



Bloomsburg Investment Group

Equity Analysis
Dow Chemical (DOW)

Analyst:

Connor Snook Class of 2018
Kris Lachapel and Nicholas Wolfgang Class of 2017
Keeyan Zimmerman class of 2021

Bloomsburg Investment Group Opinion:

According to analysis, we feel that DOW should be a buy. Dow is a global leader in specialty chemicals and agriculture chemicals. Dow has posted positive growth across all segments in 2016 with gains across nearly all geographical areas. (Asia Pacific, Europe, Middle East, Africa, India, North America). Dows annual dividend has reached a historic high of \$1.84 per share, has beat earning expectations in all 4 quarters in 2016, and the stock price is up 30%. The merger of equals with DuPont is on track to be cleared by regulators. DowDupont will be the global leader in specialty chemicals and agriculture chemicals, a market that has a tremendous growth outlook. DowDuponts three spin off companies will have a clear business and investment strategy to better deliver long term shareholder value.

Corporate Summary:

The Dow Chemical Company is a diversified chemical company headquartered Midland, Michigan and manufactures products as raw materials as customer products and services. Dow splits its business into 5 different segments, Agricultural Sciences, Consumer Solutions, Infrastructure solutions, Performance Materials & Chemicals, and Performance Plastics.

- Agriculture Sciences consists of crop protection, seed and plant biotechnologies, urban pest management solutions and healthy oils.
- Consumer products segment focuses on Consumer care, Automotive systems, Electronic Materials, and Consumer Solutions.
- Infrastructure Solutions segment is comprised of Dow Building & Construction, Dow Coating Materials, Energy & Water Solutions, Performance Monomers and Infrastructure Solutions-Silicones businesses
- Performance Materials & Chemicals consists of Chlor-Alkali and Vinyl, Industrial Solutions and Polyurethanes businesses.
- Performance Plastics is comprised of Dow Elastomers, Dow Electrical and Telecommunications, Dow Packaging and Specialty Plastics, Energy and Hydrocarbons businesses.

Corporate Details:

| | |
|--------------------------|-------------------------------|
| Name | Dow Chemical Co |
| Ticker | DOW |
| Domicile | United States |
| Sector | Basic Materials |
| Industry | Chemicals |
| Exchange | NEW YORK STOCK EXCHANGE, INC. |
| Last Close | 63.26 |
| Price 52 Wk High | 64.36 |
| Price 52 Wk Low | 47.51 |
| Latest Dividend | 0.46 |
| Dividend Yield % TTM | 2.91 |
| Beta 5 Yr (Mo-End) | 1.15 |
| Avg Daily Volume (3 Mo) | 5,851,741.15 |
| Shares Outstanding (mil) | 1,213.31 |
| Number of Analysts | 7 |



Dow Chemical Co

DOW

Financial Summary, Year End 2013 (in millions)

| | |
|-----------------------|-----------|
| Market Capitalization | 76,754.09 |
| Total Revenue | 48,158.00 |
| Gross Profit | 10,517.00 |
| Operating Income | 5,085.00 |
| Net Income Cont Ops | 4,404.00 |
| Net Income | 4,318.00 |
| Current Assets | 23,659.00 |
| Cash | 6,607.00 |
| Total Assets | 79,511.00 |
| Current Liabilities | 12,604.00 |
| Long-term Liabilities | 40,920.00 |
| Total Liabilities | 53,524.00 |
| Total Equity | 25,987.00 |
| Operating Cash Flow | 5,478.00 |
| Investing Cash Flow | -3,479.00 |
| Financing Cash Flow | -3,892.00 |
| Change In Cash | -1,970.00 |
| EBITDA | 8,133.00 |
| Enterprise Value | 91,510.09 |
| Capital Expenditure | -3,991.00 |
| P/E Ratio Forward | 15.06 |
| PEG Ratio | 2.11 |
| Dividend Yield % TTM | 2.91 |

Financial Highlights

2016 Full-Year Earnings Per Share of \$3.52; Operating Earnings Per Share Increased 7% to \$3.72

EBITDA was \$8 billion. Operating EBITDA was \$9.8 billion, up \$212 million compared with the prior year

Sales were \$13.0 billion, up 14 % versus the year-ago period driven by volume growth, including the acquisition of Dow Corning's silicones business. Sales rose 3 % excluding the silicones acquisition.

Infrastructure solutions segment surged 41% to \$2.4 billion

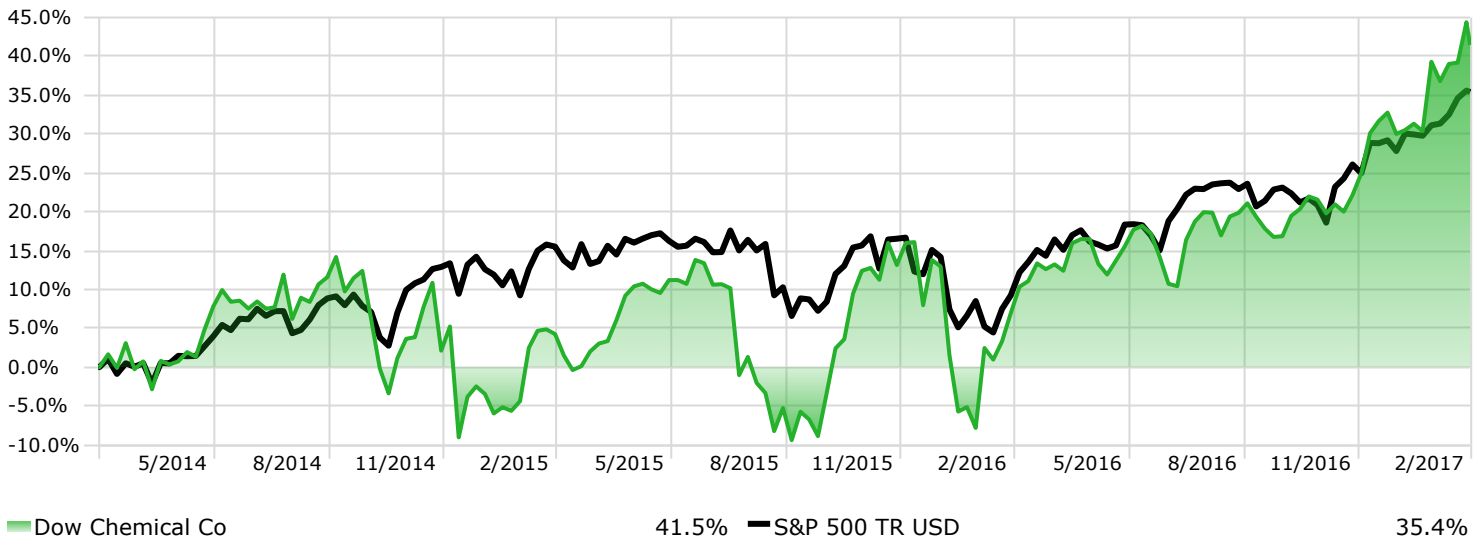
Dow delivered \$1.9 billion of cash flow from operations, down about \$4 million from the prior year

- Due to a negative impact of more than \$750 million of non-operational items

Stock price is up 30% in the last year.

Investment Growth

Time Period: 3/1/2014 to 2/28/2017



3/6/2017

Dow Chemical Co

US Dollar

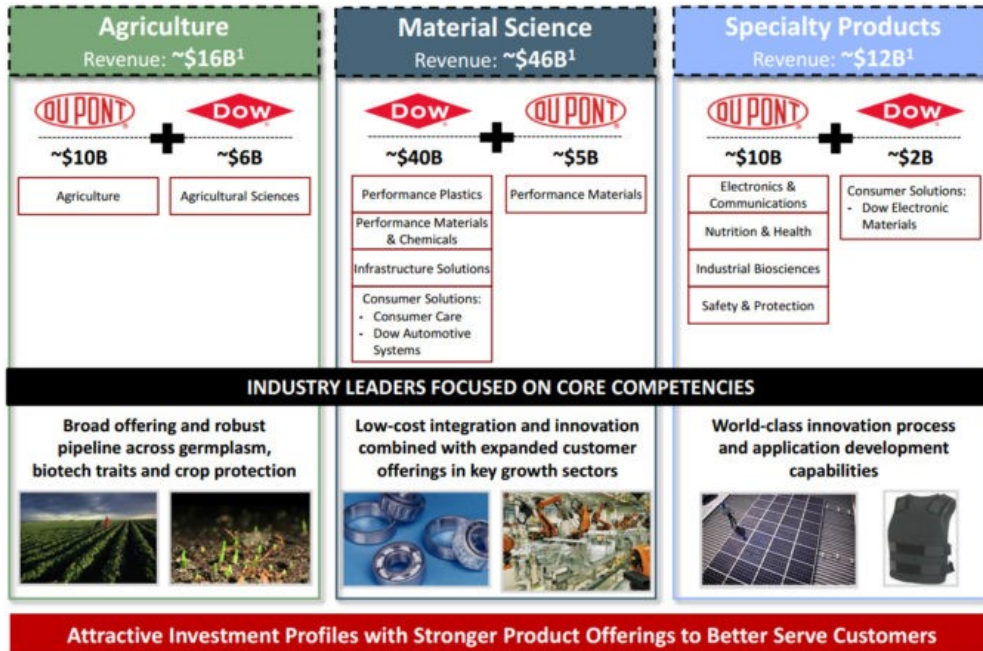
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Dow Chemical Co DOW

AS FILED WITH THE SEC ON 03/02/2016

Creates Global Leaders Based on Strong Industrial Logic



Note: Numbers may not sum due to rounding.
1. Based on Dow's and DuPont's Net Sales as reported in each company's 2015 Form 10-K filing.

Dow Chemical acquires joint venture with Corning Inc.

June 2016:

Dow now has full control over Dow Corning's silicon business, a joint venture between Dow Chemical and Corning Inc. Dow will now operate as a wholly owned subsidiary of Dow, ending their 72 year joint venture

Dow Corning's 2015s revenues exceeded \$4.5 billion

Expected to generate more than \$1 billion of annual EBITDA for Dow

Praxair Signs Long Term Contract with Dow

February 2017:

Praxair Inc. announced they started up a hydrogen facility that will recover by-product streams from a Dow chemical plant in Freeport, Texas

Praxair has also signed long term contract with Dow to supply nitrogen for its chemical production facility

3/6/2017

Dow Chemical Co

US Dollar

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Source: Morningstar Direct

Dow to sell is EAA business to SK Global

February 2017:

Dow announced that it has reached an agreement to sell its global Ethylene Acrylic Acid or EAA copolymers and ionomers business to SK Global Chemical Co.

Planned Divesture as part of regulatory approval process for the merger

European Regulators Nearing Approval of Merger

March 2017:

Expected to create \$30 billion of market value, DowDuPont would then split into three companies focusing on Agriculture, Materials Science, and Specialty Products

Dow announced that the merger is on track to be approved, causing the stock of Dow and Dupont to increase around 3%

Although the merger is still pending approval in the U.S and else where, Dow and Dupont are confident it will be approved



Dow Chemical Co

DOW

Industry Environment:

The materials industry was on a serious lag in 2015 going into 2016, but has started to move positively. This is because this market seems to be a pro Trump sector. With the trump administration planning to increase spending on infrastructure, this will positively impact the materials sector. Dow beat competitors in revenue of \$48 billion and net income of \$4.3 billion. Dows 2.95 price-to-book ratio is lower than their competitors, which could mean they are undervalued. Dow and DuPont's recent performance has been encouraging, and if the merger is approved, DowDuPont will become the global leader in diversified chemicals.

Competitor Comparison

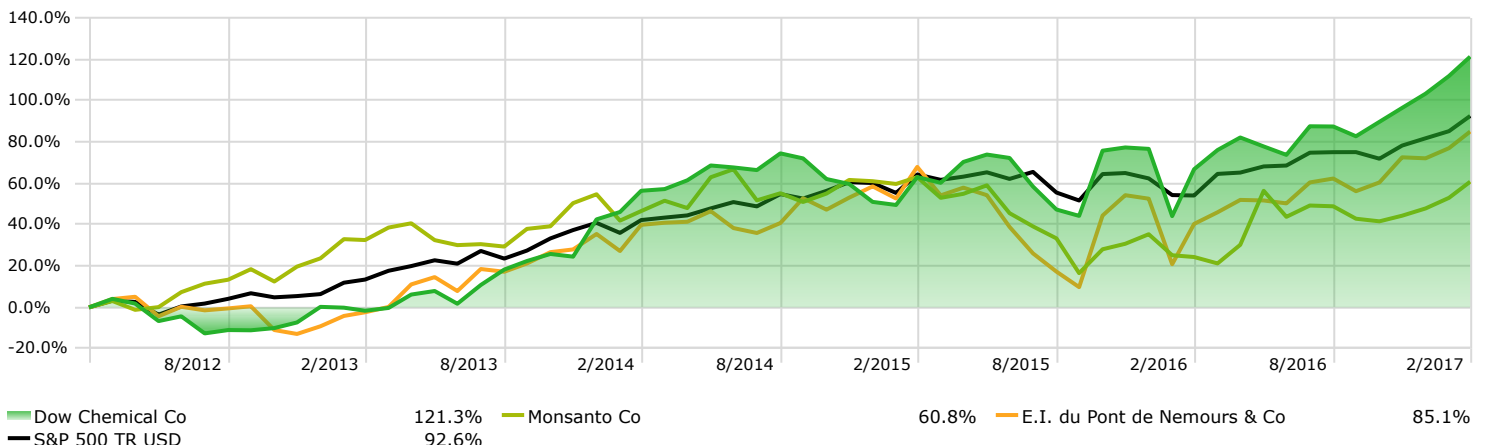
| | Revenue (mil) | Revenue % Chg | Gross Profit (mil) | Gross Margin % | Net Income (mil) | Net Income % Chg | Net Margin % | Market Cap (mil) (Daily) | Current Ratio | Receivable Turnover |
|------------------------------|---------------|---------------|--------------------|----------------|------------------|------------------|--------------|--------------------------|---------------|---------------------|
| Dow Chemical Co | 48,158.00 | -1.27 | 10,517.00 | 21.84 | 4,318.00 | -43.81 | 8.26 | 76,754.09 | 1.88 | 11.02 |
| Monsanto Co | 13,502.00 | -9.99 | 7,017.00 | 51.97 | 1,336.00 | -42.26 | 9.89 | 50,420.65 | 1.21 | 7.58 |
| E.I. du Pont de Nemours & Co | 25,302.00 | -2.03 | 10,833.00 | 42.81 | 2,513.00 | 28.67 | 9.89 | 68,820.09 | 1.92 | 7.18 |

Competitor Comparison (Cont.)

| | Asset Turnover | ROA % | Total Debt to Total Equity | ROE % | Beta 5 Yr | P/E Ratio Forward | PEG Ratio | P/B Ratio Current | Dividend Yield % TTM | Free Cash Flow / Sales % TTM |
|------------------------------|----------------|-------|----------------------------|-------|-----------|-------------------|-----------|-------------------|----------------------|------------------------------|
| Dow Chemical Co | 0.65 | 5.40 | 0.82 | 16.80 | 1.15 | 15.06 | 2.11 | 2.95 | 2.91 | 3.09 |
| Monsanto Co | 0.65 | 6.41 | 1.99 | 23.19 | 0.99 | 24.69 | 1.19 | 11.45 | 1.88 | 12.29 |
| E.I. du Pont de Nemours & Co | 0.62 | 6.17 | 0.87 | 25.65 | 1.71 | 21.46 | 2.55 | 7.05 | 1.91 | 9.02 |

Investment Growth

Time Period: 3/1/2012 to 2/28/2017





Dow Chemical Co

DOW

Strengths:

Globally sold to customers in over 180 Countries

Merger ventures to boost product portfolio

- **Kuwait:** Equate Petrochemical Company, Equate Marketing Company, The Kuwait Styrene Company etc..
- **Saudi Arabia:** Sadara, Arabian Chemical Company, Saudi Acrylic Monomer Company, etc.. Sadara (Dow and Saudi Aramaco Joint Venture) complex will include 26 manufacturing plants, making it the largest chemical facility built in a single phase
- **United Arab Emirates:** Arabian Chemical Insulation Company, MEGlobal

9 Consecutive year dividend increase, paid dividends every year since 1912

Diversified product portfolio

5 business segments: Agriculture Solutions, Consumer Solutions, Infrastructure Solutions, Performance Materials & Chemicals, Performance Plastics

Opportunities:

Merger with DuPont

- Highly complementary companies create strong, focused businesses with enhanced scale, unique growth strategies and differentiated technologies.
- Tax free structure
- Expected to create \$30 billion of market value

Growth in infrastructure and agriculture industry

- Infrastructure spending will grow from \$4 trillion per year in 2012 to more than \$9 trillion per year by 2025 (PWC)
- Crop Protection market is expected to grow to \$70 billion by 2021

President Trump wants to roll back on EPA regulations, this could save on compliance costs for DOW

Weaknesses:

Lawsuits and legal issues

- 2016- Dow agreed to pay \$835 million in a Polyurethane price fixing case with 4 other companies. Due to Supreme Court Justice Scalia's death, Dow did not believe they would win. Dow strongly believes that it was not part of any conspiracy and the judgment was fundamentally flawed as a matter of class action law

- DuPont \$670.7 million to settle lawsuits over Teflon chemical leak

Divestures in order to reach agreement with European regulators

- Sold its global ethylene acrylic acid copolymers and isomers business

Layoffs due to merger with DuPont and acquisition of Dow Corning

- Dow and DuPont both have cut large amounts of jobs in preparation of merger
- In 2016, Dow announced its plans to cut 8% of employees in Michigan due to acquisition of joint venture with Corning Inc.

Threats:

Threats to block merger

- Nearly 325 farming, beekeeping, foodsafety, and conservation advocacy groups are urging the U.S. Justice Department to investigate the mergers

Risks with international business

- Import tariffs, politically unstable markets (Middle East joint ventures)

Strong competition

- Bayer-Monsanto acquisition
- ChemChina-Syngenta acquisition
- Three Resulting companies would control 70% of worlds pesticides market, 61% of commercial seeds sales, and 80% of the U.S corn-seed market



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Valuation: Discount Cash Flow Model (DCF)

Using the Discounted Cash Flow (DCF) model, we valued Dow Chemical company at \$74.23. Our research and analysis has indicated that Dow chemicals cash flows will continue to grow over the short and long term. Our analysis indicates that Dow is undervalued, and investing in Dow Chemical Company will provide long term capital gains and dividend yields for our portfolio.

Valuation: Discount Dividend Model (DDM)

Using the Dividend Discount Model, we valued Dow Chemical at \$73.13. Dow has paid dividends every quarter since 1912. Recently Dow Chemicals quarterly dividend has been increasing, and we expect that trend to continue. The DDM model indicates that Dow is currently undervalued, trading at 63.50.

Valuation: Multiple Valuation

The Multiple Valuation model projected a valuation of \$72.11 using the projected EPS from CapitalIQ and average projected dividend growth. Once again our valuation signals that Dow Chemical is currently undervalued.



Dow Chemical Co

DOW

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