

CORPORATE FINANCE COURSE EUS - SEM. 2 (2016-2017)

REPORT ON THE FINAL PROJECT

VALUATION OF KELLOGG CO.

Written by:

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Executive Summary:

This report is the result of the final work of Corporate Finance course (fall 2016-2017). Using the methods of valuation studied in class we estimated the equity value of Kellogg Co., an American multinational food manufacturing company at the end of December of 2016. The report is structured in five different parts: introduction, estimation of the cost of capital using the WACC method, valuation of the company using the multiples method, valuation of the company using the Discounted Cash Flow method and conclusion. Our results show that different valuation methods gave estimations close to the market price. While the multistage dividend model and multiples methods give the results bellow the market prices, the DCF method is approaching more closely the market valuation.

Implication of every group member: Equal

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I DESCRIPTION AND FUNDAMENTALS OF THE FIRM: KELLOGG CO.

Description of the company and relevant data

W.K. Kellogg, and his brother John Harvey founded Kellogg's Company in 1906 in the United States. Kellogg's headquarters are located in Battle Creek, Michigan and their current Chairman and Chief Exec. Officer is Mr. John A. Bryant. As of January 2, 2016, they had approximately 33,577 employees. The company focuses on the manufacture and marketing of ready-to-eat cereal and convenience foods. Their main products are cookies, crackers, savoury snacks, toaster pastries, cereal bars, fruit-flavoured snacks, frozen waffles, and veggie foods as well as healthy snacks such as wellness bars and beverages. These products are marketed under the Kellogg's, Keebler, Cheez-It, Pringles, Murray, Austin, and Famous Amos brands. In addition to these, Kellogg's categorizes their products on different segments: US Morning Foods, which account for 22% of sales, US Snacks which account for 24% of sales and US Specialty, North American Other, Europe, Latin America, and Asia Pacific, which account for the remainder. US Morning Foods include cereal, toaster pastries, health and wellness bars, and beverages. US Snacks include cookies, crackers, cereal bars, savoury snacks and fruit-flavoured snacks. Finally, US Specialty includes food service, convenience, vending, Girl Scouts, and food manufacturing.

Since February 24, 2016, these products have been manufactured in 20 countries and marketed in more than 180 countries. The company's main manufacturing facilities are located in the United States, specifically in Battle Creek, Michigan; Lancaster, Pennsylvania; Memphis, Tennessee; and Omaha, Nebraska, accounting for 63% of their main revenues. Kellogg's also has joint ventures in China, Nigeria and Turkey. Products are sold for grocery trade through direct sales and to supermarkets in the United States through a direct store-door (DSD) delivery system.

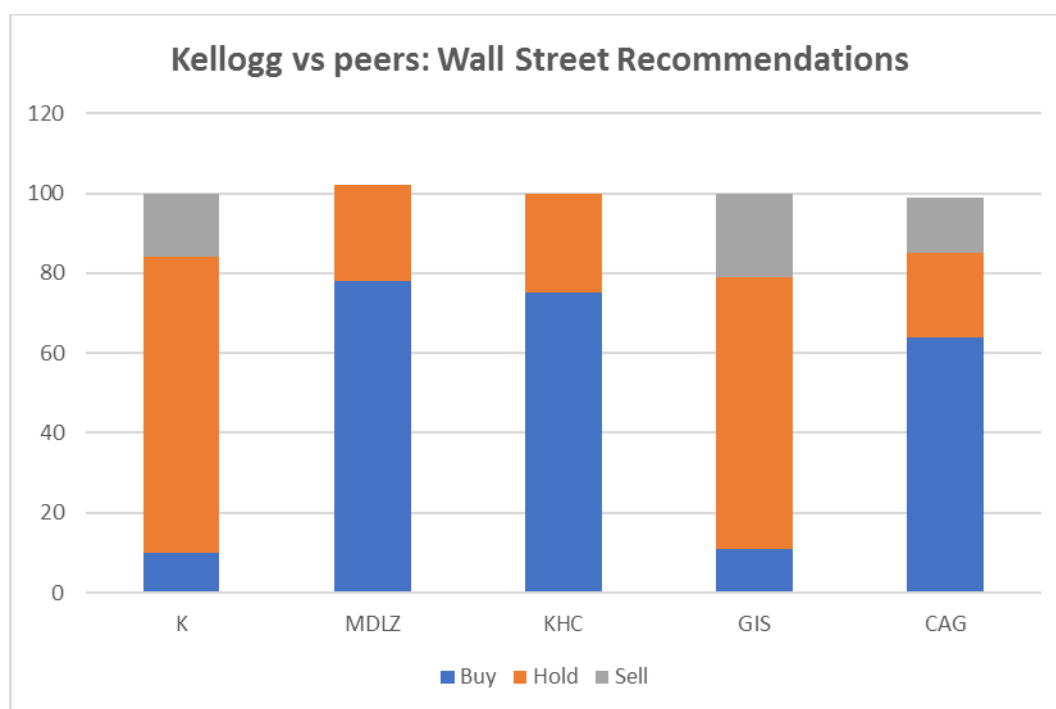
Kellogg's top five customers, including Wal-Mart, accounted collectively for 34% of net sales and 47% of U.S. net sales during 2015. Kellogg's dependence on just a few companies increase its risk by making it vulnerable to the loss of any one of their five main retailers. Additionally, Kellogg's may show vulnerability due to the increasing competition from lower-priced private-label cereal brands, to which consumers typically fall back during tough times.

Kellogg's main competitors are advertised and branded products of a similar nature such as: Amy's Kitchen, Inc., Campbell Soup Company, Frito-Lay North America, Inc., General Mills, Inc., Mondelez International, Inc., PepsiCo, Inc., and Snyder's-Lance, Inc. As well as unadvertised and private labelled products (unbranded), which tend to be distributed at lower prices, and generally with other food products. Their biggest rival, though, for the #1 spot in the cereal market is General Mills. At the moment, the leading cereal company of the US is General Mills and Kellogg is in second place with a retail market share of 25%.

The cereal market though, has recently faced a negative growth. This downward trend may be explained by changes in consumers' preferences, which are shifting away from cereal for breakfast, towards a healthier choice. Based on a recent report by Bloomberg, Americans now "tend to be averse to carbohydrates, which is a problem for a company selling cereal derived from corn, oats, and rice. "They basically have a carb-heavy portfolio," says Robert Dickerson, senior packaged-food analyst at Consumer Edge. If such discerning shoppers still eat cereal, they prefer the gluten-free kind, sales of which are up 22 percent, according to Nielsen" (Leonard, 2015).

By looking at the Financials for both firms, we can also conclude that General Mills may be having a brighter financial statement in terms of Sales/Revenue, when compared with Kellogg's. Based on Market Realist's reporter Adrian Steven, things are not looking very good. "The majority of analysts covering Kellogg (K) remain neutral on the stock, given the industry-wide slowdown. The consensus rating on Kellogg stock is a 3.0 on a scale of 1.0 (strong buy) to 5.0 (strong sell). Of the 19 analysts covering Kellogg, 10% rated it as a "buy" on May 5, 2017. 74% of analysts rated the company a "hold," and 16.0% rated it a "sell." Of the 19 analysts covering General Mills, 11.0% of the 19 analysts have rated it as a "buy," and 68.0% have rated it as a "hold." About 21.0% have rated it as a "sell." (Steven, 2017).

Table 1. Kellogg versus peers: Wall Street Recommendations.



Source: Wall Street Analyst's Estimates data

The graph above clearly reflects Kellogg's poor performance in comparison to its competitors, being the one that had the least percentage in terms of buying stocks in. Even though Kellogg still spends more than \$1 billion a year in advertising, their financial statements are showing no growth whatsoever in terms of their traditional cereal products. According to Consumer Edge Research, firm that tracks the food industry, sales of 19 of Kellogg's top 25 cereals fell last year. Starting by the fall of 4.5% in sales of Frosted Flakes which is the company's No.1 brand, followed by the decline of 5% in Frosted Mini-Wheats and the fall of 14% in Special K Red Berries which accounted for one of the company's most important success in the past decade. Kellogg executives expect to slow down the rate of decline and do better in 2016, even though some Wall Street analysts say cereal sales may never fully recover.

Financial Overview

Table 2. Financial Performance.

P&L statement (in millions of USD)					
	2012-12	2013-12	2014-12	2015-12	2016-12
Revenue	14197	14792	14580	13525	13014
Cost of revenue	8763	8689	9517	8844	8259
Gross profit	5434	6103	5063	4681	4755
Operating expenses	3872	3266	4039	3590	3360
Operating income	1562	2837	1024	1091	1395
Interest Expense	261	235	209	227	406
Other income	24	4	10	-91	-62
Income before taxes	1325	2606	825	773	927
Provision for income taxes	363	792	186	159	233
Other income	-1	-6	-6	—	1
Net income from continuing operations	961	1808	633	614	695
Other	—	-1	-1	—	-1
Net income	961	1807	632	614	694
Net income available to common	961	1807	632	614	694
Earnings per share					
Basic	2,68	4,98	1,76	1,74	1,98
Diluted	2,67	4,94	1,75	1,72	1,96
Weighted average share					
Basic	358	363	358	354	350
Diluted	360	365	360	356	354
EBITDA	2034	3373	1537	1534	1850

Source: own elaboration using Morningstar data

Based on the financial performance of Kellogg in the past five years, we can understand why so few analysts are recommending buying stocks right now. As was mentioned above, Sales/Revenues have been falling since 2014, when consumers shifted away from cereal being their #1 option for breakfast.

Additionally, revenues fell 7% in 2016, reaching \$13.25 billion, including lower sales in all segments. Specifically, in Europe, sales fell 13% due to flat volume and unfavourable pricing. This can also be reflected in the Net Income, lower revenue pushing towards a decline of 3% in net income. In terms of EBITDA we can also evidence the decline since 2014, when the big hit was directed towards cereal brands. It's important to point out that the big hit was during 2014, after this year, most of the financials in Kellogg and in most cereal companies started reporting negative growths. Sales, revenues, Net Income and EBITDA experiences a huge decrease during 2014, and

even though Net Income and EBITDA have reported a small increase since their numbers of 2014, Sales/Revenues are still not reporting any growth whatsoever, but even worse, continue to show negative growth.

Based on information by Euromonitor, breakfast cereal volume sales will continue to fall by 2% between 2016 and 2021, triggering a 5% drop in retail value sales during this same time. Due to consumer's change of demand to healthier options, Kellogg is rapidly losing its cereal market to rivals due to slower adoption of consumer preferences and stiff competition from seemingly nutritious brands. Due to this, Kellogg's U.S. Morning Food segment have experienced another 6% decline in sales in the first quarter of 2017. These results don't look good for Kellogg due to last year's 2% decline.

Kellogg Co.'s future

Due to this many changes and struggles that Kellogg is facing, they need rapid innovation to stabilize its cereal business and increase sales as rapidly as possible. At the moment the company is looking to make changes that will optimize their cost structure and boost their operating margin. With this in mind they expect their operating profit to increase by 7% - 9% this year despite an expected 3% decline in revenue. For starters, due to the shift from cereals towards nutritious and convenient foods, the demand for snack bars, fruit snacks, and sweet biscuits is rapidly increasing. Innovating in this sense trying to acquire back market share Kellogg is cutting sugars as much as possible across the product portfolio. At the moment, they have removed 19% to 24% of the sugar content from Coco Pops bars, Frosties, and Rice Krispies, and they are additionally adding extra fibers and vitamin D in their products in order to get back their demand and growth on it.

Another one of their big projects is Project K. The plan began in November 2013 and it's a four-year efficiency and effectiveness global program. The objective of the program was to help the company focus on core products with increased level of growth in revenues, gross margin, operating profit and cash flow, as well as hoping to generate a big amount of savings in order to invest them in key strategic areas of focus for the business. Nevertheless due to changes in the economy and the cereal market things have changed. Based on their 2015 Annual Report, *"The successful implementation of Project K presents significant organizational design and infrastructure challenges and in many cases will require successful negotiations with third parties, including labour organizations, suppliers, business partners, and other stakeholders. In addition, the project may not advance our business strategy as expected. As a result, we may not be able to implement Project K as planned, including realizing, in full or in part, the anticipated benefits from our program. Events and circumstances, such as financial or strategic difficulties, delays and unexpected costs may occur that could result in our not realizing all or any of the anticipated benefits or our not realizing the anticipated benefits on our expected timetable. If we are unable to realize the anticipated savings of the program, our ability to fund other initiatives may be adversely affected. Any failure to implement Project K in accordance with our expectations could adversely affect our financial condition, results of operations and cash flows."*

Another innovation has been the zero-based budgeting (ZBB) program, implemented in 2015 in North America business. In support of the plan, Kellogg incurred in pre-tax charges of approximately \$12 million in 2015. The process helped slice \$100 million in annual savings in North America during 2016. The company plans to expand the program into international markets.

Additionally, Kellogg is putting a lot of effort in the Kashi brand in order to redirect their product towards the new “fit” and healthier life that Americans are now pursuing. At the time they are focusing on promoting the new Kashi Go-Lean products, that are Non-GMO project verified, and Kashi Heart-to-Heart products, which have been suited to meet the USDA’s organic standard.

Another innovation, which is shifting towards generating a new public, is the opening of a cereal restaurant in Times Square in New York, which was planned to happen in 2016. The restaurant will focus on offering its traditional products as well as more adventurous concoctions developed by chefs.

As we can see with the big amount of changes that Kellogg is engaging into, the company is not doing well. When we look at the firm’s profitability we can see that their operating margin such as the return on equity ROE and the return on assets ROA are also showing a considerable fall since 2014 when the big hit towards cereal happened due to consumer’s changes.

Table 3. Kellogg Co. ROA and ROE.

		2016	2015	2014	2013
ROE		36,34%	28,85%	22,66%	50,97%
ROA		4,59%	4,03%	4,17%	11,68%
Leverage		7,91	7,17	5,43	4,37

Source:

Own elaboration using Morningstar data

With this in mind, we can also understand why the company may be seen as riskier at the moment. In terms of financial leverage it has increased also since 2014, meaning Kellogg has been forced to borrow each time more capital in order to make investment. For some financial analysts this may not be seen as bad, but when we look at the trajectory for the financial leverage of Kellogg’s it has been small and it is now increasing.

II DETERMINING THE WEIGHTED AVERAGE COST OF CAPITAL (WACC)

Disclaimer: the financial statements and the stock historical data of the company are in the appendix.

Below there is an explanation on how we computed the WACC of Kellogg Co. as of 31/12/2016.

Beta estimation

For estimating the beta we used 242 weekly observations (Source: yahoo.finance) both for the firm and for the market, starting the 14th of May of 2012 and ending the 26th of December of 2016. This is a total of 4,62 years.

The market we decided to observe is the NYSE, where Kellogg's stock operation mainly take place.

By doing the regression, we got a Beta value of 0.47. This means that the company poses a lower risk than the market itself. For comparative purposes, we searched for other Betas in the internet with success. Reuter's beta for Kellogg's is 0.5, while Goggle's one for the company is 0.49. These values are very close to our own Beta, and will be used later for conducting a sensitivity analysis.

	Calculated	Google Finance	Reuters
Beta	0,47	0,49	0,5

Cost of equity

This is one of the most difficult parts for calculating the WACC, given the subjectivity that implies deciding which method we want to use for doing it. We decided to use the CAPM model. In addition, we decided to estimate the risk of the market instead of using the Market Risk Premium. We did not use the MRP because we only have the 2015 value, not the 2016 one.

The risk free is the rate of 10 year US bonds, which according to Bloomberg, is 2,18%.

The formula for computing the cost of equity is: $r_e = r_f + \beta \cdot (r_m - r_f)$

Therefore, the cost of equity is 5,38%.

re	5,38%
rf	2,18%
B	0,47
rm	8,99%

Cost of debt

For the cost of debt, we divided the interest expenses of the year X by the total debt in the year X-1, giving us a rate of 5,2%.

Tax rate

By dividing the taxes paid by the EBT we got a value of 25,23% for the tax rate.

Total value

We needed to find the value of equity in the market (market capitalization of the firm). The total outstanding shares this company has is 296.565.528 (Source: NASDAQ), and after multiplying it by our last share price (73,71\$) we get a value of 21,86 bn.

When valuing debt, we only used the long-term debt (the short-term debt amounts for less than 15% of the total debt). Since we couldn't find the market value of these obligations, we used the books value. The debt is 6.7 bn.

Hence, the total value is 21,86 bn + 6.7 bn = 28,56 bn (for finding the WACC we used the exact value, which is 28.557.845.000 \$).

Weighted Average Cost of Capital (WACC)

Once we had all the necessary data, we proceeded to compute the WACC with the following expression: $WACC = r_e \cdot \frac{Equity}{Total\ Value} + k_d \cdot (1 - t_c) \cdot \frac{Debt}{Total\ Value}$

WACC	5,04%
re	5,38%
E/V	0,77
Kd	5,23%
tc	25,13%
D/V	0,23

The WACC is 5,04%. Thanks to the tax shield, the WACC is lower than both cost of equity and cost of debt.

Sensitivity analysis

In this section, we will conduct a simple sensitivity analysis regarding the WACC assuming a Ceteris Paribus environment. Our own WCC (5,04%) will be the one used in this project, the following one will only be relevant for this part.

We start by comparing the effects in the cost of equity for the different Betas we know (Source: Reuters and Google finance). Original cost of equity: 5,38%

Re (Google finance) = 5,52%

Re (Reuters) = 5,59%

In addition, we also want to see the impact of using the Market Risk Premium instead of our own estimated market risk minus risk free rate. The MRP for the US is 5,5% (Fernandez P, 2016, p.3).

Re (original Beta + MRP) = 4,77%

Re (Google finance + MRP) = 4,88 %

Re (Reuters + MRP) = 4,93%

WACC		
	Original (rm-rf)	MRP
Original Beta	5,04%	4,57%
Google Finance Beta	5,15%	4,66%
Reuters Beta	5,20%	4,70%

Since our Beta is similar to the ones given by Reuters and Google finance, the change in WACC has been affected but not importantly. The use of the MRP though, has had an important impact on WACC. This is because our rm-rf is 6,91%, whereas the MRP is 5,5%. But we have to keep in mind that we did not use the MRP because it is a 2015 estimation and we are estimating the WACC at 31/12/2016.

Let's see now how an expansionary or repressive economic policy would affect the cost of capital. We will consider an increase and decrease of cost of debt with the same taxes and then a variation of the tax rate as well.

Higher $K_d = 8\%$

Lower $K_d = 2\%$

Expansionary policy (tax decrease + lower K_d): $T_c = 20\%$, $K_d = 2\%$

Repressive policy (tax increase + higher K_d): $T_c = 30\%$, $K_d = 8\%$

WACC			
	Standard T_c	Higher T_c	Lower T_c
Standard K_d	5,04%	4,98%	5,10%
Higher K_d	5,52%	5,43%	-
Lower K_d	4,49%	-	4,51%

An increase in the tax rate slightly affects positively in the WACC, thus lowering its rate thanks to the tax shield effect. The cost of capital is very sensitive to the variation in the cost of debt.

In conclusion, the cost of debt and the cost of equity are the variables that have the most important effect in the WACC. With remarkably different Beta values the impact this value has on the cost of capital should be noticeable. The tax rate variable has a minor effect.

III VALUATION: THE METHOD OF EXPECTED DIVIDENDS AND BY COMPARISON (MULTIPLES)

In this part, we estimated the company's value by using Expected dividends growth method and by comparing to their peers in the similar industry.

Expected dividends growth method

Minority shareholders obtain their profitability from the push-up of stock price and the dividends. Even though in reality the small shareholders are usually just focus on the current stock price, or their historical information, which shows the actual valuation of the company, and of cause the possibility gains from difference of share price. But we should understand that there are many factors that affect the fluctuation of stock price, which lets this result be more instable and inefficient. Therefore, in this part, we use the *Gordon and Shapiro* model to determine the present value by estimating the future expected dividends.

General formula:

$$P_0 = \frac{D_1}{1 + re} + \frac{D_2}{(1 + re)^2} + \frac{D_3}{(1 + re)^3} \dots$$

re: The expected return comparing the free – risk securities

This formula shows that the present value of a stock is the sum of the present value of expected dividends in the future discounting the market capitalization rate %(re)

Gordon and Shapiro model assume that the dividends grow at a constant annual expected rate, g, because of

- a. Annual inflation
- b. Reinvestment of earnings per share will lead to a better performance in the next year, so does the dividend.

Then after applying the "g" into the general formula, we obtain that

$$P_0 = \frac{D_1}{re - g}$$

*0 means that we can start the calculation in every period, and dividend we should take it from the next period.

The growth can be calculated by $g = \text{plowback ratio} * ROE$

$$g = (1 - \text{average of 5 years payout ratio}) * ROE \text{ of last available 5 year}$$

Let's return to our target company: Kellogg. From the previous part we have obtained the re 5,38% and from the web Morningstar, we have found out the dividends payment of last 7 years, although in the calculation we just need the last 5 years.

Table 4. Historical dividend payment.

	2010	2011	2012	2013	2014	2015	2016	
dividends per share	1,56	1,67	1,74	1,80	1,90	1,98	2,04	average historic growth ra
historical growth dividend rate, %		7,05%	4,19%	3,45%	5,56%	4,21%	3,03%	4%

Source: Own elaboration using Morningstar data

From the table, we could observe that the historical growth rate is maintained in a stable rate, nearly 4%. This shows up the constant payout policy of Kellogg.co. However, we can estimate the g of dividend by another alternative option: plow-back method. Plow-back ratio is calculating base on the pay-out ratio, the formula is Plow-back = (1-pay-out)

Table 5. Growth calculation via Plow-back ratio.

	2010	2011	2012	2013	2014	2015	2016	
5 years average adjusted ROE	0,56	0,63	0,46	0,61	0,20	0,25	0,34	
Dividends pay-out ratio	0,47	0,51	0,65	0,68	0,39	1,91	1,02	0,93

Source: Own elaboration using Morningstar data

$$g = (1 - \text{pay out}) * \text{ROE} = (1 - 0,93) * 0,34 = 2\%$$

But we have found out something rare in the data collection, 2015 and 2016 the company had a dividend pay-out over 100%, and also the pay-out ratio had gone down a lot from 2013 to 2014. The over 100% data means that the Kellogg was paying out more than their net earnings, which would not have sustainable effect. In many publishing on the internet, the financial experts discuss the reason about extreme pay-out ratio, the main one is that the company would have committed to a constant growth in previous year, but the net-earnings cannot keep up with this rate. To maintain the satisfaction of current shareholders, they keep paying out at the same level by borrowing money, using cash reserves or selling assets. Also, the depreciation could have impact on this unsustainable situation. Because it is not a cash-out for company, which consists in the calculation of net earnings but not in the cash available for shareholders. Plow-back ratio is the inverse of pay-out ratio, in these two years, our pay-out ratio is larger than 1, but plow-back can't be negative. To avoid these uncommon information, we simply used the 4% (the average historical growth rate) for the following calculations.

Table 6. Gordon/Shapiro constant growth method.

Dividends (Gordon-Shapiro constant growth)	
$P_0 = \text{Dividend} / (re - g) = (2,04 * 1,04) / (0,0538 - 0,04)$	Current market 69,15
$P_0 = (2,04 * 1,04) / (0,0538 - 0,04) =$	153,7391304

Sources: own elaboration

According to the model, Kellogg stock is worth \$153.74 per share but is trading at \$69.15; the Gordon Growth Model shows an extremely optimistic forecasting. In fact, for a mature industry, a constant growth of 4% is TOO HIGH. It will be highly improbable to maintain this rate in the indefinite future considering the depreciation, if we want a more accurate valuation, it's better to use the multistage growth.

From the latest reporting of Kellogg CEO, they are trying to maintain the stable growth of past years, and improve their structure in the upcoming 5 years. Then we assume conservatively in coming 5 years that Kellogg's will maintain this constant growth 4%, after that, due to reaching the roof of improvement, the growth will be around 2% (the company will grow roughly the same than the market, nothing more, nothing less). Then we apply the Gordon-Shapiro Multistage growth models

Table 7. Gordon-Shapiro multistage growth.

multistage growth model:	1 stage of the growth					2022..	
	2017	2018	2019	2020	2021	2022..	
2016	1	2	3	4	5	perpetuity	
	2,04	2,12	2,21	2,30	2,39	2,49	2,59
discounted dividend payments:	2,01	1,99	1,96	1,94	1,92		
					75,15	terminal value	
assumptions: during the first stage of the growth the average 4% growth of the dividends is as					57,83	discounted terminal value	
starting from the year 2022 dividends will grow at average constant rate 2%					\$67,65	Intrinsic value of share	

Source: Own elaboration

$$P_0 = \frac{2,12}{1,0538} + \frac{2,21}{1,0538^2} + \frac{2,30}{1,0538^3} + \frac{2,39}{1,0538^4} + \frac{2,49}{1,0538^5} + * \frac{75,15}{1,0538^5}$$

*This is the actualization of future value in perpetuity, the 75.15 is calculated by $\frac{2,49 * 1,02}{0,0538 - 0,02}$

Table 8. Comparison of estimated and current value.

	Method	Value (\$)
Static	Book value	\$1.910.000.000,00
Dynamic	constant grow	\$62,77
	multistage gr	\$68,80
Book value per share	\$6,44	
Market value per share (December)	\$73,71	The multistage growth is more similar to the actual trading price of the company
Market value per share (June)	\$69,15	

Sources: Own elaboration

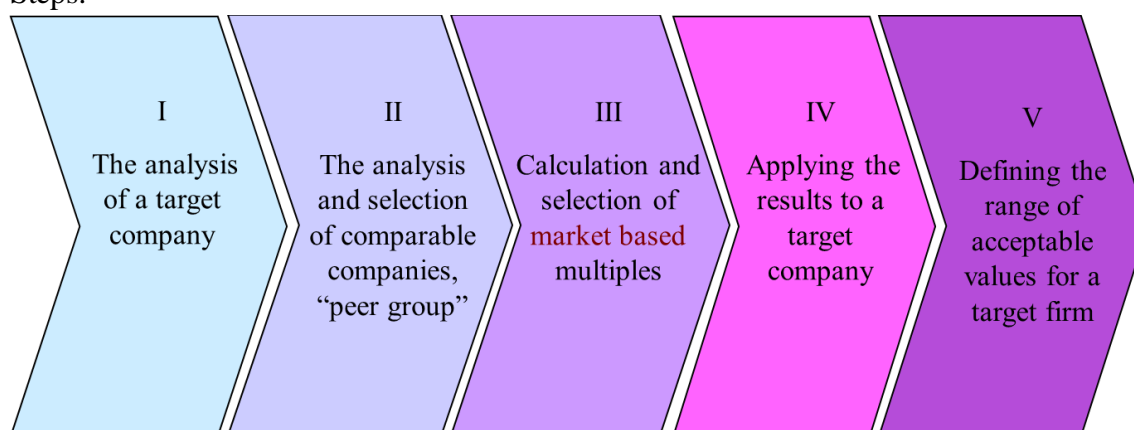
From the constant growth method, we have obtained the present value is \$153.74, and the PV from multistage growth is 67.65. At the end of December 2016, the stock price is 73.71, and at the day of this report, June 29th, 2017, the stock price is 69.15. We can see that the constant growth method is more optimist whereas the multistage growth is more similar to the actual trading price.

Multiples methods

The multiples methods of valuation consist the selection of multiples and peers (listed companies). To improve the accuracy of this method, the selected peers should have similar size and business structure with quite comparable profitability, and of cause in the same industry

Step of Multiples Methods

Steps:



Source: Corporate finance ppt, Universitat de Barcelona.

To choose the peers companies, we should consider not only their internal factor but also the external factors, and select 3 or 4 significant comparable target firms. From the ranking of 10 best-selling US cereals breakfast brands, we have found out that the main competitors for Kellogg are GENERAL MILLS and POST HOLDINGS. Besides, the giant Swiss company Nestlé plays an important role in cereals industry, although it doesn't concentrate on cereals products. Quaker Oat was considered as a strong rival for Kellogg, which was acquired by PepsiCo in 2001. Here we should highlight that even though in the calculation we are taking into account the Nestlé and PepsiCo, in fact they are not as the same structure size as Kellogg, the data maybe not strongly significant. This is a limitation for determined industry where the manufacturers are highly concentrated and cross-industrial. BARBARA'S BAKERY and Weetabix limited are also the main manufacturers of breakfast cereals, but are not traded in USA stock market, unfortunately we couldn't get more information, which is another limitation of this valuation method.

Table 9. Multiples Valuation via Peers' Performance.

Peers of Kellogg Co:	P/sales	P/CF	P/tang. BV	EV/sales	EV/EBITDA
General Mills Inc (USD)	2,2	14,9	8	2,7	13,7
Post holdings Inc (USD)	1,1	20,3	1,7	1,7	10,1
Nestle SA (USD,CHF)	2,9	16,6	4	2,8	15,5
PepsiCo Inc (USD)	2,7	17	14,4	2,8	14,1
Campbell Soup Co (USD)	2,2	12,9	11,9	2,9	14,3
JM Smucker Co (USD)	2,1	13,4	2,1	2,5	13,2
Mead Johnson Nutrition Co (USD)	4,5	22,9	-	3,8	15,2
The Kraft Heinz Co (USD)	4,4	23,8	2	4,1	14,6
McCormick & Co Inc (USD)	3	21,4	7,6	3,3	18,9
Average (first four)	2,23	17,20	4,57	2,51	13,37
Kellogg Co	sales revenues/share	Cash flow/share	tang.BV/share	sales revenues	EBITDA
estimated 2016	\$36,76	\$3,17	\$18,40	\$13.014.000.000,00	\$1.850.000.000,00
estimated value per share	\$81,80	\$54,47	\$84,01		
estimated enterprise value				\$32.623.413.787,79	\$24.729.853.125,46
estimated equity value from the enterprise value				\$25.136.413.787,79	\$17.242.853.125,46
estimated value per share				\$71,01	\$48,71
estimated price per share	\$68,00				
comparison with the market price	-8%				

Source: Own elaboration

1. P/sales: A valuation ratio that shows the stock price and sales revenue's relation. It's also called sales multiple
2. P/CF: Price-cashflow ratio is also called price multiples, which is commonly used to measure the equity value of the company and the ability to generate cash during the operation.
3. P/Tangible BV: Price to tangible book value is a valuation ratio that shows the relationship between the price of security and the tangible book value that shows in the balance sheet of the companies. High PTBV mostly means that the investors will suffer greater share price losses.
4. EV: Enterprise value. It's one of the method to evaluate the company. It is calculating based on the market capitalization (N° of outstanding shares*stock price) and adding the plus debt, preferred shares and minority interest, subtracting the cash and cash equivalents (Which can be used to pay the debt). The debt is included in calculation because when the company is sold, the new holder should also take charge of this debt,
5. EV/sales: Enterprise value to sales ratio. The lower is this ratio is, the more attractive for the investors it becomes, because the company might be undervalued and the stock price will increase in coming periods.
6. EV/EBITDA: "Enterprise value to EBITDA, it's positively related to the growth rate in free cash flow to the firm (FCFF) and negatively related to the firm's overall risk level and weighted average cost of capital (WACC)." (Investopedia, 2017).

The first 4 firms are close competitors for Kellogg. In the P/Tang Bv ratio, since PepsiCo is an outlier, we subtract it and just calculate the average rate of the first 3 companies. The data is collected from the 2016 financial statement (CURRENT VALUE) via Morningstar.

Estimated value per share via PER is the average of the industry peers (Multiples) multiplied by the Sales/share, and this results in \$81.80. With the same method, we have obtained the range of estimated value for equity share, which is from \$48.71 to \$84.01. The estimated price through enterprise value usually shows the lowest one.

Table 10. Summary of Kellogg.Co's Balance Sheet.

		31/12/2016
N Shares outstanding		\$354.000.000,00
ST debt		\$1.069.000.000,00
LT debt		\$6.698.000.000,00
Cash and eq		\$280.000.000,00
market price per share at 30/12/2016		\$73,71
estimated price per share		\$68,00
comparison with the market price		-8%

Source: Own elaboration using NASDAQ data.

From the enterprise value, we have to apply the adjustment related to the holding debt and cash, and then the estimated value per share can be calculated by dividing the N° of outstanding shares. Finally we have reached the final estimated value by calculating the average of the previous 5 estimated values from different via.

The estimated price per share is **\$68**, the stock price of Kellogg at the 30th of December is **\$73.71**. If we have a look on the current stock price of Kellogg, today it's traded at \$69.15, which is quite similar to what we have estimated via the Multiples approach.

Closure

Table 11. Comparison of the three Estimated Methods.

30 th December 2016	\$76,81
29 th June 2017 Current market value	\$69,15
Constant dividend estimated value	\$153,74
Multistage dividend estimated value	\$67,65
Estimated multiples method	\$68

Source: Own elaboration using Morningstar data

By observing the fluctuation of stock price, we can see the price is approximately situated around the estimated multiples method, which reflects more accuracy about the sector development. However, since the Gordon-Shapiro ratio is affected sensitively by the g factors, if the company want to improve their share price, they should maintain a stable and constant growth rate.

IV. VALUATION: THE METHOD OF DISCOUNTED CASH FLOWS

In this part, we are estimated the value of Kellogg by using the discounted cash flow (DCF) approach. The DCF method is used by the potential investors to check the attractiveness of firm. The cash flow shows the ability of the firm to make cash, which is one of the common ways to measure the firm's performance. The investors are more cautious about "Whether the company can obtain cash" and "How much money can the company make in the coming 5 years" before making the decision. Because of that, this approach intends to show the present value of firm by estimating future free cash flows, and tries to give them a proposed price comparing the exist stock price. If the estimation is higher than the current one, it might be a good sign for investors.

Obtaining the free cash flows

$$PV_0 = \sum_{j=1}^n \frac{CF_j}{(1+r)^j} + \frac{PV_n}{(1+r)^n}$$

PV cash flows
PV continuation value

First of all, we should obtain the EBIT from Kellogg's statements. (We collected all the information from Morningstar and NASDAQ).

The general formula we use:

Sales (Revenue)

-Totals operating costs

=Earnings before interests & taxations & Depreciation and amortization (EBITDA)

-Depreciations & Amortization

=Earnings before interests & taxations (EBIT)

(Addition: Calculate the taxation)

Table 12. Short view of Kellogg's Income statement.

(in millions)	2013	2014	2015	2016
Sales	14792	14580	13525	13014
% growth		-1,4%	-7,2%	-3,8%
Total costs	-11419	-13043	-11991	-11164
% sales	77,2%	89,5%	88,7%	85,8%
EBITDA	3373	1537	1534	1850
%margin	22,8%	10,5%	11,3%	14,2%
Depreciation	-532	-503	-534	-517
%Sales	3,6%	3,4%	3,9%	4,0%
EBIT	2841	1034	1000	1333
%taxes	30,39%	22,55%	20,57%	25,13%
Taxes	-863	-233	-206	-335

Source: Own elaboration using Morningstar data

We have observed that the sales decreased during the last 4 years, and in 2013 the total cost reduced a lot, which is because of the closing of 40 distribution centers and the dismissal 1000 employees in that year. However, the EBITDA margin started recovering in the last year, which can be an advantage in the continuous development of Kellogg in the coming years. Depreciation nearly maintains the same percentage. Then, we have also found out that, considering the change of financial structure, for the debt the tax is deductible, the taxation varies from each year. Average percentage is around 24,66%.

From the EBIT we can calculate the NOPAT, Net operating profit after tax. For some economists, the NOPAT is more accurate than net income in reflecting a company's efficiency at cash earnings, the main reason is that it doesn't include tax savings of existing leverage. Therefore, the simple calculation for NOPAT is: $NOPAT = EBIT - \text{Income Taxes}$

The NOPAT from 2013 to 2016 is:

NOPAT	1.978	801	794	998
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From the NOPAT we are closer to the free cash flow. Depreciation & amortization should be added to NOPAT in order to calculate the free cash flow, because they are not representing a cash transaction, just the estimated intangible cost over the useful life of assets.

Then we should subtract the change in WC and Fixed assets, because both are the cash out of the company.

The general formula is:

Net Operating Income after tax (NOPAT) = EBIT x (1-t)
+ Depreciations & Amortization, provisions for depreciations
- Net investment in Working Capital (change in WC)
- Net capital expenditure (change in gross fixed assets)
FREE CASH FLOWS TO ENTITY (FIRM) (FCFe)

Table 13. Free Cash Flow Calculation (2013-2016).

NOPAT	1.978	801	794	998
Depreciation & Amortization:	532	503	534	517
Increase/Decrease Working Capital	-104	55	29	46
% sales	1%	-0,4%	-0,2%	-0,4%
Investment in Fixed Assets	-1236	-148	-219	-220
% sales	8,4%	1,0%	1,6%	1,7%
Free Cash Flow to entity	1.170	1.211	1.138	1.341

Source: Own elaboration

Forecast

As we have mentioned in the previous part, Kellogg Co is trying to increase its revenue by 2020, and reducing costs in the same time. After calculating the average growth of sales (Negative), we assume that they have endeavoured to change this situation, then we apply a 2,5% plus to this average growth, and by 2019, they could obtain an annual growth of 3%, which might be able to keep it for the future. For the EBITDA we also apply a 0,80% plus to the average margin, not only because the margin should be increased at the same time due to economic scales, but also in the latest report of their CEO, where he emphasized the importance of cost reduction in upcoming operating periods.

Table 14. Income Statement Forecasting (2017-2021)

	Forecast period				
	2017	2018	2019	2020	2021
Sales	12.799	12.908	13.341	13.788	14.250
% growth	-1,6%	0,9%	3,4%	3,4%	3,4%
		Maintaining the g%			
Total costs	-10.812	-10.801	-11.056	-11.316	-11.582
% sales	84,5%	84,5%	84,5%	84,5%	84,5%
EBITDA	1.987	2.107	2.285	2.472	2.668
% margin	15,5%	16,3%	17,1%	17,9%	18,7%
		PLUS 0,80%			

Source: Own elaboration

* for forecasts we took the average of these 4 years and adding an extra g factor, due to in the latest report of Kellogg, they are trying to reform the business structure, and try to have a great increment of sales before 2010.

The forecasted cash flows are:

Table 15. Cash Flow Forecasting.

	2017	2018	2019	2020	2021
NOPAT	1.136	1.224	1.345	1.473	1.609
Depreciation & Amortization:	479	483	499	516	533
Increase/Decrease Working Capital	8	8	8	8	9
% sales	-0,1%	-0,1%	-0,1%	-0,1%	-0,1%
Investment in Fixed Assets	-185	-186	-192	-199	-205
% sales	1%	1%	1%	1%	1%
Free Cash Flow to entity	1.438	1.529	1.660	1.799	1.945
WACC					
Discount Period	1	2	3	4	5
Discount Factor	1,05	1,10	1,16	1,22	1,28
Present value of free cash flow	1.369	1.385	1.432	1.478	1.521

Source: Own elaboration

Applying the Discounted Cash Flows method

Because we are using the cash flow available for the entity, we need to apply the discount factor for FCF, the WACC that we have obtained from the part II(5,04%).

The continuity value is obtained by considering growth factor in perpetuity, here we assume that g is 3%. The result is 98205 at 2021, and we bring it to the present by applying the discount factor 5,04% (WACC). We obtain a present value of future perpetuity cashflow, 76800.

The firm's value is the sum of all these 5 estimated Cash flows at present value. Here we should subtract the net debt (Debt is not included in the equity of company, and cash & equivalent could be used to pay out the debt) to obtain the Equity value.

By dividing the existing outstanding shares at 30th of December of 2016, we have estimated the share price is near to 73.42, which is quite similar to the real stock price at that moment.

Table 16. Estimated Valuation via Cash-flow forecasting.

Enterprise value	83.986
Less: Total debt	7.767
Plus: Cash and Cash Equi.	280
Net Debt	7.487
Implied Equity Value	76.499
Outstanding shares	1.041,96
Implied share price	73,42

Source: Own elaboration

Sensitivity analysis

Sensitivity analysis is useful for the company, because it shows the dependence of each factor towards the out-put, in our case, the stock price. It also gives the manager of the company or investor how much margin do we have if we want to push the price up.

In our case it's not possible to obtain the similar answer for the EBITDA margin and sales growth, because of the reforming of structure and the improvement of marketing activities for the next 2 years. With that in mind, we have applied an additional sales % increase and EBITDA % increase in the calculation, therefore, for approximately 5 years, the growth and EBITDA rate will not be a fixed or stable rate, which means it's more complex to analyze the impact for these 2 factors. (The sensitivity analysis here is not representable).

In the analysis of g and WACC, we are situated in the 73\$ price range with WACC equal to 5% and g equal to 3%. It's obvious that in our case, the reduction of WACC can push up strongly the stock price. Higher WACC means higher riskiness, which will difficult the capture of new investors. We can also see that the lower the WACC, the stronger the impact the growth rate has on the value of the company.

See the table below for the sensitivity results:

Table 17. Sensitive Analysis (Growth rate-WACC).

		Growth rate , g			
		2,0%	2,5%	3,0%	3,2%
WACC	3,5%	107	161	324	541
	4,0%	89	105	158	198
	4,5%	61	77	103	119
	5,0%	49	59	73	82
	5,5%	41	48	58	64
	6,0%	35	40	47	51

Source: Own elaboration

V CONCLUSIONS

To sum up, Kellogg Co. has a WACC of 5,04% and a Beta of 0,47, which means that the company is safer than the market. Despite that, Kellogg's recent situation has increased the riskiness of the company. The decrease in sales and income raises some doubts about the future of the company. To counter that, the firm has elaborated an ambitious plan to boost sales and reduce costs. Said plan though, has had to be toned down and delayed until now given the financial situation of the company.

During recent years, Kellogg's has been forced to ask for loans in order to stay in business in a competitive way. The leverage ratio (see Table 3) indicates that this debt borrowing is beneficial for the company (for now). But it also increases the sensitivity of the firm against the cost of debt, potentially altering the WACC and ultimately the value of the company.

Table 18. Comparison of the different valuation methods.

		Difference with December 31st, 2016	Difference with June 29th, 2017
Price as of 31st of December of 2016	\$ 76,81	\$ -	\$ 7,66
Price as of 29th of June of 2017	\$ 69,15	\$ -7,66	\$ -
Constant dividend method	\$ 153,74	\$ 76,93	\$ 84,59
Multistage dividend method	\$ 67,65	\$ -9,16	\$ -1,50
Estimated multiples method	\$ 68,00	\$ -8,81	\$ -1,15
Discounted Cash Flow method	\$ 73,42	\$ -3,39	\$ 4,27

Source: Own elaboration

From looking at the table above, we can extract some conclusions. The DCF method is the closest one to the value of the 31st of December, whereas the Multiples method is the one that approximates better the value of the company for the 29th of June value. We have to consider that on June the trading prices have fallen considerably. We do not know if this event will be permanent or if it will revert. If it reverts, the value will go back to a value close to the DCF one, but if it doesn't, the multiples will still be the better choice. We can conclude that the multiples method is suitable for risk-averse investors, since the general industry performance strongly reflects the company's development tendency. The DCF though, takes into consideration the special situation of the company, but it also relies heavily on what the company says. If the company fails to deliver, the DCF value will be far off the real value.

Ultimately, Kellogg's strategic plan for boosting sales and reducing costs must be implemented successfully. Failure to do so will lead to a worsening in the growth rate (g) due to the lack of a sales growth and an increased cost of debt due to the rise in debt for covering the increasing inefficient costs, which will lead to an increase in WACC. A lower growth rate combined with a higher WACC will greatly reduce the value of the company.

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APPENDIX A

Table 1: Profit & Loss statement in \$ (Kellogg Co).

P&L (values in '000s)					
Period Ending:	Trend	12/31/2016	01/02/2016	01/03/2015	12/28/2013
Total Revenue		13014000	13525000	14580000	14792000
Cost of Revenue		8259000	8844000	9517000	8689000
Gross Profit		4755000	4681000	5063000	6103000
Operating Expenses					
Research and Development		0	0	0	0
Sales, General and Admin.		3360000	3590000	4039000	3266000
Non-Recurring Items		0	0	0	0
Other Operating Items		0	0	0	0
Operating Income		1395000	1091000	1024000	2837000
Add'l income/expense items (-)		-62000	-91000	10000	4000
Earnings Before Interest and Tax		1333000	1000000	1034000	2841000
Interest Expense		406000	227000	209000	235000
Earnings Before Tax		927000	773000	825000	2606000
Income Tax		233000	159000	186000	792000
Minority Interest (-)		-1000	0	-1000	-1000
Equity Earnings/Loss Unconsolidated Subsidiary (-)		1000	0	-6000	-6000
Net Income-Cont. Operations		694000	614000	632000	1807000
Net Income		694000	614000	632000	1807000
Net Income Applicable to Common Shareholders		694000	614000	632000	1807000

Source: NASDAQ

Table 2: Balance Sheet in \$ (Kellogg Co).

Balance sheet (numbers in '000s)					
Period Ending:	Trend	12/31/2016	01/02/2016	01/03/2015	12/28/2013
Current Assets					
Cash and Cash Equivalents		\$280,000	\$251,000	\$443,000	\$273,000
Short-Term Investments		\$0	\$0	\$0	\$0
Net Receivables		\$1,231,000	\$1,344,000	\$1,276,000	\$1,424,000
Inventory		\$1,238,000	\$1,250,000	\$1,279,000	\$1,248,000
Other Current Assets		\$191,000	\$391,000	\$342,000	\$322,000
Total Current Assets		\$2,940,000	\$3,236,000	\$3,340,000	\$3,267,000
Long-Term Assets					
Long-Term Investments		\$438,000	\$456,000	\$1,000	\$0
Fixed Assets		\$3,569,000	\$3,621,000	\$3,769,000	\$3,856,000
Goodwill		\$5,166,000	\$4,968,000	\$4,971,000	\$5,051,000
Intangible Assets		\$2,369,000	\$2,268,000	\$2,295,000	\$2,367,000
Other Assets		\$629,000	\$702,000	\$777,000	\$933,000
Deferred Asset Charges		\$0	\$0	\$0	\$0
Total Assets		\$15,111,000	\$15,251,000	\$15,153,000	\$15,474,000
Current Liabilities					
Accounts Payable		\$2,014,000	\$1,907,000	\$1,528,000	\$1,432,000
Short-Term Debt / Current Portion of Long-Term Debt		\$1,069,000	\$2,470,000	\$1,435,000	\$1,028,000
Other Current Liabilities		\$1,391,000	\$1,362,000	\$1,401,000	\$1,375,000
Total Current Liabilities		\$4,474,000	\$5,739,000	\$4,364,000	\$3,835,000
Long-Term Debt		\$6,698,000	\$5,275,000	\$5,935,000	\$6,330,000
Other Liabilities		\$1,488,000	\$1,414,000	\$1,277,000	\$774,000
Deferred Liability Charges		\$525,000	\$685,000	\$726,000	\$928,000
Misc. Stocks		\$0	\$0	\$0	\$0
Minority Interest		\$16,000	\$10,000	\$62,000	\$62,000
Total Liabilities		\$13,201,000	\$13,123,000	\$12,364,000	\$11,929,000
Stock Holders Equity					
Common Stocks		\$105,000	\$105,000	\$105,000	\$105,000
Capital Surplus		\$806,000	\$745,000	\$678,000	\$626,000
Retained Earnings		\$6,571,000	\$6,597,000	\$6,689,000	\$6,749,000
Treasury Stock (-)		(\$3,997,000)	(\$3,943,000)	(\$3,470,000)	(\$2,999,000)
Other Equity (-)		(\$1,575,000)	(\$1,376,000)	(\$1,213,000)	(\$936,000)
Total Equity		\$1,910,000	\$2,128,000	\$2,789,000	\$3,545,000
Total Liabilities & Equity		\$15,111,000	\$15,251,000	\$15,153,000	\$15,474,000

Source: NASDAQ

Table 3: Kellogg Co and NYSE historic data in \$

Kellogg		
Date	Close	Return %
Dec 26, 2016	73,71	0,19
Dec 19, 2016	73,57	0,38
Dec 12, 2016	73,29	0,25
Dec 05, 2016	73,11	2,65
Nov 28, 2016	71,17	-4,2
Nov 21, 2016	74,16	1,47
Nov 14, 2016	73,07	0,78
Nov 07, 2016	72,5	-1,61
Oct 31, 2016	73,67	-1,3
Oct 24, 2016	74,63	0,39
Oct 17, 2016	74,34	-1,55
Oct 10, 2016	75,49	-1,13
Oct 03, 2016	76,34	-1,48
Sep 26, 2016	77,47	-0,31
Sep 19, 2016	77,71	-0,4
Sep 12, 2016	78,02	1,14
Sep 05, 2016	77,13	-6,86
Aug 29, 2016	82,42	0,06
Aug 22, 2016	82,37	-0,81
Aug 15, 2016	83,04	-0,59
Aug 08, 2016	83,53	0,98
Aug 01, 2016	82,71	0

NYSE		
Date	Close	Return %
Dec 26, 2016	11.056,90	-0,65
Dec 19, 2016	11.128,80	0,03
Dec 12, 2016	11.125,22	-0,6
Dec 05, 2016	11.191,79	3,16
Nov 28, 2016	10.838,58	-0,36
Nov 21, 2016	10.878,09	1,55
Nov 14, 2016	10.709,51	0,53
Nov 07, 2016	10.652,24	3,41
Oct 31, 2016	10.289,35	-1,82
Oct 24, 2016	10.476,62	-0,91
Oct 17, 2016	10.571,88	0,48
Oct 10, 2016	10.521,30	-1
Oct 03, 2016	10.626,92	-0,89
Sep 26, 2016	10.721,74	0,03
Sep 19, 2016	10.717,99	1,73
Sep 12, 2016	10.532,27	-0,77
Sep 05, 2016	10.613,53	-2,29
Aug 29, 2016	10.856,92	0,99
Aug 22, 2016	10.749,33	-0,74
Aug 15, 2016	10.829,15	0,06
Aug 08, 2016	10.822,41	0,37
Aug 01, 2016	10.782,87	-0,02

Jul 25, 2016	82,71	-0,18
Jul 18, 2016	82,86	-3,78
Jul 11, 2016	85,99	3,9
Jul 04, 2016	82,64	1,26
Jun 27, 2016	81,6	5,4
Jun 20, 2016	77,19	0,54
Jun 13, 2016	76,77	-1,76
Jun 06, 2016	78,12	3,83
May 30, 2016	75,13	0,85
May 23, 2016	74,49	0,26
May 16, 2016	74,3	-3,89
May 09, 2016	77,19	2,81
May 02, 2016	75,02	-2,39
Apr 25, 2016	76,81	1,99
Apr 18, 2016	75,28	-3,02
Apr 11, 2016	77,55	0,39
Apr 04, 2016	77,25	-0,79
Mar 28, 2016	77,86	3,11
Mar 21, 2016	75,44	-0,95
Mar 14, 2016	76,16	0,83
Mar 07, 2016	75,53	0,4
Feb 29, 2016	75,23	2,37
Feb 22, 2016	73,45	-2,82
Feb 15, 2016	75,52	0,73
Feb 08, 2016	74,97	4,18
Feb 01, 2016	71,84	-2,23
Jan 25, 2016	73,44	2,49

Jul 25, 2016	10.785,51	-0,18
Jul 18, 2016	10.805,04	0,3
Jul 11, 2016	10.773,12	1,87
Jul 04, 2016	10.571,78	0,53
Jun 27, 2016	10.515,76	3,16
Jun 20, 2016	10.183,51	-1,61
Jun 13, 2016	10.347,94	-0,95
Jun 06, 2016	10.446,10	-0,4
May 30, 2016	10.487,94	0,18
May 23, 2016	10.469,52	2,09
May 16, 2016	10.250,49	0,22
May 09, 2016	10.228,06	-0,79
May 02, 2016	10.308,83	-1,24
Apr 25, 2016	10.436,92	-0,71
Apr 18, 2016	10.511,00	1,48
Apr 11, 2016	10.355,57	2,28
Apr 04, 2016	10.119,69	-0,99
Mar 28, 2016	10.219,96	1,3
Mar 21, 2016	10.086,60	-1,36
Mar 14, 2016	10.223,43	1,17
Mar 07, 2016	10.104,19	1,34
Feb 29, 2016	9.968,41	3,5
Feb 22, 2016	9.619,79	1,39
Feb 15, 2016	9.485,96	2,7
Feb 08, 2016	9.229,68	-1,74
Feb 01, 2016	9.390,33	-2,58
Jan 25, 2016	9.632,70	2,14

2016		
Jan 18, 2016	71,61	1,31
Jan 11, 2016	70,67	-1,15
Jan 04, 2016	71,48	-1,11
Dec 28, 2015	72,27	-0,83
Dec 21, 2015	72,87	2,87
Dec 14, 2015	70,78	0,92
Dec 07, 2015	70,13	-0,07
Nov 30, 2015	70,18	1,3
Nov 23, 2015	69,27	4,36
Nov 16, 2015	66,25	0,24
Nov 09, 2015	66,09	-2,78
Nov 02, 2015	67,93	-3,81
Oct 26, 2015	70,52	-1,67
Oct 19, 2015	71,7	2,66
Oct 12, 2015	69,79	0,5
Oct 05, 2015	69,44	2,92
Sep 28, 2015	67,41	-1,2
Sep 21, 2015	68,22	1,13
Sep 14, 2015	67,45	0,68
Sep 07, 2015	66,99	0,61
Aug 31, 2015	66,58	-0,69
Aug 24, 2015	67,04	-0,63
Aug 17, 2015	67,46	-3,42
Aug 10, 2015	69,77	1,22

2016		
Jan 18, 2016	9.426,91	1,35
Jan 11, 2016	9.299,62	-2,46
Jan 04, 2016	9.528,77	-6,45
Dec 28, 2015	10.143,42	-1,14
Dec 21, 2015	10.258,55	2,84
Dec 14, 2015	9.967,64	-0,09
Dec 07, 2015	9.976,65	-4,33
Nov 30, 2015	10.408,86	-0,4
Nov 23, 2015	10.450,53	0,06
Nov 16, 2015	10.444,20	2,77
Nov 09, 2015	10.155,07	-3,53
Nov 02, 2015	10.513,36	0,5
Oct 26, 2015	10.460,96	-0,44
Oct 19, 2015	10.506,51	0,81
Oct 12, 2015	10.421,91	0,58
Oct 05, 2015	10.361,26	3,74
Sep 28, 2015	9.973,56	1,17
Sep 21, 2015	9.857,26	-1,77
Sep 14, 2015	10.031,60	-0,09
Sep 07, 2015	10.040,22	1,68
Aug 31, 2015	9.871,86	-3,75
Aug 24, 2015	10.242,06	0,45
Aug 17, 2015	10.195,69	-5,75
Aug 10, 2015	10.782,24	0,18

Aug 03, 2015	68,92	3,99
Jul 27, 2015	66,17	2,46
Jul 20, 2015	64,54	0,29
Jul 13, 2015	64,35	0,93
Jul 06, 2015	63,75	0,96
Jun 29, 2015	63,14	0,14
Jun 22, 2015	63,05	-0,46
Jun 15, 2015	63,34	1,91
Jun 08, 2015	62,13	1,09
Jun 01, 2015	61,45	-2,15
May 25, 2015	62,77	-1,45
May 18, 2015	63,68	-2,43
May 11, 2015	65,23	2,48
May 04, 2015	63,61	-0,44
Apr 27, 2015	63,89	0,25
Apr 20, 2015	63,73	-1,04
Apr 13, 2015	64,39	-2,08
Apr 06, 2015	65,73	-0,99
Mar 30, 2015	66,38	3,83
Mar 23, 2015	63,84	-0,38
Mar 16, 2015	64,08	3,01
Mar 09, 2015	62,15	-0,51
Mar 02, 2015	62,47	-3,22
Feb 23, 2015	64,48	0,6
Feb 16, 2015	64,09	1,39
Feb 09, 2015	63,2	-4,83
Feb 02, 2015	66,25	1,01

Aug 03, 2015	10.763,15	-1,11
Jul 27, 2015	10.882,28	1,47
Jul 20, 2015	10.721,95	-2,47
Jul 13, 2015	10.987,17	1,21
Jul 06, 2015	10.853,92	-0,1
Jun 29, 2015	10.864,82	-1,62
Jun 22, 2015	11.040,31	0,01
Jun 15, 2015	11.038,96	0,26
Jun 08, 2015	11.009,91	0,28
Jun 01, 2015	10.979,33	-0,7
May 25, 2015	11.056,30	-1,28
May 18, 2015	11.197,69	-0,27
May 11, 2015	11.228,35	0,28
May 04, 2015	11.196,50	0,5
Apr 27, 2015	11.140,36	-0,47
Apr 20, 2015	11.192,93	1,2
Apr 13, 2015	11.058,45	-0,49
Apr 06, 2015	11.112,68	1,44
Mar 30, 2015	10.953,16	0,71
Mar 23, 2015	10.875,14	-1,8
Mar 16, 2015	11.070,53	2,89
Mar 09, 2015	10.751,02	-0,85
Mar 02, 2015	10.842,17	-2,03
Feb 23, 2015	11.062,79	-0,41
Feb 16, 2015	11.108,67	0,59
Feb 09, 2015	11.042,69	1,77
Feb 02, 2015	10.847,51	2,86

2015		
Jan 26, 2015	65,58	-4,73
Jan 19, 2015	68,68	0,82
Jan 12, 2015	68,12	2,48
Jan 05, 2015	66,43	1,43
Dec 29, 2014	65,48	-2,34
Dec 22, 2014	67,01	0,28
Dec 15, 2014	66,82	1,78
Dec 08, 2014	65,63	-1,17
Dec 01, 2014	66,4	0,23
Nov 24, 2014	66,25	1,18
Nov 17, 2014	65,47	2,54
Nov 10, 2014	63,81	0,24
Nov 03, 2014	63,66	-0,47
Oct 27, 2014	63,96	3,16
Oct 20, 2014	61,94	1,65
Oct 13, 2014	60,92	1,02
Oct 06, 2014	60,3	-1,48
Sep 29, 2014	61,19	-0,92
Sep 22, 2014	61,75	-1,47
Sep 15, 2014	62,66	-1,96
Sep 08, 2014	63,89	-2,05
Sep 01, 2014	65,2	0,35
Aug 25, 2014	64,97	1,03
Aug 18, 2014	64,3	0,03

2015		
Jan 26, 2015	10.537,22	-2,38
Jan 19, 2015	10.788,33	1,19
Jan 12, 2015	10.660,32	-0,48
Jan 05, 2015	10.711,41	-1,12
Dec 29, 2014	10.830,92	-1,43
Dec 22, 2014	10.985,40	0,87
Dec 15, 2014	10.890,24	3,58
Dec 08, 2014	10.500,51	-4,47
Dec 01, 2014	10.970,26	0,14
Nov 24, 2014	10.955,41	-0,64
Nov 17, 2014	11.025,74	1,32
Nov 10, 2014	10.880,63	0,15
Nov 03, 2014	10.864,58	0,18
Oct 27, 2014	10.845,00	2,42
Oct 20, 2014	10.582,62	3,14
Oct 13, 2014	10.250,54	-0,42
Oct 06, 2014	10.293,14	-3,33
Sep 29, 2014	10.635,49	-1,54
Sep 22, 2014	10.798,88	-1,77
Sep 15, 2014	10.989,57	0,71
Sep 08, 2014	10.911,39	-1,48
Sep 01, 2014	11.073,41	0,24
Aug 25, 2014	11.046,29	0,9
Aug 18, 2014	10.947,33	1,38

Aug 11, 2014	64,28	1,62
Aug 04, 2014	63,24	2,85
Jul 28, 2014	61,44	-6,4
Jul 21, 2014	65,37	-1,22
Jul 14, 2014	66,17	0,33
Jul 07, 2014	65,95	-0,7
Jun 30, 2014	66,41	2,18
Jun 23, 2014	64,96	-3,51
Jun 16, 2014	67,24	0,04
Jun 09, 2014	67,21	-2,53
Jun 02, 2014	68,91	-0,1
May 26, 2014	68,98	2,06
May 19, 2014	67,56	0,03
May 12, 2014	67,54	0,49
May 05, 2014	67,21	2,4
Apr 28, 2014	65,6	-1,69
Apr 21, 2014	66,71	0,55
Apr 14, 2014	66,34	0,99
Apr 07, 2014	65,68	2,91
Mar 31, 2014	63,77	2,57
Mar 24, 2014	62,13	0,89
Mar 17, 2014	61,58	1,1
Mar 10, 2014	60,9	-1,15
Mar 03, 2014	61,6	1,48
Feb 24, 2014	60,69	1,22
Feb 17, 2014	59,95	-0,4
Feb 10, 2014	60,19	3,04

Aug 11, 2014	10.796,04	0,97
Aug 04, 2014	10.691,10	-0,01
Jul 28, 2014	10.692,17	-2,75
Jul 21, 2014	10.985,81	0
Jul 14, 2014	10.985,92	0,45
Jul 07, 2014	10.936,35	-1,54
Jun 30, 2014	11.104,72	1,17
Jun 23, 2014	10.974,43	-0,4
Jun 16, 2014	11.018,11	1,47
Jun 09, 2014	10.856,22	-0,44
Jun 02, 2014	10.904,22	1,36
May 26, 2014	10.756,31	0,69
May 19, 2014	10.681,87	0,74
May 12, 2014	10.603,18	-0,03
May 05, 2014	10.606,69	-0,22
Apr 28, 2014	10.629,99	1,18
Apr 21, 2014	10.505,01	-0,26
Apr 14, 2014	10.532,83	2,39
Apr 07, 2014	10.280,94	-2,3
Mar 31, 2014	10.517,05	0,78
Mar 24, 2014	10.434,87	0,41
Mar 17, 2014	10.392,22	1,03
Mar 10, 2014	10.285,08	-2,21
Mar 03, 2014	10.511,91	0,82
Feb 24, 2014	10.425,86	1,14
Feb 17, 2014	10.306,90	0,24
Feb 10, 2014	10.282,53	2,21

2014		
Feb 03, 2014	58,36	0,65
Jan 27, 2014	57,98	-3,19
Jan 20, 2014	59,83	-1,07
Jan 13, 2014	60,47	-0,51
Jan 06, 2014	60,78	0,33
Dec 30, 2013	60,58	-0,66
Dec 23, 2013	60,98	0,75
Dec 16, 2013	60,52	0,03
Dec 09, 2013	60,5	-1,88
Dec 02, 2013	61,64	1,62
Nov 25, 2013	60,64	-3,02
Nov 18, 2013	62,47	-0,22
Nov 11, 2013	62,61	0,67
Nov 04, 2013	62,19	-0,16
Oct 28, 2013	62,29	-0,22
Oct 21, 2013	62,43	1,57
Oct 14, 2013	61,45	1,12
Oct 07, 2013	60,76	2,3
Sep 30, 2013	59,36	0,57
Sep 23, 2013	59,02	-2,63
Sep 16, 2013	60,57	-0,12
Sep 09, 2013	60,64	0,68
Sep 02, 2013	60,23	-0,8
Aug 26, 2013	60,71	-3,33

2014		
Feb 03, 2014	10.055,34	0,87
Jan 27, 2014	9.967,65	-0,67
Jan 20, 2014	10.034,44	-3,08
Jan 13, 2014	10.343,46	-0,27
Jan 06, 2014	10.371,13	0,72
Dec 30, 2013	10.296,77	-0,55
Dec 23, 2013	10.353,22	1,52
Dec 16, 2013	10.196,07	2,37
Dec 09, 2013	9.954,84	-1,77
Dec 02, 2013	10.131,21	-0,51
Nov 25, 2013	10.183,23	-0,22
Nov 18, 2013	10.205,72	0,16
Nov 11, 2013	10.189,80	1,55
Nov 04, 2013	10.032,14	0,14
Oct 28, 2013	10.018,15	-0,36
Oct 21, 2013	10.053,86	0,69
Oct 14, 2013	9.984,63	2,23
Oct 07, 2013	9.761,76	0,88
Sep 30, 2013	9.675,71	-0,09
Sep 23, 2013	9.684,17	-0,88
Sep 16, 2013	9.769,73	1,38
Sep 09, 2013	9.635,08	2,03
Sep 02, 2013	9.439,69	1,79
Aug 26, 2013	9.270,66	-2,2

Aug 19, 2013	62,73	-0,35
Aug 12, 2013	62,95	-4,34
Aug 05, 2013	65,68	0,69
Jul 29, 2013	65,23	-2,68
Jul 22, 2013	66,98	-0,51
Jul 15, 2013	67,32	1,22
Jul 08, 2013	66,5	1,74
Jul 01, 2013	65,34	1,7
Jun 24, 2013	64,23	1,53
Jun 17, 2013	63,25	-1,57
Jun 10, 2013	64,24	1,32
Jun 03, 2013	63,39	2,11
May 27, 2013	62,05	-3,87
May 20, 2013	64,45	-1,88
May 13, 2013	65,66	2,09
May 06, 2013	64,29	0,98
Apr 29, 2013	63,66	-3,2
Apr 22, 2013	65,7	-0,61
Apr 15, 2013	66,1	2,12
Apr 08, 2013	64,7	1,64
Apr 01, 2013	63,64	-1,24
Mar 25, 2013	64,43	1,61
Mar 18, 2013	63,39	1,88
Mar 11, 2013	62,2	1,09
Mar 04, 2013	61,52	1,53
Feb 25, 2013	60,58	0,94
Feb 18, 2013	60,01	0,4

Aug 19, 2013	9.474,77	0,1
Aug 12, 2013	9.465,59	-1,65
Aug 05, 2013	9.622,11	-0,71
Jul 29, 2013	9.690,07	0,72
Jul 22, 2013	9.620,13	0,02
Jul 15, 2013	9.618,50	1,25
Jul 08, 2013	9.498,50	2,99
Jul 01, 2013	9.214,17	1,1
Jun 24, 2013	9.112,69	1,03
Jun 17, 2013	9.018,54	-2,72
Jun 10, 2013	9.263,69	-0,99
Jun 03, 2013	9.355,41	0,57
May 27, 2013	9.302,27	-1,5
May 20, 2013	9.442,23	-1,42
May 13, 2013	9.576,41	1,4
May 06, 2013	9.442,76	1,08
Apr 29, 2013	9.340,46	1,83
Apr 22, 2013	9.169,90	1,92
Apr 15, 2013	8.994,12	-2,16
Apr 08, 2013	9.188,25	2,05
Apr 01, 2013	9.000,24	-1,19
Mar 25, 2013	9.107,04	0,45
Mar 18, 2013	9.065,78	-0,56
Mar 11, 2013	9.116,62	0,68
Mar 04, 2013	9.054,44	1,99
Feb 25, 2013	8.874,19	-0,23
Feb 18, 2013	8.894,63	-0,43

Feb 11, 2013	59,77	1,44
Feb 04, 2013	58,91	0,44
Jan 28, 2013	58,65	-0,32
Jan 21, 2013	58,84	1,07
Jan 14, 2013	58,21	2,04
Jan 07, 2013	57,02	0,67
Dec 31, 2012	56,64	2,31
Dec 24, 2012	55,33	-1,54
Dec 17, 2012	56,18	-0,96
Dec 10, 2012	56,72	1,32
Dec 03, 2012	55,97	0,91
Nov 26, 2012	55,46	0,36
Nov 19, 2012	55,26	1,97
Nov 12, 2012	54,17	1,27
Nov 05, 2012	53,48	-0,39
Oct 29, 2012	53,69	1,47
Oct 22, 2012	52,9	1,53
Oct 15, 2012	52,09	0,69
Oct 08, 2012	51,73	-0,43
Oct 01, 2012	51,95	0,56
Sep 24, 2012	51,66	0,41
Sep 17, 2012	51,45	2,45
Sep 10, 2012	50,19	-0,4
Sep 03, 2012	50,39	-0,52
Aug 27, 2012	50,65	-1,64

Feb 11, 2013	8.933,22	-0,02
Feb 04, 2013	8.935,23	-0,33
Jan 28, 2013	8.965,12	0,68
Jan 21, 2013	8.904,53	1,26
Jan 14, 2013	8.792,63	0,91
Jan 07, 2013	8.712,40	0,51
Dec 31, 2012	8.667,68	4,06
Dec 24, 2012	8.316,16	-1,53
Dec 17, 2012	8.443,15	1,3
Dec 10, 2012	8.333,75	0,23
Dec 03, 2012	8.314,30	0,65
Nov 26, 2012	8.260,43	0,42
Nov 19, 2012	8.225,51	3,57
Nov 12, 2012	7.931,55	-1,54
Nov 05, 2012	8.053,56	-2,25
Oct 29, 2012	8.234,91	0,54
Oct 22, 2012	8.190,20	-1,64
Oct 15, 2012	8.324,14	1,17
Oct 08, 2012	8.227,08	-1,91
Oct 01, 2012	8.384,07	1,59
Sep 24, 2012	8.251,00	-1,53
Sep 17, 2012	8.377,51	-0,97
Sep 10, 2012	8.458,87	2,65
Sep 03, 2012	8.234,51	2,67
Aug 27, 2012	8.014,93	-0,41

Aug 20, 2012	51,48	0,74
Aug 13, 2012	51,1	0,23
Aug 06, 2012	50,98	1,24
Jul 30, 2012	50,35	6,28
Jul 23, 2012	47,19	-0,95
Jul 16, 2012	47,64	-3,9
Jul 09, 2012	49,5	0,77
Jul 02, 2012	49,12	-0,43
Jun 25, 2012	49,33	0,73
Jun 18, 2012	48,97	-0,57
Jun 11, 2012	49,25	1,26
Jun 04, 2012	48,63	0,84
May 28, 2012	48,22	-4,25
May 21, 2012	50,27	-0,2
May 14, 2012	50,37	

Aug 20, 2012	8.047,87	-0,67
Aug 13, 2012	8.102,07	0,71
Aug 06, 2012	8.044,76	1,31
Jul 30, 2012	7.939,55	0,34
Jul 23, 2012	7.912,16	1,93
Jul 16, 2012	7.759,59	0,02
Jul 09, 2012	7.758,30	0,02
Jul 02, 2012	7.756,61	-0,58
Jun 25, 2012	7.801,84	2,37
Jun 18, 2012	7.616,59	-0,63
Jun 11, 2012	7.664,26	1,44
Jun 04, 2012	7.553,77	3,46
May 28, 2012	7.292,23	-3,32
May 21, 2012	7.534,33	1,41
May 14, 2012	7.427,74	

Source: NASDAQ