronic products. Through System Design Enablement (SDE) strategy the company offers software, hardware, services and reusable IC design blocks (IPs) to electronic systems and semiconductor customers.

Cadence's core electronic design automation (EDA) software and services enable engineers to develop different types of ICs. Its design IP's are directly integrated into the ICs.

Moreover, System Connect tools and services are used for the design, analysis and verification of PCBs. Further, System Integration solutions aid in designing and analyzing systems as well as verifying system functionality.

Cadence reported revenues of \$2.34 billion in 2019.

The major product lines are as follows:

Functional verification products (23% of total 2019 revenues) comprise four primary verification engines – JasperGold formal verification platform, Xcelium parallel simulation platform, Palladium Z1 enterprise emulation platform and Protium S1 FPGA-based prototyping platform.

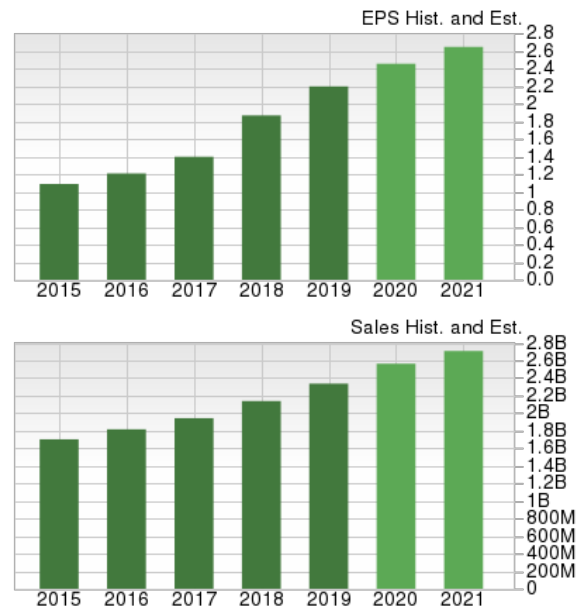
Digital IC Design and Signoff (30%) offerings include Genus synthesis, Stratus high-level synthesis, Joules RTL power and Modus test solutions. Innovus implementation system is the company's physical implementation offering. Tempus timing and Voltus power analysis, Quantus QRC extraction solutions, Physical Verification System and DFM are the signoff solutions.

Custom IC design (25%) includes the Virtuoso custom design platform. Virtuoso Advanced Node, Virtuoso Electrically Aware Design (EAD) and Spectre XPS FastSPICE Simulator are new products in the segment.

System Interconnect and Analysis segment (9%) offers Allegro system interconnect design platform, Sigrity analysis tools and OrCAD solution.

Under the IP segment (13%), Cadence offers Tensilica DSPs, vertically targeted subsystems for audio/voice, baseband and vision/imaging applications, controllers and physical interfaces (PHYs) for standard protocols and analog IP.

In 2019, the company derived 46% of revenues from Americas, while the balance 54% came from its international operations.



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## Reasons To Buy:

- ▲ Expanding product portfolio as well as frequent product launches is a key catalyst. The company is focusing on providing end-to-end solutions, which rapidly reduces the time required to introduce a semiconductor product in the market. The company is experiencing strong demand for its software – particularly verification and digital design products – from customers providing datacenter servers, networking products and smartphones that continuously invest in new design concepts and projects. We also believe that increasing investments on emerging trends like Internet-of-things (IoT), augmented and virtual reality (AR/VR) and autonomous vehicle sub-systems presents significant growth opportunity for the company in the long haul.
- ▲ Cadence ended 2019 with backlog of \$3.6 billion. The company continues to invest heavily in verification and digital design products, which is helping it to launch products that address the ever-growing needs of electronics and semiconductor companies. We believe that the launch of new products like Protium X1, Spectre X, Smart JasperGold and Tensilica Vision Q7 and Xcelium, which have already been selected by new customers like NVIDIA, Xilinx and Mellanox, will boost top-line growth. Solid adoption continues for Palladium Z1 on the back of strong demand for growing hardware capacity is notable.
- ▲ We believe that increasing spending by enterprises on emerging categories like Internet-of-Things (IoT) and AR/VR presents significant growth opportunity for Cadence. Market research firm IDC estimates global IoT spending to hit \$1.1 trillion in 2023, from \$726 billion in 2019. Moreover, the firm estimates AR/VR spending to see a CAGR of 77% over 2019-2023. This presents significant growth opportunity for semiconductor chip makers as well as electronics sensor developers. We note that these two industries comprise the majority of customer base for Cadence. We believe that the company's expanding product portfolio will help it to win frequent orders as well as new customers from these emerging markets going ahead.
- ▲ Autonomous vehicle is a notable growth market for Cadence. Of late, the company has won orders from well-known companies like Intel's MobilEye and Infineon who are developing advanced driver assistance systems (ADAS) related technologies. The company has also introduced a broad portfolio of interface and memory design IP solutions for automotive applications using TSMC's 16-nanometer FinFET Compact process. We note that the expansion of Renesas agreement reflects the company's growing clout in the autonomous vehicle market. The company has placed a dedicated team to look after automotive ventures, which reflects the growing importance of the end-market for Cadence. This is a prudent step given the significant growth prospect of the ADAS market, which is estimated to be worth \$134.9 billion by 2027, according to data from MarketAndMarkets.
- ▲ We also note that the company is focused on developing its footprint in the aerospace and defense segment. Apart from having a dedicated team for the sector, Cadence has expanded systems business through partnerships with established sector players like Northrop Grumman, BAE Systems and GE Aviation. We believe that these partnerships will help in driving the company's market position in the long run.

Cadence is well positioned for growth driven by expanding product portfolio, strong demand for products from existing and emerging markets, and solid recurring revenues that enhances visibility.

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## Risks

- Semiconductor research & development budgets have contracted in recent years and may continue reducing the amount spent on EDA software. Moreover, the EDA industry faces pricing problems from direct discounting, extension of payment terms, and/or the lowered value of a deal. These are significant headwinds for Cadence in the long haul.
  - Cadence faces stiff competition from other EDA companies like Synopsys, ANSYS and Siemens AG (post the acquisition of Mentor Graphics). Intensifying competition negatively impacts pricing power, which keeps margins under pressure. Moreover, in order to remain competitive the company has increased spending on research & development (particularly on verification and digital design products) in the last 12-months, which is likely to limit operating margin expansion.
  - The company generates a significant portion of its revenues (54% in 2019) from the International market. Hence, we expect adverse foreign currency exchange rates to impede revenue growth in the near term owing to fluctuation in the U.S. dollar as against the Japanese Yen, Euro and other foreign currencies.
  - Acquisitions have also negatively impacted its balance sheet, as high indebtedness adds to the risk of investing in the company. As of Dec 28 2019, the company's long-term debt came in at \$346.0 million compared with \$345.8 million in the previous quarter. We also note the high level of goodwill and intangible assets, which totaled \$834.2 million or 24.8% of total assets, as of Dec 28, 2019.
  - The company is trading at premium in terms of Price/Sales (P/S). Cadence currently has a trailing 12-month P/S ratio of 6.53, which compares unfavorably with some extent with what the industry witnessed over the last year. Hence, valuation looks slightly stretched from P/E perspective.
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## Last Earnings Report

### Cadence Q4 Earnings & Revenues Rise Y/Y

Cadence Design Systems, Inc. reported fourth-quarter 2019 non-GAAP earnings of 54 cents per share, which increased 3.8% from the year-ago quarter.

Revenues of \$599.6 million improved 5.3% on a year-over-year basis.

The year-over-year outperformance can be attributed to robust adoption of the company's digital & signoff, and IP solutions along with an expanded customer base. Moreover, better-than-expected demand for Tensilica products and robust growth in audio, imaging, computer vision, and machine learning drove revenues.

Quarter Ending **12/2019**

| Report Date      | Feb 12, 2020 |
|------------------|--------------|
| Sales Surprise   | 0.52%        |
| EPS Surprise     | 1.89%        |
| Quarterly EPS    | 0.54         |
| Annual EPS (TTM) | 2.19         |

### Quarter Details

Product & Maintenance revenues (94.2% of total revenues) of \$565 million advanced 5.7% year over year.

However, Services revenues (5.8%) of \$34.6 million declined 2.4% from the year-ago quarter.

Geographically, Americas, China, Other Asia, Europe, Middle East and Africa (EMEA), and Japan contributed 46%, 9%, 20%, 18% and 7%, respectively, to total revenues.

Product-wise, Functional Verification, Digital IC & Signoff, Custom IC Design & Simulation, Systems Interconnect & Analysis, and IP comprised 24%, 29%, 25%, 9% and 13% of total revenues, respectively.

Verification Suite, the company's flagship emulation platform Palladium Z1, witnessed 19 new customer wins while Protium X1 witnessed 11 wins. Moreover, a global marquee customer expanded its hardware footprint with additional Z1 capacity as well as X1, which was one the largest hardware orders ever for Cadence.

Meanwhile, non-GAAP gross margin increased 110 basis points (bps) year over year to 89.7%.

Total non-GAAP costs and expenses increased 6% year over year to \$415.1 million.

Non-GAAP operating margin was 30.8%, down 50 bps from the year-ago quarter.

### Balance Sheet & Cash Flow

As of Dec 28, 2019, the company had cash and cash equivalents of approximately \$705.2 million compared with \$655.2 million as Sep 30, 2019.

The company generated operating cash flow of \$159.3 million in the reported quarter compared with prior-quarter figure of \$138.5 million.

The company repurchased shares worth approximately \$75 million in the fourth quarter.

### Guidance

For first-quarter 2020, Cadence expects total revenues in the range of \$610 million to \$620 million. Management guided non-GAAP earnings in the range of 53-55 cents per share.

Non-GAAP operating margin for first-quarter 2020 is expected at around 30%.

For 2020, revenues are projected in the range of \$2.545-\$2.585 billion. Non-GAAP earnings are expected in the range of \$2.40-\$2.50 per share.

Further, non-GAAP operating margin for 2020 is expected in the range of 32-33%. Operating cash flow is anticipated in the range of \$775-\$825 million.

Notably, the guidance for 2020 takes into account the export limitations for certain Chinese customers, two recent acquisitions and the effect of the coronavirus outbreak in China.

## Recent News

On Mar 11, 2020, Cadence Design announced that it had optimized the software for Cadence Tensilica HiFi digital signal processors to address the growing demand for pervasive intelligence in advanced audio, voice and sensing applications.

On Mar 9, 2020, Cadence Design announced collaboration with STMicroelectronics to work on a 56G very short-reach (VSR) SerDes in 7nm for a system on chip (SoC) targeted at the networking, cloud and data center markets.

On Mar 5, 2020, Cadence Design announced a partnership with Dover Microsystems to deliver a solution that enables the development of secure processing for aerospace and defense applications.

On Feb 13, 2020, Cadence Design announced acquisition of Integrand Software to strengthen foothold in the 5G RF communications domain. Integrand specializes in EMX technology, which is integrated with Method of Moments (MoM) solver capabilities. The terms of the deal have been kept under wraps.

On Jan 15, 2020, Cadence Design announced that it has completed the acquisition of AWR Corporation from National Instruments Corporation. The buyout is expected to bolster the company's footing in 5G RF communications and support system innovation.

On Jan 14, 2020, Cadence Design announced that it is expanding its partnership with Broadcom Inc. for developing advanced semiconductor solutions. The collaboration will include the creation of 5nm designs.

## Valuation

Cadence Design Systems shares are down 19.4% in the past six-month period and 10.6% over the trailing 12-month period. Stocks in the Zacks sub-industry and the Zacks Computer & Technology sector are down 9.3% and 15.6% in the past six-month period, respectively. Over the past year, the Zacks sub-industry and the sector are down 0.6% and 12.2%, respectively.

The S&P 500 index is down 20.3% in the past six-month period and 16.5% in the past year.

The stock is currently trading at 21.86X forward 12-month earnings, which compares to 21.87X for the Zacks sub-industry, 16.14X for the Zacks sector and 13.88X for the S&P 500 index.

Over the past five years, the stock has traded as high as 50.7X and as low as 21.86X, with a 5-year median of 35.74X. Our Outperform recommendation indicates that the stock will perform better than the market. Our \$63 price target reflects 25.23X forward 12-month earnings.

The table below shows summary valuation data for CDNS

| Valuation Multiples - CDNS |               |       |              |        |         |
|----------------------------|---------------|-------|--------------|--------|---------|
|                            |               | Stock | Sub-Industry | Sector | S&P 500 |
| P/E F12M                   | Current       | 21.86 | 21.87        | 16.14  | 13.88   |
|                            | 5-Year High   | 50.70 | 28.74        | 22.01  | 19.34   |
|                            | 5-Year Low    | 21.86 | 18.59        | 16.14  | 13.88   |
|                            | 5-Year Median | 35.74 | 24.45        | 19.30  | 17.42   |
| P/S F12M                   | Current       | 5.90  | 5.51         | 2.68   | 2.55    |
|                            | 5-Year High   | 8.90  | 7.22         | 3.58   | 3.43    |
|                            | 5-Year Low    | 3.04  | 3.88         | 2.3    | 2.54    |
|                            | 5-Year Median | 5.13  | 5.34         | 3.02   | 3       |
| P/B TTM                    | Current       | 7.29  | 7.51         | 3.89   | 3.21    |
|                            | 5-Year High   | 14.95 | 10.52        | 5.53   | 4.55    |
|                            | 5-Year Low    | 3.91  | 4.03         | 3.13   | 2.85    |
|                            | 5-Year Median | 10.17 | 6.33         | 4.27   | 3.63    |

As of 03/16/2020

## Industry Analysis Zacks Industry Rank: Top 24% (61 out of 253)



## Top Peers

|                                    |              |
|------------------------------------|--------------|
| PTC Inc. (PTC)                     | Outperform   |
| Autodesk, Inc. (ADSK)              | Neutral      |
| ANSYS, Inc. (ANSS)                 | Neutral      |
| Citrix Systems, Inc. (CTXS)        | Neutral      |
| Nuance Communications, Inc. (NUAN) | Neutral      |
| Open Text Corporation (OTEX)       | Neutral      |
| Synopsys, Inc. (SNPS)              | Neutral      |
| Konami Corp. (KNMCO)               | Underperform |

| Industry Comparison Industry: Computer - Software |                 |            |           | Industry Peers |              |              |
|---------------------------------------------------|-----------------|------------|-----------|----------------|--------------|--------------|
|                                                   | CDNS Outperform | X Industry | S&P 500   | ADSK Neutral   | NUAN Neutral | SNPS Neutral |
| <b>VGM Score</b>                                  | <b>C</b>        | -          | -         | <b>C</b>       | <b>F</b>     | <b>F</b>     |
| Market Cap                                        | 15.30 B         | 1.17 B     | 16.36 B   | 32.58 B        | 4.24 B       | 16.97 B      |
| # of Analysts                                     | 6               | 4          | 13        | 10             | 4            | 6            |
| Dividend Yield                                    | 0.00%           | 0.00%      | 2.63%     | 0.00%          | 0.83%        | 0.00%        |
| <b>Value Score</b>                                | <b>D</b>        | -          | -         | <b>D</b>       | <b>D</b>     | <b>D</b>     |
| Cash/Price                                        | 0.04            | 0.12       | 0.06      | 0.05           | 0.10         | 0.04         |
| EV/EBITDA                                         | 24.03           | 15.19      | 10.54     | 69.71          | 18.02        | 20.81        |
| PEG Ratio                                         | 1.99            | 1.82       | 1.46      | 0.91           | 3.50         | 1.46         |
| Price/Book (P/B)                                  | 7.29            | 3.50       | 2.26      | NA             | 3.44         | 4.09         |
| Price/Cash Flow (P/CF)                            | 13.77           | 17.42      | 8.80      | 70.49          | 11.30        | 21.27        |
| P/E (F1)                                          | 21.87           | 22.21      | 13.18     | 34.18          | 17.49        | 21.57        |
| Price/Sales (P/S)                                 | 6.55            | 3.21       | 1.78      | 9.95           | 2.42         | 5.03         |
| Earnings Yield                                    | 4.51%           | 4.35%      | 7.56%     | 2.92%          | 5.73%        | 4.64%        |
| Debt/Equity                                       | 0.16            | 0.16       | 0.70      | -14.71         | 1.41         | 0.14         |
| Cash Flow (\$/share)                              | 3.97            | 1.20       | 7.01      | 2.10           | 1.33         | 5.30         |
| <b>Growth Score</b>                               | <b>A</b>        | -          | -         | <b>A</b>       | <b>F</b>     | <b>F</b>     |
| Hist. EPS Growth (3-5 yrs)                        | 21.57%          | 11.15%     | 10.85%    | NA             | 1.54%        | 15.91%       |
| Proj. EPS Growth (F1/F0)                          | 11.74%          | 13.38%     | 5.72%     | 55.27%         | -24.78%      | 14.62%       |
| Curr. Cash Flow Growth                            | 138.95%         | 11.19%     | 6.15%     | 280.74%        | -36.12%      | 24.16%       |
| Hist. Cash Flow Growth (3-5 yrs)                  | 24.55%          | 8.71%      | 8.55%     | 8.91%          | -0.89%       | 8.09%        |
| Current Ratio                                     | 1.74            | 1.50       | 1.24      | 0.83           | 1.70         | 0.95         |
| Debt/Capital                                      | 14.13%          | 18.56%     | 42.57%    | NA             | 58.50%       | 12.28%       |
| Net Margin                                        | 42.33%          | 6.55%      | 11.64%    | 6.55%          | 14.02%       | 14.31%       |
| Return on Equity                                  | 62.01%          | 11.82%     | 16.74%    | -165.74%       | 12.71%       | 12.00%       |
| Sales/Assets                                      | 0.84            | 0.64       | 0.54      | 0.63           | 0.36         | 0.52         |
| Proj. Sales Growth (F1/F0)                        | 9.70%           | 6.89%      | 3.50%     | 20.87%         | -19.75%      | 8.04%        |
| <b>Momentum Score</b>                             | <b>F</b>        | -          | -         | <b>F</b>       | <b>D</b>     | <b>B</b>     |
| Daily Price Chg                                   | -12.60%         | -8.04%     | -12.67%   | -6.30%         | -16.81%      | -13.19%      |
| 1 Week Price Chg                                  | -3.49%          | -10.82%    | -11.01%   | -8.87%         | -14.35%      | -5.69%       |
| 4 Week Price Chg                                  | -30.68%         | -30.62%    | -32.63%   | -29.13%        | -35.18%      | -30.98%      |
| 12 Week Price Chg                                 | -22.16%         | -26.09%    | -30.17%   | -19.05%        | -16.71%      | -19.41%      |
| 52 Week Price Chg                                 | -10.58%         | -14.92%    | -23.26%   | -3.75%         | -10.23%      | 3.15%        |
| 20 Day Average Volume                             | 2,833,164       | 123,596    | 3,457,426 | 2,811,566      | 5,059,569    | 2,104,282    |
| (F1) EPS Est 1 week change                        | 0.00%           | 0.00%      | 0.00%     | 0.00%          | 0.00%        | 0.00%        |
| (F1) EPS Est 4 week change                        | 0.00%           | 0.00%      | -0.48%    | -4.23%         | -3.18%       | 0.66%        |
| (F1) EPS Est 12 week change                       | -3.43%          | 0.00%      | -0.93%    | -2.69%         | 2.01%        | 0.66%        |
| (Q1) EPS Est Mthly Chg                            | 0.00%           | -0.18%     | -0.60%    | -13.27%        | -6.90%       | -6.84%       |

## Zacks Style Scores

The Zacks Style Score is as a complementary indicator to the Zacks rating system, giving investors a way to focus on the highest rated stocks that best fit their own stock picking preferences.

Academic research has proven that stocks with the best Value, Growth and Momentum characteristics outperform the market. The Zacks Style Scores rate stocks on each of these individual styles and assigns a rating of A, B, C, D and F. We also produce the VGM Score (V for Value, G for Growth and M for Momentum), which combines the weighted average of the individual Style Scores into one score. This is perfectly suited for those who want their stocks to have the best scores across the board.

|                |   |
|----------------|---|
| Value Score    | D |
| Growth Score   | A |
| Momentum Score | F |
| VGM Score      | C |

As an investor, you want to buy stocks with the highest probability of success. That means buying stocks with a Zacks Recommendation of Outperform, which also has a Style Score of an A or a B.

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