Income Statement Presentation and Forecasting Quality^{1*}

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Informing the IASB Standard Setting Process IAAER – KPMG Research Opportunities

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Elaine Henry ^a and Steve Yang ^{a,b} ^a Stevens Institute of Technology

^b Division of Economic and Risk Analysis, The Securities and Exchange Commission

Introduction

IFRS permit firms to classify expenses on the profit and loss statement according to either their nature or function, depending on which is more useful to the users of that financial information (IAS 1, ¶99). The standards also require additional disclosures for firms electing the by-function approach because information on the nature of expenses is considered to be useful in predicting future cash flows (IAS 1, ¶99). The recently issued Exposure Draft (hereafter "ED") continues these alternative classifications for the presentation of operating expenses and further extends the disclosures required for firms electing the by-function approach to also disclose an analysis of total operating expenses using the by-nature method (IASB, 2019 a, ¶ 68 and ¶72). Among the reasons for extending disclosures required for the by-function reporting firms, the ED's basis for conclusions refers to users' input that the by-function presentation makes it more difficult to forecast future expenses (BC111) and notes that there was no evidence of demand from users for a similar, complementary disclosure requirement for by-nature reporters (BC 114). Given the prevalence of by-function reporters such that the additional costs of extended disclosures are widespread across reporting firms,² it is important to understand the related potential benefits to users of requiring by-function reporters to provide extended disclosures.

The ED also requires all companies to report a line item for operating profit or loss and provides a definition for the line item. This line item is already reported by most firms, but with

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 $^{^{2}}$ Of the 100 firms analyzed in the ED, 41% used the by-function method and 33% used a mixed method, while only 21% used the by-nature presentation (IASB, 2019 b, Table A.5.1).

varying definitions³ indicating that the effect of the proposed disclosure change would be widespread. Again, an understanding of potential benefits to users would be helpful. Furthermore, understanding the determinants of choice in these presentation issues is likely to yield additional insight into the costs and benefits of the alternatives.

This project addresses three main research questions. First, is the choice of profit and loss presentation method associated with increased decision usefulness of information? Second, is the presentation of an operating profit or loss subtotal associated with increased decision usefulness of information? Third, what factors beyond industry practice and historical home-country practices – if any – determine the choice of presentation methods for by-nature versus by-function and for inclusion versus exclusion of an operating profit or loss subtotal? In additional analysis, we will examine whether compared to operating profit amounts as currently presented, an operating profit amount, calculated according to the ED, is a better predictor of future firm performance.

Research Objectives and Method

For the first two research questions about the potential benefits of alternative formatting choices, the primary potential benefit on which we focus is decision usefulness. The research design relies on cross-sectional variation in practice and a comparison of the decision usefulness of income information from firms that make one presentation choice to the decision usefulness of income information from firms that make a different presentation choice.

The link between decision usefulness and presentation choices is predicated on the theory of formatting effects. The term "theory of formatting effects" was coined by Libby, Bloomfield, and Nelson (2002) to describe the effects of alternative financial statement presentations on users of information. Research has shown that the way in which information is presented in the financial statements can affect users of such information – the acquisition of information, the perceived importance of such information, and/or the perceived reliability of such information (Frederickson, Hodge, and Pratt, 2006; Hirst and Hopkins, 1998; Hopkins 1996; Koonce, Lipe, and McAnally, 2005; Kozminsky, 1977; Maines and McDaniel, 2000).

³ Of the 100 firms analyzed in the ED, 63% include a line item labelled operating profit or loss but there are "at least nine different definitions" (IASB, 2019 b, 68 and Table A.1.1).

Our proxy for decision usefulness is analysts' forecast accuracy. Although earnings forecasts in IBES cannot be reconciled directly to IFRS earnings (because IBES includes various adjustments, the details of which are not publicized), we argue that analyst forecast accuracy is a valid indicator of the decision usefulness of financial statements because the IBES earnings forecasts and IBES actual earnings both include the same adjustments. Thus, forecast error measured as the difference between forecasted EPS in the IBES data and actual EPS in the IBES data represents how well analysts were able to forecast the earnings amount they were trying to forecast.

Expectations that earnings forecast accuracy would be affected by the nature versus function presentation of income statements are predicated on the importance of the cost of sales line item and the gross profit subtotal. Gross profit is defined as sales revenue minus cost of sales, and the cost of sales line item is the defining feature of an income statement that uses the by-function presentation.⁴ Many analysts rely on gross profit margins as an important profitability indicator in comparative ratio analysis, a fundamental tool of financial statement analysis. Seminal archival research demonstrates an increase in the explanatory power of gross profit (along with several other earnings components) for stock returns relative to the explanatory power of summary earnings alone (Lipe, 1986).

Not only do analysts rely on gross profit margins as an important profitability indicator, gross profit is one of the building blocks in preparing financial statement forecasts, which are then used in discounted cash flow valuations and market multiple based valuations (Whalen, Baginski, and Bradshaw, 2018). Appendix A provides an example excerpt of an income statement forecast from an analyst's report, illustrating the prominence of gross profit in forecasting the income statement.

Given the inherent importance of an item of information such as gross profit, it is important to consider how that information is presented in the financial statements. Appendix B provides an example of variations in a data aggregator's and an analyst's gross profit calculations when the gross profit term was not shown on the face of the income statement. Costco's Form

⁴ IAS 1, paragraph 103 states: "The second form of analysis is the 'function of expense' or 'cost of sales' method and classifies expenses according to their function as part of cost of sales or, for example, the costs of distribution or administrative activities. *At a minimum, an entity discloses its cost of sales under this method* separately from other expenses."

10-K reports that its gross margin for 2019 was \$16,465 million. (B.I and B.II provide the company's income statement and the gross margin calculation from the company's MD&A, respectively.) The data aggregator information in B.III shows a gross income number of \$19,817 million that apparently includes fee revenue as well as revenues from sales of merchandise. The excerpt from the analyst report (B.IV) shows a different gross profit number of \$19,860 million.

Similar to expectations about forecast accuracy being affected by how cost of sales and gross profit are presented on the income statement, expectations that earnings forecast accuracy could be affected by the inclusion (versus exclusion) of an operating profit subtotal on the face of income statements are similarly motivated by the theory of formatting effects as well as evidence of the importance of operating profit to valuation and financial analysis. Categorizing components of financial performance as operating versus financing activities underpins forecasting and firm valuation techniques (Bradshaw et al., 2010). BC 255 notes that "the Board proposes to require and define a measure profit or loss before financing and income tax" that it expects to provide relevant information to users as it will be used in a similar way as EBIT is currently used.⁵ The ED's proposal would provide a uniform definition of operating profit to enhance comparability. Comparability enhances the decision-usefulness of financial reporting disclosures (IASB Conceptual Framework, ¶ 2.23). A substantial amount of accounting research supports the importance of comparability (Riedl and Srinivasan 2010; De Franco, Kothari, and Verdi 2011; Young and Zeng 2015) including footnotes comparability by a few recent studies (McMullin 2016; Drake et al. 2019). Most directly relevant to this study, prior research shows that intra-industry comparability of line items on the face of the financial statements provides useful information to analysts (Hoitash et al., 2018; Henry et al., 2020). We address the question of whether the presence of an operating profit subtotal – as it currently exists, i.e., without a uniform definition – provides decision-useful information.

For the third research question regarding determinants of formatting choice, we examine what factors beyond industry practice and historical home-country practices – if any – that determine the choice of presentation methods. We expect by-function presentation to be more prevalent in retail and manufacturing industries and less prevalent in service and financial

⁵ BCC 254 states: "EBIT is commonly used for screening and ratio analysis, or as a starting point for forecasting cash flows (Mazars). A survey by the CFA Institute in 2016 found that 45.9% of 431 (mostly buy-side respondents) investors use EBIT in their analysis."

industries.⁶ We also expect by-function presentation to be more prevalent in firms from certain countries, given that prior research has documented national patterns of accounting choices within IFRS (e.g., Kvaal and Nobes, 2010; Kvaal and Nobes, 2012; Lourenço, Sarquis, Branco, and Nobes 2015; Nobes 2011).⁷

Sample and Presentation Choices

In this study, we utilize data extracted directly from the eXtensible Business Reporting Language (XBRL) versions of financial statements. The information in the XBRL version of the financial statements corresponds precisely to the information presented in the financial statement filings, with either standard tags from the IFRS standard taxonomy or firm specific extensions, i.e. "custom tags", assigned to each data element. Note that the XBRL data contrasts with information from data aggregators such as Compustat which include data items that do not necessarily appear on the face of the financial statement. For instance, Compustat provides an amount for "cogs" for BHP Limited and Total SA, but neither company reports cost of sales on the face of the income statement in the companies' annual reports. The XBRL data tags facilitate large sample analysis of line items on financial statements.

These data are most accessible for firms that file financial statements with the U.S. Securities and Exchange Commission (SEC).⁸ Our initial starting point for sample selection is therefore the income statement XBRL data for all filings with the SEC in fiscal 2019 that utilize IFRS XBRL tags. We exclude observations for financial firms because the presentation choices for these firms differ substantially from those of nonfinancial firms. Some filings contained duplicate information, if for example, a firm included its results in both an earnings announcement (filed with a Form 6-K) and in the annual report (filed with a Form 20-F). Finally, we exclude observations where no related forecasts are found in IBES. Table 1 summarizes the sample selection process. Our sample consists of 304 firms that prepare financial statements using IFRS and file their XBRL-tagged statements with the SEC. We obtain data on these 304 firms for fiscal 2017, 2018, and 2019, giving a total of 830 observations.

⁶ Application guidance in the ED cites these industries as examples where one presentation format would be more useful than the other (IASB, 2019, ¶B45.)

⁷ For example, data from 2008/9 show more than 80% of large, non-financial firms from the U.K, Germany, and Sweden present the income statement by function compared to fewer than 10% of large, non-financial firms from Spain and Italy (Nobes, 2012).

⁸Since March 1, 2017, the SEC has mandated FPIs who use IFRS to submit XBRL financial statements. For U.S. firms, the mandatory use of XBRL in financial statement filings occurred in three phases between 2009 and 2011.

[Table 1 about here]

We identify firms using a by-function presentation based on the presence of a cost-ofsales line item in a firm's statement of profit and loss, specifically IFRS XBRL "*CostofSales*." The ED refers to firms using a mixed presentation. Based on conversations with IASB staff, we defined "mixed presentation" as including both a cost-of-sales line item and a line item for depreciation expense; however, no instances of mixed presentation format were identified by the XBRL data scan. Not all firms that present a cost-of-sales line item also present a gross profit line subtotal, and we therefore identify firms who do so by the presence of IFRS XBRL "*GrossProfit*." Firms that include a line item for operating profit or loss on the income statement were identified by the presence of the item IFRS XBRL "*ProfitLossFromOperatingActivities*."

[Table 2 about here]

As shown in Table 2, an average of 79.8% of observations across the entire sample use the by-function form of presentation of the income statement. The percentage in 2019 was slightly higher than the percentage in 2017. An average of 78.8% of observations include a line item for Operating Profit, and an average of 53.0% include a line item for Gross Profit.

Research Design

To measure forecasting accuracy (the dependent variable in tests of association with presentation choices), we compare actual versus analysts' forecasts for earnings and cash flow. Accuracy is measured as the absolute value of the forecast error for Earnings Per Share (EPS), scaled by beginning-of-period share price, and multiplied by negative 100 so that a higher value indicates greater accuracy. We use the analyst forecast data within one year before the fiscal year ending date, and we keep the earliest forecast for each analyst. In addition to decision usefulness, proxied by analysts' forecast error, we examine forecast uncertainty, proxied by analysts' forecast dispersion. Dispersion is defined as the absolute value of the difference between the High Estimate and the Low Estimate of EPS among the analysts' forecasts.

We estimate the following equation to address our first two research questions, with βl as the coefficient of interest:

Analyst_forecast_property[#] = $\alpha + \beta_1 Presentation_choice^{##} + Controls$ (1) Where:

Analysts_forecast_ alternately,

property [#] =	 Analyst_forecast_accuracy_{FIRST}, defined as the absolute value of the IBES forecast error (calculated as the difference between mean forecast Earnings Per Share (EPS) minus IBES actual EPS, scaled by stock price at the end of year t-1, and multiplied by negative 100. Forecast are based on the earliest forecast within one year before the fiscal ending date. Analyst_forecast_dispersion, defined as the absolute value of the difference between the High Estimate and the Low Estimate of EPS among the analysts' forecasts.
<i>Presentation_choice</i> ## =	<pre>alternately, By_function, an indicator variable equal to 1 if the company uses by-function reporting on the Statement of Profit and Loss, and 0 otherwise. This category includes companies that include the line item Cost of Goods Sold (IFRS xbrl "CostofSales") but do not also show a line item Depreciation Expense (IFRS xbrl "DepreciationAndAmortisationExpense"); Mixed by function, an indicator variable equal to 1 if the</pre>
	 company uses a mixed by-function/by-nature reporting on the Statement of Profit and Loss, and 0 otherwise. We define this category to include companies that include the line item Cost of Goods Sold (IFRS xbrl "CostofSales") AND ALSO SHOW a line item Depreciation Expense (IFRS xbrl "DepreciationAndAmortisationExpense"); and Include _Op _Profit, an indicator variable equal to 1 if the company includes Operating Profit on the Statement of Profit and Loss (IFRS xbrl "ProfitLossFromOperatingActivities"), and 0 otherwise. Include _Gross _Profit, an indicator equal to 1 if the company includes Gross Prof on the statement of profit and loss (IFRS xbrl "BrofitLossFromOperatingActivities"), and 0 otherwise.
<i>Controls</i> =	 control variables related to earnings forecasting difficulty (Predictability): <i>VolEarn</i> defined as Standard deviation of 16 quarters earnings deflated by total assets <i>VolRet</i> defined as Standard deviation of 48 months stock returns <i>SUE</i> unexpected earnings <i>NegUE</i> earnings decline from prior year <i>NegSI</i> the amount related to special items in earnings; and <i>Loss</i> earnings less than zero.

control variables related to firm characteristics include

- Size, defined as market capitalization = shares outstanding times share price).
- Industry (One-digit SIC)

Control variables are similar to those used in De Franco, Kothari, and Verdi (2011). Our third area of inquiry addresses the question of factors that determine firms' choices of presentation methods. We examine the extent to which industry and home-region explain firm's choices. We estimate the following equation:

Presentation_choice^{##} = $\alpha + \beta_1$ Industry + β_2 Region (2)

Where industry is defined based on firms' one-digit SIC code and Region is defined using the following groupings: Europe (1), Middle east (2), Asia & Pacific (3), South/Latin America (4), Africa (5), Arab States (6), and North America (7). The industry and region variables are recoded as indicator variables for the regression. Both β 1 and β 2 are variables of interest.

Table 3 presents descriptive statistics for all variables and a correlation matrix. The test of significance for the Pearson correlation coefficients shows that analysts' forecast accuracy and dispersion are negatively correlated with coefficient of -0.443, and the inclusion of Gross Profit is positively correlated both with the by function choice and the inclusion of Operating Profit.

[Table 3 about here]

Results of Analysis

Table 4 presents results of regressing analysts forecast accuracy on alternative presentation choices. In Panel A, the presentation choice is whether the company uses the by-function format of the income statement. In Panels B and C, the presentation choices are whether the company's income statement includes line items for operating profit and gross profit, respectively. In Panel D, the presentation choice is the ratio of custom tags to total tags on the income statement in the company's XBRL filing.

As shown in Panel C, we find evidence of a positive relation between analysts' forecast accuracy and income statements including a line item for gross profit.

[Table 4 about here]

Table 5 presents results of regressing analysts forecast dispersion on alternative presentation choices. In Panel A, the presentation choice is whether the company uses the by-function format of the income statement. In Panels B and C, the presentation choices are whether the company's income statement includes line items for operating profit and gross profit, respectively. In Panel D, the presentation choice is the ratio of custom tags to total tags on the income statement in the company's XBRL filing.

As shown in Panel A, we find evidence of a negative relation between analysts' forecast dispersion and use of the by-function format. In Panel C, we find a negative relation between analysts' forecast dispersion and inclusion of a gross profit subtotal.

[Table 5 about here]

Table 6 presents results of the regression of alternative presentation choices on industry and region. Both predictors are categorical variables, with the base value of SIC0 for Industry and the base value of Region 1 (Europe) for Region. The regression results for the different presentation choices indicate whether there is different predictive power over the baseline 0 industry group in the Europe region. For example, for choice of by function, observations with Asia Pacific headquarters (Region 3) and North American headquarters (Region 7) are less likely to choose the by-function method than observations with European headquarters.

[Table 6 about here]

Additional Analysis

Additional analyses are under consideration.

Majority choice

Include as the "presentation_choice" variable in the regression specified by Equation 1 an indicator variable *Majority Choice*, defined as being equal to 1 if the company makes the same presentation choice as the majority of firms in the same industry, and 0 otherwise. This analysis is relevant because the ED aims for comparability across all firms, but comparability and continuity of practice within industries may be useful to users of financial statements than comparability across all industries.

Divergent choice

For firms with presentation choices that diverge from the industry majority and homecountry majority practices, we will undertake further analysis. Depending on data availability, we will utilize the entire sample to probe additional explanatory factors for divergent choices, including firm size, firm age, and the firm's auditor (Nobes 2011; Kvaal and Nobes 2012; Nobes and Perramon 2013; Tan et al. 2016). Alternatively, we will aim to supplement our empirical analysis of archival data with qualitative survey research – specifically brief structured interviews with the Investor Relations representatives from a sample of firms with divergent presentation choices.

Change Analysis

An alternate research design would be to examine whether analysts' forecast properties change when a firm changes presentation method. If a large enough sample of change firms could be identified, the analysis would compare forecast accuracy and dispersion in the preversus post- change periods. Although findings in prior research (Kvaal and Nobes, 2012) leads us to expect that relatively few firms change from one presentation method to the other over time, we are undertaking data collection to verify. Because IFRS XBRL filings are not available prior to 2017, we are undertaking manual data collection to ascertain firms' presentation format in the earliest of 2009 or the first financial statements prepared under IFRS.

Disaggregation

Another presentation choice made by companies is the level of disaggregation of information in the income statement. We are undertaking manual data collection to capture firms' disaggregation.

Pro-forma operating earnings

We will explore the possible examination of whether future firm performance is better predicted by operating profit amounts as currently presented or by pro-forma operating profit amounts calculated according to the ED. We will estimate the following equations and compare the R^2 using a Vuong test:

Returns =
$$\alpha + \beta_1 Operating Profit as Reported + Controls$$
 (3a)
Returns = $\alpha + \beta_1 ProForma Operating Profit as per ED + Controls$ (3b)

Where:

<i>Returns</i> =	Buy and hold market returns for 6 months following the annual reporting date
Operating Profit as Reported ProForma	Operating Profit on the Statement of Profit and Loss (IFRS xbrl "ProfitLossFromOperatingActivities") ProForma Operating Profit calculated using a subset of the IFRS XBRL
Operating Profit	Income Statement Items
as per ED	Revenue
us per EE	+ OtherIncome
	+ OtherGainsLosses
	- CostOfSales
	- DistributionCosts
	- AdministrativeExpense
	- OtherExpenseByFunction
	- ChangesInInventoriesOfFinishedGoodsAndWorkInProgress
	- OtherWorkPerformedByEntityAndCapitalised
	- RawMaterialsAndConsumablesUsed
	- EmployeeBenefitsExpense
	- DepreciationAndAmortisationExpense
	- ImpairmentLossReversalOfImpairmentLossRecognisedInProfitOrLoss - OtherExpenseByNature
Controls	Each firm will serve as its own control.

Controls

The amount of Pro Forma Operating Profit according to the ED amount will be based on line items in the income statement. Appendices C and D and present the IFRS XBRL line items on an income statement prepared using the by-function and by-nature formats, respectively. Three line items that will be used in the pro forma calculation are identical in both formats. The other line items are specific to the by-function or by-nature format. The pro forma operating profit will be an estimate for two main reasons. First, some information is not available from the income statement. For example, firms' footnote disclosure may reveal that a portion of interest costs has been included in "other operating expense" or that interest on pension liabilities has been included in employee benefit expense. Second, the sample uses a high proportion of custom XBRL tags, which could represent significant components of operating expenses.

Conclusion

Our analysis finds some evidence that the usefulness of financial reports is affected by the presentation choices made by companies. We use analysts' forecast accuracy as the proxy for usefulness of financial reports. Our evidence shows a positive relation between analysts' forecast

accuracy and inclusion of a line item for gross profit on the income statement. Our analysis also shows a negative relation between analysts' forecast dispersion and use of the by-function format and the inclusion of a gross profit subtotal on the income statement.

IFRS Filers 2019			498
Exclude financial firms		64	434
Duplicates i.e 6K, F1		16	418
Matched by CUSIP/Compustat	112		
Matched by Ticker	118		
Matched by Name	74		
Total matched	304		
Not found in IBES		114	
Final XBRL sample matched with IBES			304

Table 1 Sample Selection

etion 78.2%	<u>Op_Profit</u> 83.3%	Gross_Profit 55.6%
/8.2%	83.3%	>> 6 %
00.00/		
80.0%	77.5%	50.7%
80.7%	76.6%	53.2%
	70.00/	53.0%
	79.8%	

 Table 2 Presentation Choices by Year, by Industry, by Region

Panel B. By Industry

Panel A. By Year (n = 830)

Panel presents count of observations, with percentage of total below, in italics.

Inductory	By_Fun			Op_Profit	-	ross_Profit	Total
Industry	0	1	0	1	0	1	Totai
0	0	5	0	5	0	5	5
	0.0	100.0	0.0	100.0	0.0	100.0	100.0
1	60	130	71	119	103	87	190
	31.6	68.4	37.4	62.6	54.2	45.8	100.0
2	22	229	40	211	140	111	251
	8.8	91.2	15.9	84.1	55.8	44.2	100.0
3	0	127	27	100	18	109	127
	0.0	100.0	21.3	78.7	14.2	85.8	100.0
4	70	113	24	159	108	75	183
	38.3	61.8	13.1	86.9	59.0	41.0	100.0
5	3	5	0	8	0	8	8
	37.5	62.5	0.0	100.0	0.0	100.0	100.0
7	13	41	7	47	19	35	54
	24.1	75.9	13.0	87.0	35.2	64.8	100.0
8	0	12	7	5	2	10	12
	0.0	100.0	58.3	41.7	16.7	83.3	100.0
Total	168	663	176	654	390	440	830
	20.2	79.8	21.2	78.8	47.0	53.0	100.0

Panel C.	Custom	Tag	Ratio,	Bv	Industry

Industry	Mean	Med
0	47.1%	35.4%
1	41.3%	39.6%
2	38.7%	39.1%
3	39.1%	40.1%
4	45.0%	44.6%
5	36.0%	35.8%
7	38.6%	38.7%
8	37.4%	32.4%

Table 2 Presentation Choices by	y Year, by Indus	stry, by Regior	(continued)

	By Function Include Op Profit Include Gross Profit						
Region	0	1	0	_ <u>op_</u> 110ju 1	0	1	Total
1	19	190	8	201	95	114	209
	9.1	90.9	3.8	96.2	45.5	54.5	100.0
2	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
3	41	126	30	137	95	72	167
	24.6	75.4	18.0	82.0	56.9	43.1	100.0
4	28	125	32	121	40	113	153
	18.3	81.7	20.9	79.1	26.1	73.9	100.0
5	6	27	7	26	16	17	33
	18.2	81.8	21.2	78.8	48.5	51.5	100.0
6	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
7	74	194	99	169	144	124	268
	27.6	72.4	36.9	63.1	57.3	46.3	100.0
Total	168	662	176	654	390	440	830
	20.2	79.8	21.2	78.8	47.0	53.0	100.0

Panel presents count of observations, with percentage of total below, in italics.

Panel E. Custom Tag Ratio, By Region

Panel D. By Region

Region	Mean	Med
1	40.8%	41.5%
2	-	-
3	39.0%	38.8%
4	46.2%	46.0%
5	41.2%	39.7%
6	-	-
7	38.7%	38.1%

By_function, an indicator variable equal to 1 if the company uses by-function reporting on the Statement of Profit and Loss, and 0 otherwise. This category includes companies that include the line item Cost of Goods Sold (IFRS xbrl "*CostofSales*") but **do not** also show a line item Depreciation Expense (IFRS xbrl

"DepreciationAndAmortisationExpense"); Include_Op_Profit, an indicator variable equal to 1 if the company includes Operating Profit on the Statement of Profit and Loss (IFRS xbrl "ProfitLossFromOperatingActivities"), and 0 otherwise. Include_Gross_Profit, an indicator equal to 1 if the company includes Gross Profit on the statement of profit and loss (IFRS xbrl "GrossProfit"), and 0 otherwise. Industry is defined based on firms' one-digit SIC code, as follows: 0 Agriculture, forestry, and fishing; 1 Mining and construction; 2 Manufacturing (e.g., Food, Textiles, Chemicals); 3 Manufacturing (e.g., Industrial machinery, electronic equipment, controls); 4 Transportation, communication, electric, gas, sanitation; 5 Wholesale and retail trade; 6 Finance, Insurance and Real Estate; 7 Services (e.g., Business services, hotels, amusement); and 8 Services (Health and professional services). Region is defined using the following groupings: Europe (Region1), Middle east (Region 2), Asia & Pacific (Region3), South/Latin America (Region4), Africa (Region5), Arab States (Region 6), North America (Region7).

Table 3 Descriptive Statistics and Correlation Matrix

variable	Ν	mean	sd	min	p50	max
Analyst_forecast_accuracy	830	-43.703	482.768	-11721.667	-1.848	8.632
Analyst_forecast_dispersion	830	1.669	12.476	0.000	0.170	280.000
By_Function	830	0.798	0.402	0.000	1.000	1.000
Include_Op_Profit	830	0.788	0.409	0.000	1.000	1.000
Include_Gross_Profit	830	0.530	0.499	0.000	1.000	1.000
Custom.Tag.Rate	830	0.407	0.101	0.123	0.401	0.910
SUE	641	1.461	4.656	0.000	0.724	88.917
NegUE	830	0.300	0.459	0.000	0.000	1.000
NegSI	830	0.542	0.499	0.000	1.000	1.000
Loss	830	0.284	0.451	0.000	0.000	1.000
Days	674	5.774	0.377	2.565	5.894	6.632
VolRet	580	0.129	0.072	0.031	0.114	0.557
VolEarn	802	0.060	0.120	0.002	0.020	1.121
Size	668	6.932	2.637	-4.269	7.319	11.974

Panel A. Descriptive Statistics

Panel B. Correlation Matrix

Table presents Pearson correlation coefficients.

	Analyst_ forecast _accuracy	Analyst_ forecast_ dispersion	By_ Function	Include_ Op_Profit	Include_ Gross_Profit
Analyst_forecast_ dispersion	-0.443***				
By_Function	-0.009	-0.010			
Include_Op_Profit	-0.013	0.045	-0.019		
Include_Gross_Profit	-0.026	0.003	0.192***	0.167***	
Custom. Tag. Rate	-0.005	-0.002	0.016	0.067**	0.048

*** p < 0.01, ** p < 0.05, * p < 0.10

Analyst_forecast_accuracyFIRST, defined as the **Absolute value** of the IBES forecast error (calculated as the mean forecast Earnings Per Share (EPS) minus IBES actual EPS, scaled by stock price at the end of year t-1, and multiplied by negative 100. Forecast are based on the earliest forecast within one year before the fiscal ending date. *Analyst_forecast_dispersion*, defined as the absolute value of the difference between the High Estimate and the Low Estimate of EPS among the analysts' forecasts. *VolEarn* defined as Standard deviation of 16 quarters earnings deflated by total assets. *VolRet* defined as Standard deviation of 48 months stock returns. *SUE* unexpected earnings; *NegUE* earnings decline from prior year; *NegSI* the amount related to special items in earnings; and *Loss* earnings less than zero. Size, defined as market capitalization = shares outstanding times share price).

TABLE 4 Analysts Forecast Accuracy and Presentation choices

(*n* = 413)

Analyst forecast accuracy = $\alpha + \beta_1 Presentation \ choice^{\#} + Controls + \varepsilon$

Coefficients:	Estimate	t value	$Pr(\geq t)$	
By Function	4.0980	0.585	0.5589	
SUE	-0.7842	-1.341	0.1807	
NegUE	7.5468	1.339	0.1813	
NegSI	-1.7975	-0.332	0.7403	
Loss	-10.7779	-1.336	0.1822	
Days	38.6618	2.572	0.0105	***
VolRet	-98.2946	-1.517	0.1300	*
VolEarn	28.6280	0.306	0.7600	
Size	3.6204	2.217	0.0272	**
Fiscal.Year2018	-5.8992	-0.913	0.3620	
Fiscal.Year2019	-11.7903	-1.775	0.0766	*
Industry.SIC11	3.0387	0.094	0.9251	
Industry.SIC12	-6.2478	-0.194	0.8461	
Industry.SIC13	-4.0598	-0.125	0.9006	
Industry.SIC14	-7.7651	-0.241	0.8095	
Industry.SIC15	7.4624	0.145	0.8844	
Industry.SIC17	-12.0268	-0.359	0.7197	
Industry.SIC18	-1.9356	-0.053	0.9577	
(Intercept)	-248.0450	-2.580	0.0102	***
Adjusted R-squared:	0.0780			

Panel A. Presentation Choice = *By Function*

Panel B. Presentation Choice = Includes Operating Profit

Coefficients:	Estimate	t value	$Pr(\geq t)$	
Include Op Profit	-6.7145	-0.918	0.3591	
SUE	-0.7356	-1.263	0.2074	
NegUE	7.6605	1.36	0.1746	
NegSI	-1.9281	-0.359	0.7198	
Loss	-10.9810	-1.364	0.1733	
Days	38.0876	2.535	0.0116	***
VolRet	-95.6943	-1.477	0.1404	*
VolEarn	14.3551	0.151	0.8802	
Size	3.5894	2.199	0.0284	**
Fiscal.Year2018	-6.1053	-0.944	0.3455	
Fiscal.Year2019	-12.0448	-1.813	0.0705	*
Industry.SIC11	-0.2130	-0.007	0.9947	
Industry.SIC12	-6.9348	-0.216	0.8293	
Industry.SIC13	-5.0306	-0.155	0.8771	
Industry.SIC14	-10.1440	-0.316	0.7522	
Industry.SIC15	8.7172	0.170	0.8651	
Industry.SIC17	-12.4127	-0.371	0.7110	
Industry.SIC18	-6.2646	-0.170	0.8650	
(Intercept)	-233.5966	-2.427	0.0157	**
Adjusted R-squared:	0.0791			

Coefficients:	Estimate	t value	$Pr(\geq t)$	
Include Gross Profit	11.7700	2.039	0.0421	**
SUE	-0.7864	-1.356	0.1760	
NegUE	6.5950	1.171	0.2423	
NegSI	-2.5320	-0.474	0.6356	
Loss	-7.0870	-0.872	0.3837	
Days	39.9600	2.667	0.0079	***
VolRet	-108.2000	-1.673	0.0952	*
VolEarn	35.6500	0.383	0.7022	
Size	3.8080	2.339	0.0198	**
Fiscal.Year2018	-5.3010	-0.823	0.4110	
Fiscal.Year2019	-11.0300	-1.666	0.0964	*
Industry.SIC11	8.1580	0.253	0.8003	
Industry.SIC12	-0.0201	-0.001	0.9995	
Industry.SIC13	-1.3740	-0.042	0.9662	
Industry.SIC14	0.0021	0.000	0.9999	
Industry.SIC15	10.6500	0.208	0.8350	
Industry.SIC17	-8.8510	-0.265	0.7910	
Industry.SIC18	1.6020	0.044	0.9648	
(Intercept)	-265.2000	-2.764	0.0060	***
Adjusted R-squared:	0.0864			

TABLE 4 Analysts Forecast Accuracy and Presentation choices (continued)

Panel D.	Presentation	Choice =	Custom	Tag	Ratio

Coefficients:	Estimate	t value	$Pr(\geq t)$
Custom.Tag.Rate	9.5270	0.367	0.7136
SUE	-0.7583	-1.301	0.1940
NegUE	7.4540	1.32	0.1877
NegSI	-2.2702	-0.423	0.6723
Loss	-10.0714	-1.254	0.2104
Days	39.0024	2.581	0.0102 ***
VolRet	-97.9576	-1.512	0.1314 *
VolEarn	31.3946	0.335	0.7375
Size	3.5681	2.174	0.0303 **
Fiscal.Year2018	-5.8301	-0.901	0.3680
Fiscal.Year2019	-11.8699	-1.786	0.0748 *
Industry.SIC11	0.8070	0.025	0.9801
Industry.SIC12	-7.1159	-0.221	0.8252
Industry.SIC13	-4.1675	-0.128	0.8981
Industry.SIC14	-10.0324	-0.311	0.7557
Industry.SIC15	7.9449	0.155	0.8770
Industry.SIC17	-12.8177	-0.382	0.7026
Industry.SIC18	-1.6406	-0.045	0.9641
(Intercept)	-249.0603	-2.563	0.0107 ***
Adjusted R-squared:	0.0905		

*** p < 0.01, ** p < 0.05, * p < 0.10, two-tailed. Equation estimated using OLS regression. Variables are defined in Table 2.

TABLE 5 Analysts Forecast Dispersion and Presentation choices

(*n* = 422)

Analyst forecast dispersion = $\alpha + \beta_1 Presentation \ choice^{\#} + Controls + \varepsilon$

Coefficients:	Estimate		t value	Pr(> t)	
By Function	-1.	1818	-3.864	0.0001	***
SUE	-0.	0093	-0.365	0.7156	
NegUE	-0.	1769	-0.719	0.4723	
NegSI	0.	0486	0.207	0.8364	
Loss	0.	5256	1.505	0.1330	*
Days	0.	7736	1.523	0.1286	*
VolRet	1.	3933	0.495	0.6212	
VolEarn	-4.	2920	-1.068	0.2861	
Size	0.	0253	0.356	0.7222	
Fiscal.Year2018	0.	0918	0.328	0.7428	
Fiscal.Year2019	-0.	1923	-0.664	0.5070	
Industry.SIC11	-0.	1262	-0.089	0.9290	
Industry.SIC12	0.	3821	0.271	0.7864	
Industry.SIC13	0.	0846	0.059	0.9526	
Industry.SIC14	0.	0632	0.045	0.9643	
Industry.SIC15	0.	2031	0.09	0.9280	
Industry.SIC17	3.	0142	2.059	0.0400	**
Industry.SIC18	0.	2422	0.152	0.8796	
(Intercept)	-3.	2363	-0.949	0.3431	
Adjusted R-squared:	0.	0790			

Panel A. Presentation Choice = *By Function*

Panel B. Presentation Choice = Includes Operating Profit

	*	's reju		
Coefficients:	Estimate	t value	Pr(> t)	
Include_Op_Profit	0.1	8208 0.560	0.5760	
SUE	-0.0	-0.692	0.4890	
NegUE	-0.1	8492 -0.739	0.4602	
NegSI	0.1	6894 0.711	0.4773	
Loss	0.3	9615 1.116	0.2650	
Days	0.8	5539 1.655	0.0987	*
VolRet	1.2	4399 0.434	0.6645	
VolEarn	-4.	5892 -1.106	0.2695	
Size	0.	0246 0.339	0.7349	
Fiscal.Year2018	0.	1069 0.376	0.7073	
Fiscal.Year2019	-0.	-0.592	0.5545	
Industry.SIC11	0.	3090 0.215	0.8301	
Industry.SIC12	0.	4909 0.343	0.7321	
Industry.SIC13	0.	0476 0.033	0.9738	
Industry.SIC14	0.	4710 0.329	0.7424	
Industry.SIC15	0.	0903 0.040	0.9685	
Industry.SIC17	3.	0648 2.059	0.0402	**
Industry.SIC18	0.	2384 0.145	0.8847	
(Intercept)	-5.	0144 -1.442	0.1501	
Adjusted R-squared:	0.	0471		

Coefficients:	Estimate	t value	Pr(> t)	
Include Gross Profit	-1.21	-4.871	0.0000	***
SUE	-0.01	44 -0.569	0.5696	
NegUE	-0.08	-0.329	0.7427	
NegSI	0.21	68 0.940	0.3480	
Loss	0.04	0.115	0.9086	
Days	0.72	1.446	0.1489	*
VolRet	2.31	0.826	0.4093	
VolEarn	-5.38	-1.354	0.1766	
Size	0.00	3 9 0.056	0.9555	
Fiscal.Year2018	0.03	0.135	0.8927	
Fiscal.Year2019	-0.26	-0.919	0.3586	
Industry.SIC11	-0.40	-0.289	0.7724	
Industry.SIC12	-0.20	40 -0.145	0.8844	
Industry.SIC13	-0.23	-0.169	0.8661	
Industry.SIC14	-0.50	-0.362	0.7179	
Industry.SIC15	-0.20	-0.093	0.9256	
Industry.SIC17	2.70	54 1.865	0.0629	**
Industry.SIC18	-0.21	-0.137	0.8913	
(Intercept)	-2.66	.0.789	0.4303	
Adjusted R-squared:	0.09	72		

 TABLE 5 Analysts Forecast Dispersion and Presentation choices (continued)

Panel D. Presentation Choice = Custom Tag Ratio

Coefficients:	Estimate	t value	$Pr(\geq t)$	
Custom.Tag.Rate	-0.6295	-0.550	0.5829	
SUE	-0.0173	-0.668	0.5044	
NegUE	-0.1744	-0.696	0.4869	
NegSI	0.1800	0.760	0.4479	
Loss	0.3635	1.028	0.3045	
Days	0.8216	1.586	0.1135	*
VolRet	1.2966	0.452	0.6512	
VolEarn	-5.0404	-1.234	0.2178	
Size	0.0271	0.373	0.7095	
Fiscal.Year2018	0.0948	0.333	0.7392	
Fiscal.Year2019	-0.1778	-0.603	0.5465	
Industry.SIC11	0.3178	0.221	0.8255	
Industry.SIC12	0.5150	0.359	0.7198	
Industry.SIC13	0.0390	0.027	0.9787	
Industry.SIC14	0.5048	0.352	0.7253	
Industry.SIC15	0.1008	0.044	0.9648	
Industry.SIC17	3.0984	2.078	0.0383	**
Industry.SIC18	0.1194	0.073	0.9415	
(Intercept)	-4.4298	-1.268	0.2055	
Adjusted R-squared:	0.0471			

*** p < 0.01, ** p < 0.05, * p < 0.10, two-tailed. Equation estimated using OLS regression. Variables are defined in Table 2.

TABLE 6 Presentation Choices by Industry and Region

Presentation Choice = $\alpha + \beta_1 Industry + \beta_2 Region + \varepsilon$

(n = 827)

(# 027)	By_H	Function	Incl	Include_Op_Profit			Include_Gross_Profit		
Coefficients:	Estimate	z value	Estimate	z value		Estimate	z value		
Industry.SIC11	-4.8770	-0.007	-4.7225	-0.028 ·		-4.4588	-0.026		
Industry.SIC12	-4.1993	-0.006	-4.4722	-0.027		-4.6499	-0.028		
Industry.SIC13	0.2585	0.000	-4.6722	-0.028		-3.4254	-0.020		
Industry.SIC14	-5.3104	-0.008	-4.1958	-0.025		-4.8909	-0.029		
Industry.SIC15	-5.0744	-0.007	0.1771	0.001		0.905	0.004		
Industry.SIC17	-4.8785	-0.007	-4.3258	-0.026		-3.9874	-0.024		
Industry.SIC18	0.3582	0.000	-5.65	-0.034		-3.3587	-0.020		
Region3	-0.4507	-2.432 ***	-0.9596	-4.730 **	**	-0.1818	-1.291		
Region4	-0.1341	-0.668	-1.0798	-5.239 **	**	0.7365	4.748	***	
Region5	-0.1872	-0.599	-0.8209	-2.632 *	**	-0.1301	-0.510		
Region7	-0.6191	-3.284 ***	-1.3433	-6.878 **	**	-0.2054	-1.445		
(Intercept)	5.884	0.008	6.2907	0.037		4.4744	0.027		
Residual deviance:	684.14		742.74	- · · ·		991.19			
AIC	708.14		766.74			1015.2			

*** p < 0.01, ** p < 0.05, * p < 0.10, two-tailed. Equation estimated using logistic regression. Industry is defined based on firms' one-digit SIC code, as follows: 0 Agriculture, forestry, and fishing (Industry.SIC10); 1 Mining and construction (Industry.SIC11); 2 Manufacturing (e.g., Food, Textiles, Chemicals) (Industry.SIC12); 3 Manufacturing (e.g., Industrial machinery, electronic equipment, controls) (Industry.SIC13); 4 Transportation, communication, electric, gas, sanitation (Industry.SIC14); 5 Wholesale and retail trade (Industry.SIC15); 6 Finance, Insurance and Real Estate ((Industry.SIC16); 7 Services (e.g., Business services, hotels, amusement) (Industry.SIC17); and 8 Services (Health and professional services) ((Industry.SIC18). Region is defined using the following groupings: Europe (Region1), Middle east (Region 2), Asia & Pacific (Region3), South/Latin America (Region4), Africa (Region5), Arab States (Region 6), North America (Region7).

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Appendix A: Forecast of Income Statement in Analyst's Report (Source: Merrill Lynch, 30 January 2020)

Table 5: Diageo's income statement

ncome Statement	FY19A	FY20E	FY21E	FY22E	FY23E	FY24E
OTAL NET SALES	12,866	13,239	13,755	14,280	14,829	15,403
organic growth	6.1%	4.3%	4.6%	4.5%	4.6%	4.6%
perimeter impact	-0.5%	-0.5%	0.0%	0.0%	0.0%	0.0%
FX impact	0.2%	-0.9%	-0.7%	-0.7%	-0.7%	-0.7%
reported growth	5.8%	2.9%	3.9%	3.8%	3.8%	3.9%
GROSS PROFIT	8,001	8,297	8,658	9,021	9,402	9,796
gross margin	62.2%	62.7%	62.9%	63.2%	63.4%	63.6%
Marketing spend (A&P)	(2,042)	(2,155)	(2,233)	(2,312)	(2,394)	(2,479)
as % of net sales	15.9%	16.3%	16.2%	16.2%	16.1%	16.1%
Contribution after A&P	5,959	6,142	6,424	6,709	7,007	7,317
Dperating expenses	(1,917)	(1,931)	(1,995)	(2,063)	(2,134)	(2,209)
% change	-2.0%	0.7%	3.3%	3.4%	3.5%	3.5%
Dperating profit	4,042	4,211	4,429	4,646	4,874	5,108
BITDA (clean EBIT + D&A)	4,490	4,626	4,859	5,091	5,335	5,586
margin on net sales	34.9%	34.9%	35.3%	35.7%	36.0%	36.3%
Depreciation and amortisation	(374)	(385)	(400)	(415)	(431)	(448)
LEAN OPERATING PROFIT	4.116	4.241	4,459	4,676	4.904	5.138
margin on net sales	32.0%	32.0%	32.4%	32.7%	33.1%	33.4%
organic growth	8.8%	5.4%	5.7%	5.4%	5.4%	5.4%
perimeter impact	-1.7%	-1.2%	0.0%	0.0%	0.0%	0.0%
FX impact	0.7%	-1.0%	-0.5%	-0.5%	-0.5%	-0.5%
reported growth	7.8%	3.0%	5.2%	4.9%	4.9%	4.8%
Exceptionals included in EBIT	(74)	(30)	(30)	(30)	(30)	(30)
Exceptionals not in EBIT	146	0	0	0	0	0
let Interest and investment income	(263)	(305)	(355)	(439)	(523)	(608)
Vet interest (paid) earned	(248)	(257)	(342)	(426)	(510)	(595)
interest rate	2.4%	2.2%	2.7%	3.3%	3.7%	4.2%
let other finance income	14	(48)	(13)	(13)	(13)	(13)
share of associates PAT	312	313	328	344	361	378
Profit before tax	4,237	4,219	4,403	4,551	4,711	4,878
axation	(898)	(907)	(925)	(956)	(989)	(1,024)
tax rate	20.6%	21.5%	21.0%	21.0%	21.0%	21.0%
Clean tax	(859)	(913)	(931)	(962)	(996)	(1,031)
Profit after tax	3,339	3.312	3.478	3.595	3.722	3.854
Discontinued operations	0	0	0	0	0	0
linorities	(151)	(160)	(168)	(176)	(185)	(195)
Profit for the year	3.188	3.152	3.310	3.419	3.536	3.659
otal exceptionals	57	(24)	(24)	(24)	(24)	(24)
Clean profit for the year	3.164	3,175	3.334	3.443	3,560	3,683
% change	7.4%	0.3%	5.0%	3,3%	3.4%	3,505
Dividend Paid	(1,735)	(1,839)	(1,949)	(2,066)	(2,190)	(2,322)
payout as % of clean net income	55%	58%	58%	60%	62%	(2,322) 63%
Veighted diluted shares in issue	2.428	2.343	2.294	2.247	2.201	2.157
Basic EPS	131.8	135.1	144.9	152.9	161.4	170.5
	8.4%	2.4%	7.3%		5.6%	5.6%
% change				5.5%		
Diluted EPS	131.3	134.5	144.3	152.2	160.7	169.7
% change	8.4%	2.4%	7.3%	5.5%	5.6%	5.6%
Clean diluted EPS	130.3	135.5	145.3	153.2	161.8	170.8
% change	10.3%	4.0%	7.3%	5.4%	5.6%	5.6%
Dividend	71.8	78.8	85.3	92.4	100.0	108.2
% change	9.9%	9.8%	8.3%	8.2%	8.2%	8.2%

Source: BofA Global Research estimates



30 January 2020 7

Appendix B: Example of Error in Data Aggregator's Gross Profit Calculation

Appendix B. Item I. Costco's Income Statement

Form 10-K for the period ending September 1, 2019, Filed with the SEC October 11, 2019 COSTCO WHOLESALE CORPORATION

CONSOLIDATED STATEMENTS OF INCOME

(amounts in millions, except per share data)

	52 We	eks Ended	52 Weeks End	ed	53 Weeks E	nded
	September 1, 2019		September 2, 2018		Septembe 2017	er 3,
E						
ales	\$	149,351	\$ 138,4	134	\$ 12	26,172
pership fees		3,352	3,7	142		2,853
otal revenue		152,703	141,5	576	12	29,025
NG EXPENSES						
nandise costs		132,886	123,7	152	11	11,882
g, general and administrative		14,994	13,8	376		12,950
pening expenses		86		68		82
Operating income		4,737	4,4	480		4,111
ICOME (EXPENSE)						
est expense		(150)	(*	159)		(134)
est income and other, net		178		121		62
BEFORE INCOME TAXES		4,765	4,4	142		4,039
sion for income taxes		1,061	1,2	263		1,325
ncome including noncontrolling interests		3,704	3,7	179		2,714
ome attributable to noncontrolling sts		(45)		(45)		(35)
ME ATTRIBUTABLE TO COSTCO	\$	3,659	\$ 3,	134	\$	2,679
	ales bership fees fotal revenue NG EXPENSES handise costs g, general and administrative bening expenses Deparating income COME (EXPENSE) est expense est income and other, net BEFORE INCOME TAXES sion for income taxes home including noncontrolling interests ome attributable to noncontrolling sts	ales \$ ales \$ bership fees otal revenue NG EXPENSES nandise costs g, general and administrative bening expenses Deperating income COME (EXPENSE) est expense est income and other, net BEFORE INCOME TAXES sion for income taxes noome including noncontrolling interests pome attributable to noncontrolling sts	2019ales\$ 149,351bership fees3,352otal revenue152,703NG EXPENSES132,886g, general and administrative14,994bening expenses86Operating income4,737ICOME (EXPENSE)178BEFORE INCOME TAXES1,061ison for income taxes1,061isome including noncontrolling interests3,704ome attributable to noncontrolling sts(45)	20192018ales\$ 149,351\$ 138,4bership fees3,3523,3Total revenue152,703141,4NG EXPENSES132,886123,7nandise costs132,886123,7g, general and administrative14,99413,8Deerating income4,7374,4ICOME (EXPENSE)178est expense(150)(1est expense(150)(1est income and other, net178BEFORE INCOME TAXES4,7654,4sion for income taxes1,0611,2income including noncontrolling interests3,7043,5ome attributable to noncontrolling ists(45)(45)	2019 2018 ales \$ 149,351 \$ 138,434 bership fees 3,352 3,142 total revenue 152,703 141,576 NG EXPENSES 132,886 123,152 g, general and administrative 14,994 13,876 bering expenses 86 68 Operating income 4,737 4,480 ICOME (EXPENSE) 121 est expense (150) (159) est income and other, net 178 121 BEFORE INCOME TAXES 4,765 4,442 sion for income taxes 1,061 1,263 excome including noncontrolling interests 3,704 3,179 ome attributable to noncontrolling ists (45) (45)	2019 2018 2017 Image: equation of the

Appendix B. Item II. Excerpt from Costco's Management's Discussion and Analysis

Form 10-K for the period ending September 1, 2019, Filed with the SEC October 11, 2019

Gross Margin

	2019	2018	2017
Net sales	\$ 149,351	\$ 138,434	\$ 126,172
Less merchandise costs	132,886	123,152	111,882
Gross margin	\$ 16,465	\$ 15,282	\$ 14,290
Gross margin percentage	11.02%	11.04%	11.33%

Appendix B. Item III. Data Aggregator.

Wall Street Journal data on Costco

scal year is September-August. All values USD Millions.			2019	2018
ales/Revenue			152,703	141,576
Sales Growth			7.86%	9.73%
ost of Goods Sold (COGS) incl. D&A			132,886	123,152
COGS excluding D&A			131,394	121,715
Depreciation & Amortization Expense			1,492	1,437
COGS Growth			7.90%	10.07%
ross Income			19,817	18,424
Gross Income Growth			7.56%	7.47%
Gross Profit Margin			12.98%	-
G&A Expense BofA GLOBAL RESEARCH			14,994	13,876
Other SG&A			14,994	13,876
SGA Growth			8.06%	7.15%
BIT IØmethod ^s – Bus Performance*			4,823	4,548
(JSS-Millions) ome/Expense	2018A	2019A	2020 54)	2021E (22)
Return on Capital Employed	15.5%	16.3%	15.5%	14.7%
Return of ing duterest income	25.0%	25.3%	23.0%26	20.9% 75
Operating Margin	3.2%	3.2%	3.2%	3.2%
freetEashiptow	2,594	2,820	3,06 ¹ FO	3,212 ¹⁵⁹
Interest Expense Growth			-5.66%	18.66%
Resthederest exalityeof Earnings*			150	159
(US\$ Millions)	2018A	2019A	2020E	2021E
Cash Realization Ratio	1.8x	1.6x	146765	1.5x 4,442
Asset Replacement Ratio	1.9x	1.9x	1.9x	1.8x
Tay Data	31.0%	25.5%	24.8%	26.5%
Tax Rate				D /
ppondixqBy Incm IV. Analyst	– B-0 4%A	Global	Research	Report on

(US\$ Millions)	2018A	2019A	2020E	2021E	2022E
Sales	141,576	152,703	163,727	173,522	185,613
% Change	9.7%	7.9%	7.2%	6.0%	7.0%
Gross Profit	18,424	19,860	21,226	22,685	24,311
% Change	7.8%	7.8%	6.9%	6.9%	7.2%
EBITDA	5,917	6,395	6,827	7,329	7,885
% Change	9.0%	8.1%	6.7%	7.4%	7.6%
Net Interest & Other Income	(38)	28	51	56	61
Net Income (Adjusted)	3,018	3,627	3,900	4,115	4,394
% Change	17.6%	20.2%	7.5%	5.5%	6.8%
Free Cash Flow Data (Aug)					
(US\$ Millions)	2018A	2019A	2020E	2021E	2022E
Net Income from Cont Operations (GAAP)	3,018	3,627	3,900	4,115	4,394
Depreciation & Amortization	1,437	1,492	1,619	1,716	1,856
Change in Working Capital	939	601	541	481	594

NA

(2,800)

2,594

107.2%

0

NA

(2,900)

2,820

8.7%

0

NA

(3,000)

3,061

8.5%

0

NA

0

(3,100)

3,212

5.0%

NA

(3,200)

3,644

13.4%

0

Deferred Taxation Charge

Other Adjustments, Net

Capital Expenditure

Free Cash Flow

% Change

Company Sector

Retailing

Company

Costco Wholesale Corporation operates membership based warehouse clubs that o limited selection of branded and private la products in a variety of merchandise catego Costco operates 780+ warehouses globally

Investment Rational

20+ new clubs per year, solid customer tra growth, and steady membership renewal r should continue, in our view, and the outlo comps ex

growth prospects and an outlook for conti same

valuation.

Stock Data

Average Daily Volume

Quarterly Earnings Estimates

Q1		2019 1.61A
Q2 Q3 Q4	28	2.01A 1.88A 2.69A

Appendix C: IFRS XBRL Income Statement by Function (green shading = identical with by Nature. Grey shading = insurance industry specific)

Preferred label	Standard label	References
[310000] Statement of comprehensive income,	http://xbrl.ifrs.org/role/ifrs/ias_1_2020-03-16_role-3100	00
profit or loss, by function of expense		
IncomeStatementAbstract	Profit or loss [abstract]	
ProfitLossAbstract	Profit (loss) [abstract]	
Revenue	Revenue	IAS 1.102 Exampler IAS 1.103 Exampler IAS 1.82 a
InterestRevenueCalculatedUsingEffectiveInterest	Interest revenue calculated using effective interest	Effective 2021-01-01 IAS 1.82 a (i) Disclosure IA
Method	method	
InsuranceRevenue	Insurance revenue	Effective 2021-01-01 IAS 1.82 a (ii) Disclosurer E
CostOfSales	Cost of sales	IAS 1.103 Disclosure/ IAS 1.99 Disclosure
GrossProfit	Gross profit	IAS 1.103 Example
OtherIncome	Other income	IAS 1.102 Example, IAS 1.103 Example, IAS 26.35
DistributionCosts	Distribution costs	IAS 1.103 Example, IAS 1.99 Disclosure
AdministrativeExpense	Administrative expenses	IAS 1.103 Example, IAS 1.99 Disclosure, IAS 26.35
OtherExpenseByFunction	Other expense	IAS 1.103 Exampler IAS 1.99 Disclosurer IAS 26.35
		In the Example, in the Ends Disclosure, in the Editor
OtherGainsLosses	Other gains (losses)	IAS 1.102 Common practice/ IAS 1.103 Common practice/
	Insurance service expenses from insurance contracts	Effective 2021-01-01 IAS 1.82 ab Disclosure/ Eff
sissued	issued	Effective 2021-01-01 IAS 1.82 ab Disclosurer Eff
	Income (expenses) from reinsurance contracts held,	Effective 2021 01 01 LAS 1 92 co
herThanFinanceIncomeExpenses	other than finance income (expenses)	Effective 2021-01-01 IAS 1.82 ac Disclosure/ Effective 2021-01-01-01-01-01-01-01-01-00-00-00-00-00
ProfitLossFromOperatingActivities	Profit (loss) from operating activities	IAS 1 95 IAS 22 1522
		IAS 1.85 Common practice, IAS 32.IE33 Example
DifferenceBetweenCarryingAmountOfDividendsPa yableAndCarryingAmountOfNoncashAssetsDistrib	payable and carrying amount of non-cash assets	IFRIC 17.15 Disclosure
uted	distributed	
		145.20.0
GainsLossesOnNetMonetaryPosition	Gains (losses) on net monetary position	IAS 29.9 Disclosure
GainLossArisingFromDerecognitionOfFinancialAss etsMeasuredAtAmortisedCost	Gain (loss) arising from derecognition of financial assets measured at amortised cost	IAS 1.82 aa Disclosure
	Finance income	
FinanceIncome		IAS 1.85 Common practice
FinanceCosts	Finance costs	IAS 1.82 b _{Disclosure}
ImpairmentLossImpairmentGainAndReversalOfIm		IAS 1.82 ba Disclosure
pairmentLossDeterminedInAccordanceWithIFRS9	(impairment loss) determined in accordance with IFRS 9	
InsuranceFinanceIncomeExpensesFromInsurance	Insurance finance income (expenses) from insurance	Effective 2021-01-01 IAS 1.82 bb Disclosurer Effective
ContractsIssuedRecognisedInProfitOrLoss	contracts issued recognised in profit or loss	
FinanceIncomeExpensesFromReinsuranceContract	Finance income (expenses) from reinsurance contracts	Effective 2021-01-01 IAS 1.82 bc Disclosurer Effective
sHeldRecognisedInProfitOrLoss	held recognised in profit or loss	
${\tt ShareOfProfitLossOfAssociatesAndJointVenturesA}$	Share of profit (loss) of associates and joint ventures	IAS 1.82 c Disclosure, Effective on first application
ccountedForUsingEquityMethod	accounted for using equity method	
OtherIncomeExpenseFromSubsidiariesJointlyContr		IAS 1.85 Common practice
olledEntitiesAndAssociates	controlled entities and associates	
${\it GainsLossesArisingFromDifferenceBetweenPrevio}$	Gains (losses) arising from difference between previous	IAS 1.82 ca _{Disclosure}
$us Carrying Amount \\ And FairValue \\ Of Financial \\ Assets$		
ReclassifiedAsMeasuredAtFairValue	reclassified out of amortised cost into fair value through	
	profit or loss measurement category	
eq:cumulativeGainLossPreviouslyRecognisedInOther	Cumulative gain (loss) previously recognised in other	IAS 1.82 cb _{Disclosure}
	comprehensive income arising from reclassification of	
$Of {\sf F} in ancial {\sf AssetsOutOfF} air {\sf ValueThroughOtherCo}$	-	
	comprehensive income into fair value through profit or	
LossMeasurementCategory	loss measurement category	
${\sf HedgingGainsLossesForHedgeOfGroupOfItemsWite} \\$	Hedging gains (losses) for hedge of group of items with	IFRS 7.24C b (vi) Disclosure/ IFRS 9.6.6.4 Disclosure
hOffsettingRiskPositions	offsetting risk positions	
ProfitLossBeforeTax	Profit (loss) before tax	IAS 1.102 Exampler IAS 1.103 Exampler IFRS 5.33
IncomeTaxExpenseContinuingOperations	Tax income (expense)	IAS 12.79 Disclosure/ IAS 12.81 c (ii) Disclosure/ IA
ProfitLossFromContinuingOperations	Profit (loss) from continuing operations	IAS 1.81A a Disclosure/ IFRS 12.B12 b (vi) Disclosure/
ProfitLossFromDiscontinuedOperations	Profit (loss) from discontinued operations	IAS 1.82 ea Disclosure, IAS 1.98 e Disclosure, IFRS
ProfitLoss	Profit (loss)	IAS 1.106 d (i) Disclosure/ IAS 1.81A a Disclosure/ I
ProfitLossAttributableToAbstract	Profit (loss), attributable to [abstract]	usclosure/
ProfitLossAttributableToOwnersOfParent	Profit (loss), attributable to owners of parent	IAS 1.81B a (ii) Disclosure
ProfitLossAttributableToNoncontrollingInterests	Profit (loss), attributable to non-controlling interests	IAS 1.81B a (i) Disclosure IFRS 12.12 e Disclosure
interests		
EarningsPerShareExplanatory	Earnings per share [text block]	IAS 33.66 Disclosure
EarningsPerShareAbstract	Earnings per share [abstract]	
EarningsPerShareTable	Earnings per share [abstract]	IAS 33.66 Disclosure
ClassesOfOrdinarySharesAxis	Classes of ordinary shares [axis]	IAS 33.66 Disclosure
OrdinarySharesMember	Ordinary shares [member]	
EamingsPerShareLineItems	Earnings per share [line items]	IAS 1.79 a Common practice, IAS 33.66 Disclosure
BasicEarningsPerShareAbstract	Basic earnings per share [abstract]	
	Basic earnings per share [abstract] Basic earnings (loss) per share from continuing operations	145 33 66
	Basic earnings (loss) per share from discontinued operation	
BasicEarningsLossPerShare	Total basic earnings (loss) per share	IAS 33.66 Disclosure
-		
DilutedEarningsPerShareAbstract	Diluted earnings per share [abstract]	145.33.55
DilutedEarningsPerShareAbstract DilutedEarningsLossPerShareFromContinuingOpera	Diluted earnings (loss) per share from continuing operation	
DilutedEarningsPerShareAbstract DilutedEarningsLossPerShareFromContinuingOpera		

Appendix D: IFRS XBRL Excerpt for Income Statement by Nature of Expense (green shading = identical with by Function).

[320000] Statement of comprehensive income, profit	<pre>http://xbrl.ifrs.org/role/ifrs/ias_1_2020-03-16_i</pre>		
or loss, by nature of expense	_		
IncomeStatementAbstract	Profit or loss [abstract]		
ProfitLossAbstract	Profit (loss) [abstract]		
Revenue	Revenue	IAS 1.102 _{Example} , IAS 1.	
$\label{eq:linear} Interest Revenue Calculated Using {\tt EffectiveInterestMethod} \\$	Interest revenue calcula	Effective 2021-01-01 IA	
InsuranceRevenue	Insurance revenue	Effective 2021-01-01 IA	
OtherIncome	Other income	IAS 1.102 _{Example} , IAS 1.	
ChangesInInventoriesOfFinishedGoodsAndWorkInPro	Increase (decrease) in i	IAS 1.102 Example, IAS 1.5	
$Other Work {\it Performed By Entity And Capital is ed}$	Other work performed	IAS 1.85 _{Common practice} , I	
RawMaterialsAndConsumablesUsed	Raw materials and cons	IAS 1.102 Example, IAS 1.5	
EmployeeBenefitsExpense	Employee benefits expe	IAS 1.102 _{Example} , IAS 1.	
DepreciationAndAmortisationExpense	Depreciation and amort	IAS 1.102 _{Example} , IAS 1.	
ImpairmentLossReversalOfImpairmentLossRecognised	Reversal of impairment	IAS 1.99 _{Disclosure}	
OtherExpenseByNature	Other expenses	IAS 1.102 _{Example} , IAS 1.	
OtherGainsLosses	Other gains (losses)	IAS 1.102 Common practice	