**Johnson and Johnson[[1]](#footnote-1)  
Forward Market Multiple Market Study[[2]](#footnote-2)**

Your valuation consultancy has been retained to perform a valuation of Johnson and Johnson (JNJ), a cash-rich, publicly-traded consumer pharmaceutical products firm domiciled in the US. The firm is the subject of a possible investment by your client, a well-known hedge fund with an activist investor strategy. The investment would be the largest the firm has entertained and as such you’ve been called on to provide your best estimate of JNJ’s value. You’ve chosen to consider the firm’s value using a Forward Market Multiple valuation based on the firm’s free cash flow (FCF) and EV/EBIT multiple, and intend to use the firm’s weighted average cost of capital as a reasonable discount rate.

In addition to gathering select data from industry analysts covering the firm, you’ve identified the following important information to assist you in your valuation:

* The firm’s EV/EBIT valuation multiple has ranged from a low of 9.42 in 2010 to a high of 22.63 in 1998 and reflects a multiple of 13.86 as of year-end 2016.
* JNJ has the highest enterprise value of other major firms in its space, including Colgate-Palmolive (70,537.2; 17.81), Novartis (211,623; 23.44), Pfizer (225,482; 15.80), Proctor & Gamble (246,654; 17.06) and Merck (181,080; 17.26); year-end EV (millions) and EV/EBIT multiples as noted.
* The firm’s 2016 year-end investment rate was 85.11%
* Long-run growth expectations for the economies in which JNJ does business are in line with GDP projections, currently at 2.5%, alongside inflation expectations of 1% for the foreseeable future.
* Interest rates on 30 US treasury securities remain weak at less than 3% and public and private debt burdens are expected to expand throughout the remainder of the decade.

Your crack team of analysts have prepared the attached valuation resulting in 12 different outcomes. You’ve presented the analysis to your clients and they’re now prepared to ask you some questions:

1. What is the virtue of using a valuation multiple rather than some other form of terminal value?
2. Your analysts have used an observed multiple (13.86), target multiple (15), and KVD multiple (8.63). Explain how each were identified (calculated) and defend the use of the target multiple (be very specific with respect to the KVD calculation).
3. Having access to current market values for JNJ, why would you not simply make an investment offer based on that value?
4. Given the information at your disposal, why would you use the firm’s WACC as the discount rate for your calculations rather than use your client’s required rate of return or the firm’s ROIC?
5. You instructed your analysts to use a long-run growth rate of 2.5% in their calculations. Why that rate compared to some other, and what other rate of long-run growth might you have been able to credibly defend?
6. At what valuation might a major investment in JNJ be attractive? Why that particular value?

|  |
| --- |
| **Select Financial and Market Information** |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **2016** | **2015** | **2014** |
| **Closing share price** | 115.21 | 102.72 | 105.60 |
| **Common Shares Outstanding** | 2737.3 | 2,771.80 | 2,815.20 |
| **Market Cap - Common** | 315,364 | 284,719 | 297,285 |
| **Book Value Long-Term Debt** | 22,442 | 12,857.00 | 15,122.00 |
| **Cash & Securities** | 41,907 | 38,376.00 | 33,089.00 |
| **Enterprise Value (EV)4** | 295,899 | 259,200 | 279,318 |
| **EBIT** | 21,350 | 18,368 | 20,929 |
| **Avg Tax Rate on EBIT** | 35% | 35% | 35% |
| **Invested Capital** | 114,921 | 105,664 | 106,034 |
| **ROIC** | 12.08% | 11.30% | 12.83% |
| **WACC5** | 8.48% | 9.18% | 9.11% |
|  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Derived and Calculated Data** | | | | | | | | | | | | | | | |
| **Year** | **EBIT** | **NOPLAT8** | | **FCF2** | **FA15** | | **CA** | **CL** | **IC7** | | **ROIC6** | **EV4** | | | **EV/EBIT Multiple** |
| 2014 | 20,929 | 13,603 | | 14,757 | 71,808 | | 59,311 | 25,085 | 106,034 | | 12.83% | 279,318 | | | 13.35 |
| 2015 | 18,368 | 11,939 | | 15,816 | 73,201 | | 60,210 | 27,747 | 105,664 | | 11.30% | 259,200 | | | 14.11 |
| 2016 | 21,350 | 13,877 | | 15,541 | 76,176 | | 65,032 | 26,287 | 114,921 | | 12.08% | 295,899 | | | 13.86 |
| 2017 | 23,371 | 15,190 | | 18,620 |  | |  |  |  | |  |  | | |  |
| 2018 | 25,336 | 16,468 | | 20,909 |  | |  |  |  | |  |  | | |  |
| 2019 | 26,814 | 17,429 | | 22,644 |  | |  |  |  | |  |  | | |  |
| 2020 | 28,425 | 18,476 | | 24,004 |  | |  |  |  | |  |  | | |  |
| 2021 | 30,093 | 19,560 | | 25,413 |  | |  |  |  | |  |  | | |  |
|  | | |  | | |  | |  | |  | | |  |  | | |
| **Analyst Consensus Estimates** | | | | | | | | | | | | | | | | |
|  | | | **Dec '17E** | | | **Dec '18E** | | **Dec '19E** | | **Dec '20E** | | | **Dec '21E** | **Dec '22E** | | |
| EBIT | | | 23,371 | | | 25,336 | | 26,814 | | 28,425 | | | 30,093 | 26,047 | | |
| Free Cash Flow | | | 18,620 | | | 20,909 | | 22,644 | | 24,004 | | | 25,413 | -- | | |
| Price/Earnings | | | 17.40 | | | 16.13 | | 15.20 | | 14.38 | | | 13.08 | 14.94 | | |
| Price/Book Value | | | 5.22 | | | 4.64 | | 4.11 | | 2.99 | | | -- | -- | | |
| EV/EBIT | | | 13.62 | | | 13.05 | | 11.97 | | 11.07 | | | 10.41 | -- | | |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **JNJ Valuation Analysis** | | | | | | | | | | | |
|  | | | | | | | | | | | |
| **VALKVD/NOPLAT** | | | |  | **VALKVD/FCF** | | | | **VALDCF/FCF** | | |
|  | **NOPLAT** | **PVNOPLAT** | **∑ PVNOPLAT** |  | **FCF** | **PVFCF** | **∑ PVFCF** |  | **FCF** | **PVFCF** | **∑ PVFCF** |
| 2017 | 15,191 | 14,004 | 14,004 |  | 18,620 | 17,165 | 17,165 |  | 18,620 | 17,165 | 17,165 |
| 2018 | 16,469 | 13,996 | 27,999 |  | 20,909 | 17,769 | 34,934 |  | 20,909 | 17,769 | 34,934 |
| 2019 | 17,429 | 13,655 | 41,654 |  | 22,644 | 17,740 | 52,674 |  | 22,644 | 17,740 | 52,674 |
| 2020 | 18,476 | 13,344 | 54,998 |  | 24,004 | 17,336 | 70,010 |  | 24,004 | 17,336 | 70,010 |
| 2021 | 19,560 | 13,023 | 68,021 |  | 25,413 | 16,919 | 86,930 |  | 25,413 | 16,919 | 86,930 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | **DCFNOPLAT** | 68,021 |  |  | **DCFFCF** | 86,930 |  |  | **DCFFCF** | 86,930 |
|  |  | **CVKVD** | 266,040 |  |  | **CVKVD** | 266,040 |  |  | **CVFCF** | 435,876 |
|  |  | **PVCV** | 177,125 |  |  | **PVCV** | 177,125 |  |  | **PVCV** | 290,198 |
|  |  | **VALKVD/NOPLAT** | 245,145 |  |  | **VALKVD/FCF** | 264,054 |  |  | **Valuation** | 377,127 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Observed Multiple9** | **CVFMM** | 427,497 |  |  | **CVFMM** | 427,497 |  |  | **CVFMM** | 427,497 |
|  | **PVCV** | 284,619 |  |  | **PVCV** | 284,619 |  |  | **PVCV** | 284,619 |
|  | **VALNOPLAT/FMM** | 352,640 |  |  | **VALFCF/FMM** | 371,549 |  |  | **VALFCF/FMM** | 371,549 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | **Target Multiple10** | **CVFMM** | 462,677 |  |  | **CVFMM** | 462,677 |  |  | **CVFMM** | 462,677 |
|  | **PVCV** | 308,042 |  |  | **PVCV** | 308,042 |  |  | **PVCV** | 308,042 |
|  | **VALNOPLAT/FMM** | 376,062 |  |  | **VALFCF/FMM** | 394,971 |  |  | **VALFCF/FMM** | 394,971 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | **KVD Multiple11** | **CVFMM** | 266,040 |  |  | **CVFMM** | 266,040 |  |  | **CVFMM** | 266,040 |
|  | **PVCV** | 177,125 |  |  | **PVCV** | 177,125 |  |  | **PVCV** | 177,125 |
|  | **VALNOPLAT/FMM** | 245,145 |  |  | **VALFCF/FMM** | 264,054 |  |  | **VALFCF/FMM** | 264,054 |

1. This problem set is for illustrative purposes only and in no way suggests or infers any relationship or association with Johnson and Johnson, a publically-held, domestic firm trading in the US capital markets. The data used in the problem set is culled from the Johnson and Johnson 2016 Annual Report, FactSet, and Bloomberg Systems Inc. [↑](#footnote-ref-1)
2. This problem set was prepared by Richard Haskell, PhD, Associate Professor of Finance, Gore School of Business, Westminster College, Salt Lake City, Utah, April 2017. [rhaskell@westminstercollege.edu](mailto:rhaskell@westminstercollege.edu) [↑](#footnote-ref-2)