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The Effect of SG&A on Analyst Forecasts and the Case of Distribution Industries

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Abstract

Purpose - This study investigates whether financial analysts consider the intangible investment implicit in selling, general, and administrative (SG&A) expenditures to forecast firms' future earnings.
Research design, data, and methodology - Using 52,609 U.S. firm-year observations spanning 1984-2016, this study examines the association between the Intangible investment implicit in SG&A expenditures and properties of analysts' earnings forecasts. To estimate the Intangible investment of SG&A, I decompose SG&A excluding R&D and advertising expenditures into maintenance and investment components following Enache and Srivastava (2017).
Results - The main results show that analysts' earnings forecast errors and dispersion in analysts' forecasts increase with the intangible investment derived from SG&A because the investment component of SG&A affects future earnings and the uncertainty of those earnings. However, these results are weakened in the wholesale and retail industries where firms have a higher level of investment component of SG&A. I attribute the weaker results to low R&D expenditures in those industries.
Conclusion - This study indicates that financial analysts incorporate the intangible investment of SG&A into their earnings forecasts differently across firms and industries. Furthermore, this study supports the argument for the separate reporting of the investment nature of SG&A from other operating expenses such as maintenance nature of SG&A.

Keywords: Intangible Investments, SG&A, Distribution Industries.

JEL Classifications: L81, M10, O32.

1. Introduction

Recent studies shed new light on future value created by selling, general, and administrative (SG&A) expenditures due to an intangible investment nature of SG&A (Enache & Srivastava, 2017; Banker et al., 2019).

SG&A expenditures capture not only the ordinary maintenance costs incurred in the normal process of business, but also the intangible investment in information technology, market research and strategy, customer relationships improvement, and human capital. However, under the generally accepted accounting principles (GAAP), SG&A expenditures are required to be expensed immediately after incurred, implying that all economic benefits generated by the current SG&A expenditures are limited to the current period.

Contrary to this accounting treatment, prior literature suggests that there exits some portion of SG&A that may affect the future earnings. Enache and Srivastava (2017) estimate the investment component from the SG&A expenditures and show that it is strongly associated with future firm performance and its uncertainty. Furthermore, Banker et al. (2019) present that the stock market and financial analysts assess the future values of SG&A alongside current SG&A. Given that investors believe some portion of SG&A entails future benefits, financial analysts may consider them when they forecast earnings.

To investigate whether analysts consider the intangible investment implicit in SG&A to forecast firms' future earnings, I employ a method developed by Enache and Srivastava (2017). I ground my approach in the fact that future benefits of any implicit investment of SG&A are indeterminable like R&D investments. In prior literature, the R&D investments are known to contribute to future benefits but they are currently expensed because of uncertainty

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about when or how much the future benefits may be realized. Therefore, whereas financial analysts reflect the future value of R&D in their forecasts, their earnings forecasts are less accurate and more dispersed due to the uncertainty of R&D future benefits (Barron et al., 2002; Kwon 2002; Gu & Wang, 2005; Anagnostopoulou, 2010). Likewise, if analysts consider the investment component from the SG&A expenditures when they forecast future earnings, their earnings' forecasts will feature a notable degree of errors and dispersion because of uncertainty of future benefits from the investment component of SG&A.

Using 52,609 U.S. firm-year observations from 1984 to 2016, this study documents that the financial analysts take the intangible investment component of SG&A into account to forecast future earnings and hence their earnings forecast errors and dispersion are positively associated with the investment component of SG&A due to its uncertainty of benefits realization in the future. For wholesale and retail industries, however, the main finding disappears except for a weak relation between analysts' forecast dispersion and the investment component of SG&A in the retail industry. From sub-sample analyses, this study suggests that the weaken results may come from a negligible level of R&D in those industries. Overall, I propose that financial analysts incorporate the intangible investment of SG&A into their earnings forecast differently across firms and industries.

This study is closely related to two recent studies that focus on future value of SG&A. Enache and Srivastava (2017) demonstrate the future benefits from the investment component of SG&A and uncertainty of those benefits relying on stock investors' expectation. I differ in that I suggest that analysts recognize the future values of SG&A but they are uncertain about when or how much the future values are realized in the future. Therefore, their earnings forecast errors and dispersion in earnings' forecasts increase with the level of investment of SG&A. Banker et al. (2019) also show that analysts' forecast errors are positively related with the future value created by current SG&A. This study differs in that it does not use the future value of SG&A directly but the investment component of SG&A which will affect future earnings. Furthermore, the findings that the maintenance and investment components of SG&A affect the analysts' earnings forecast errors and dispersion oppositely support the separate reporting of the maintenance and investment components of SG&A, argued by Enache and Srivastava (2017).

2. Literature review and hypotheses

2.1. Intangible investment of SG&A

Under current U.S. GAAP, SG&A and R&D expenditures are expensed immediately because it is assumed their benefits pertain to current rather than future periods. Although most empirical research argues that currently expensed R&D is relevant for predicting earnings (Barron et al., 2002; Kwon 2002; Gu & Wang, 2005; Anagnostopoulou, 2010), few studies examine the relation between SG&A and future earnings.

Abarbanell and Bushee (1997) argue that financial analysts fail to incorporate SG&A information correctly into earnings forecasts. However, SG&A outlays are diverse. Weiss (2010) finds that a "sticky" portion of SG&A affects future earnings and accuracy of analysts' earnings forecasts. Chen et al. (2012) relate part of SG&A cost asymmetry (stickiness) to the agency problem caused by empire-building managers. Banker et al. (2011) attend to future value created by SG&A. Srivastava (2014) highlights an increase in intangibles reported in SG&A over the past 40 years. More specifically, Enache and Srivastava (2017) derive an investment component from current SG&A and show it affects future earnings and their uncertainty. Banker et al. (2019) suggest that analysts revise long-term growth forecasts upward for firms with higher anticipated SG&A expenditures when SG&A information is released and analysts' forecast errors are positively associated with the future value predicted by current SG&A.

2.2. Analysts' earnings forecasts and Intangible investment of SG&A

Given that financial analysts play a role in predicting future earnings in situations where current earnings are less useful in estimating future earnings due to fully-expensing of some intangible outlays, the intangible investment component of SG&A may therefore affect the forecasts of financial analysts.

Prior literature has mostly dealt with the relation between analysts' earnings forecasts and R&D expenditures because the R&Ds are separately reported and their uncertainty of the realization of future benefits may affect analysts' earnings forecasts. Barron et al. (2002) demonstrate that the consensus in analysts' earnings forecasts is negatively associated with R&D expenditures. Gu and Wang (2005) also suggest that the expensed R&Ds are related to the inaccurate analysts' earnings forecasts because of the uncertain future benefits of R&Ds and a rise in information complexity. Anagnostopoulou (2010) shows that the level of R&D expenditures has a negative association with the accuracy of analysts' earnings forecasts. Overall, research on the relation between analysts' earnings forecasts and R&D expenditures indicates that financial analysts consider the future value of R&D in their forecasts but their forecasts are less accurate and more dispersed due to the uncertainty of R&D future benefits.

The investment component implicit in SG&A and R&D expenditures are conceptually similar because both are immediately expensed yet their future benefits are indeterminable. However, the relation between the investment

portion of SG&A and analysts' earnings forecasts has been disregarded because of the accounting treatment focusing on the current benefits and costs of SG&A expenditures. Therefore, the following hypotheses are tested in a null form:

H1: There is no relation between financial analysts' forecast errors and the intangible investment component of SG&A.

H2: There is no relation between financial analysts' forecast dispersion and the intangible investment component of SG&A.

3. Research design

3.1. Sample selection

The sample consists of U.S. firms with available financial and analysts forecasts data. Financial statement data including SG&A expenses are obtained from Compustat XPF. Data on analysts' earnings forecasts and stock price are obtained from the Institutional Brokers' Estimate System (IBES). The main sample includes firms with the intersection of these databases and consists of 52,609 firm-year observations for 1984-2016. The industry is here defined as the Fama and French 48-industry classification (Fama & French, 1997). All financial firms identified by numbers 44-47 are excluded because their cost structures and demand for intangible investments are different from firms in other industries. All continuous variables are winsorized at 1 and 99% of their empirical distribution.

3.2. Measurement of intangible investment of SG&A

Compustat variable XSGA includes immediately expensed outlays such as R&D, advertising, investment in IT, market research, and human resources, and other maintenance activities. Among them, R&D and advertising expenses are separately reported under the compustat variables, XRD and XAD, respectively. The SG&A expenditures excluding R&D and advertising are here called the MainSG&A and all those component variables of SG&A are scaled by average total assets.

Following Enache and Srivastava (2017), I adopt the following regression to decompose the MainSG&A into a maintenance component of SG&A (MaintenanceSG&A) that supports current operation and an investment component of SG&A (InvestmentSG&A) expected to generate future benefits:

$$MainSG\&A_{i,t} = \alpha_{Ind,t} + \beta_{1,Ind,t} \times Revenues_{i,t} + \beta_{2,Ind,t} \times DummyRevenueDecrease_{i,t} + \beta_{3,Ind,t} \times Dummy\_Loss_{i,t} + \epsilon_{i,t} \quad (1)$$

where i denotes the firm, Ind denotes the industry, and t denotes the year. This regression is estimated by industry and year. MainSG&A is the SG&A expenditures excluding R&D and advertising, which are scaled by the average total assets for the year. Revenues are sales amounts scaled by the average total assets for the year. To control for the stickiness of the MainSG&A, Eq.(1) includes a dummy variable (Dummy_Revenue_Decrease) which takes the value of 1 if revenues decline and 0 otherwise. Another dummy variable for accounting loss (Dummy_Loss) is also added in the regression to control for the event of a firm's loss.

The maintenance component of SG&A (MaintenanceSG&A) is measured by the predicted value from Eq. (1), which is the product of the estimated industry-level beta for revenues (β1,Ind,t) and the firm-level revenues (Revenuesi,t). Then, the investment component of SG&A (InvestmentSG&A) is measured by subtracting the predicted value (MaintenanceSG&A) from the MainSG&A.

3.3. Research model

This study examines the relation between intangible investment of SG&A and two properties of analysts' earnings forecasts: analysts' forecast errors and dispersion in analysts' earnings forecasts. As with R&D expenditures, future benefits of the investment component of SG&A are largely indeterminable. If firms with higher investment of SG&A exhibit greater analysts' earnings forecast errors and greater dispersion in analysts' earnings forecasts, it would suggest that financial analysts incorporate the investment information implicit in SG&A into their forecasts which are less accurate and more dispersed among analysts due to the uncertainty of future benefits realization from the investment portion of SG&A. This examination is based on the following model:

$$AFE_{i,t} \text{ or } FD_{i,t} = \alpha + \gamma_1 \times MaintenanceSG\&A_{i,t-1} + \gamma_2 \times InvestmentSG\&A_{i,t-1} + \gamma_3 \times R\&D_{i,t-1} + \gamma_4 \times ADV_{i,t-1} + \sum \beta_s \times Controls_{i,t-1} + \sum IND_t + \sum YEAR_t + \epsilon_{i,t} \quad (2)$$

where i denotes the firm and t denotes the year.

To test the relation between the intangible investment of SG&A and two properties of analysts' earnings forecasts, I model all components of SG&A including the intangible investment of SG&A, control variables, industry fixed effects, and year fixed effects.

One dependent variable is analysts' earnings forecast errors (AFE) which is the absolute value of actual earnings minus median forecast earnings, deflated by stock price at the fiscal year end month (Kwon, 2002; Ali et al., 2014). To have shorter forecast horizons and to assure financial data are publicly available and reflected in stock price at the time

of computation, all earnings forecasts and stock price data are collected at the fiscal year end month. Another dependent variable—dispersion in analysts' earnings forecasts (FD)—is the standard deviation of analysts' earnings forecasts, deflated by stock price at the fiscal year end month. As components of SG&A expenditures, I utilize the investment component (InvestmentSG&A) and maintenance component (MaintenanceSG&A) of SG&A which are already explained in previous section 3.2. R&D and ADV are R&D expenses scaled by average total assets and advertising expenses scaled by average total assets, respectively.

Control variable SIZE is the natural logarithm of market value of equity. Empirical research demonstrates a positive association between firm size and precision of information available to analysts (Barron et al., 2002; Ali et al., 2014). EI denotes the percentage change in annual earnings to proxy earnings surprises. Barron et al. (2002) argue that greater earnings surprises may reduce the predictive usefulness of current earnings and affect earnings forecasts. MB is the market to book value of equity ratio to proxy for a firm's growth option. Prior literature finds that growth firms attract a larger following of analysts, who collect information beyond that in financial statements to forecast earnings. LEV is the value of a firm's interest-bearing liabilities divided by market value of equity to proxy for financial leverage. AGE is the natural logarithm of 1 plus the number of years the firm has appeared in Compustat. It is hard to forecast earnings for younger firms because of their short time-series of financial data (Li et al., 2009; Bilinski & Eames, 2019).

4. Empirical results

4.1. Descriptive statistics

Table 1 presents descriptive statistics for selected variables. Mean values of analysts' earnings forecast errors (AFE) and dispersion in forecasts (FD) are 0.023 and 0.008, respectively. I also present a raw value (FE_raw) of actual earnings minus median forecast earnings deflated by stock price in addition to its absolute value (AFE). However, as the lowest value of FE_raw does not mean the lowest forecast errors, I employ the absolute value of earnings forecast errors as a main dependent variable. Since SG&A consists of R&D expenditures (R&D), advertising (ADV), and SG&A expenses excluding R&D and advertising (MainSG&A), its mean value (0.302) equals the sum of mean values for R&D, ADV, and MainSG&A. Likewise, the mean value of MainSG&A (0.247) is the sum of mean values for the maintenance and investment components of SG&A.

Table 1: Descriptive Statistics

Variable	N	Mean	Std.Dev.	P25	Median	p75
FE_raw	52,609	-0.015	0.452	-0.003	0.000	0.002
AFE	52,609	0.023	0.452	0.001	0.002	0.007
FD	52,609	0.008	0.065	0.001	0.002	0.004
SG&A	52,609	0.302	0.232	0.129	0.252	0.421
MainSG&A	52,609	0.247	0.197	0.102	0.196	0.337
MaintenanceSG&A	52,609	0.165	0.131	0.076	0.138	0.226
InvestmentSG&A	52,609	0.082	0.169	-0.015	0.048	0.154
R&D	52,609	0.040	0.066	0.000	0.004	0.058
ADV	52,609	0.015	0.035	0.000	0.000	0.012
SIZE	52,609	6.466	1.729	5.203	6.363	7.610
EI	52,609	-0.065	3.478	-0.529	0.069	0.435
MB	52,609	3.350	3.507	1.505	2.314	3.750
LEV	52,609	0.372	0.718	0.016	0.149	0.415
AGE	52,609	2.417	0.891	1.792	2.565	3.135

Table 2 shows the correlations among analysts' forecast errors (AFE), dispersion in analysts' earnings forecasts (FD), and components of SG&A expenditures. I find that the correlation (0.385) between two dependent variables, AFE and FD, is high to be significant at 1% level. These two dependent variables show negative correlations with components of SG&A except for the investment component of SG&A. The correlation between dispersion in analysts' earnings forecasts (FD) and the investment component of SG&A (InvestmentSG&A) is 0.009 to be significant at 5% level. This positive correlation is preliminary because it might rule out the effects of control variables in multi-variate analysis.

Table 2: Correlations

	(2)	(3)	(4)	(5)	(6)	(7)	ADV (8)
AFE (1)	0.385	-0.010	-0.009	-0.012	**-0.001**	-0.007	-0.002
	<.0001	0.02	0.03	0.00	**0.74**	0.10	0.64
FD (2)		-0.009	-0.011	-0.028	**0.009**	0.003	-0.004
		0.04	0.01	<.0001	**0.04**	0.55	0.30
SG&A (3)			0.939	0.475	0.723	0.405	0.393
			<.0001	<.0001	<.0001	<.0001	<.0001
MainSG&A (4)				0.527	0.753	0.132	0.275
				<.0001	<.0001	<.0001	<.0001
MaintenanceSG&A (5)					-0.161	-0.061	0.244
					<.0001	<.0001	<.0001
InvestmentSG&A (6)						0.201	0.130
						<.0001	<.0001
R&D (7)							-0.055
							<.0001

Table 3 reports mean values of SG&A components by industry. Industries are arranged from highest to lowest according to the investment component of SG&A (InvestmentSG&A). The two industries with the highest InvestmentSG&A are wholesale and retail industries that are representative distribution industries. MaintenanceSG&A for the wholesale industry (0.072) is relatively low versus the highest value for InvestmentSG&A (0.249). The retail industry exhibits high values for the maintenance and investment components (0.293 and 0.210, respectively). In

parallel, these two distribution industries have the lowest R&D except for industries with zero R&D. InvestmentSG&A exceeds R&D for almost all industries. Overall, these industry descriptive statistics imply that the level of investmentSG&A is different across industries and I need to examine the relations between investmentSG&A and analysts' earnings forecast errors and dispersion in each industry.

Table 3: Investments of Components of SG&A by Fama and French 48-Industry Classification

Industry	SG&A	Investment SG&A	Maintenance SG&A	R&D	Advertising
Wholesale	0.328	0.249	0.072	0.002	0.004
Retail	0.556	0.210	0.293	0.001	0.045
Business services	0.401	0.148	0.173	0.064	0.014
Computers	0.384	0.141	0.124	0.107	0.010
Recreation	0.416	0.139	0.156	0.040	0.073
Medical equipment	0.438	0.129	0.214	0.086	0.008
Shipbuilding, railroad equipment	0.125	0.123	- 0.009	0.009	0.002
Food products	0.328	0.093	0.187	0.005	0.042
Fabricated products	0.162	0.083	0.066	0.010	0.002
Misc	0.296	0.062	0.169	0.048	0.016
Rubber and plastic products	0.250	0.062	0.164	0.017	0.007
Apparel	0.457	0.058	0.348	0.002	0.049
Beer and liquor	0.370	0.055	0.199	0.002	0.092
Agriculture	0.192	0.052	0.105	0.028	0.008
Automobile and trucks	0.181	0.051	0.095	0.029	0.007
Electronic equipment	0.283	0.049	0.129	0.098	0.004
Pharmaceutical products	0.388	0.049	0.192	0.115	0.020
Healthcare	0.259	0.049	0.198	0.007	0.005
Nonmetallic industries	0.066	0.046	0.019	0.000	0.000
Textiles	0.217	0.046	0.158	0.007	0.006
Petroleum and natural gas	0.063	0.045	0.016	0.002	0.001
Personal services	0.347	0.036	0.266	0.003	0.042
Chemicals	0.210	0.034	0.139	0.029	0.007
Construction materials	0.221	0.033	0.169	0.008	0.010
Measuring and control equipment	0.349	0.032	0.213	0.097	0.006
Construction	0.157	0.031	0.120	0.002	0.004
Electrical equipment	0.272	0.023	0.202	0.040	0.006
Restaurants, hotels, motels	0.158	0.023	0.101	0.000	0.034
Printing and publishing	0.330	0.022	0.277	0.004	0.025
Aircraft	0.140	0.022	0.087	0.031	0.000
Steelworks	0.100	0.018	0.076	0.005	0.001
Consumer goods	0.404	0.016	0.300	0.021	0.057
Utilities	0.100	0.012	0.086	0.001	0.001
Machinery	0.259	0.011	0.197	0.046	0.005
Business supplies	0.111	0.011	0.091	0.008	0.001
Transportation	0.171	0.003	0.163	0.000	0.004
Communication	0.169	- 0.001	0.152	0.008	0.010
Entertainment	0.149	- 0.017	0.142	0.004	0.019
Defense	0.193	- 0.020	0.171	0.033	0.009
Candy and soda	0.313	- 0.044	0.331	0.001	0.024
Tobacco products	0.230	- 0.059	0.257	0.004	0.029
Coal	0.036	- 0.093	0.129	0.000	0.000

4.2. Main test results

4.2.1. Relations between the investment component of SG&A and analysts' earnings forecast errors and dispersion

Table 4 presents the results of Eq. (2) with p-values by clustering error by firm. Eq. (2) includes industry and year fixed effect. Before examining the relation between the investment component of SG&A (InvestmentSG&A) and analysts' earnings forecast errors (AFE), I first review the relations between aggregate SG&A (or MainSG&A) and analysts' earnings forecast errors (AFE) by including aggregate SG&A (or MainSG&A) in place of InvestmentSG&A in Eq. (2).

Column (1) shows a positive relation between aggregate SG&A (SG&A) and analysts' earnings forecast errors (AFE), indicating forecasts are less accurate with respect to aggregate SG&A. Current U.S. GAAP requires that R&D and advertising expenses be reported separately; hence aggregate SG&A is easily divided into SG&A excluding R&D and advertising (MainSG&A), R&D, and advertising (ADV) outlays. Column (2) shows no relation between MainSG&A and analysts' earnings forecast errors (AFE), but analysts' earnings forecast errors (AFE) increases with R&D and advertising (ADV). Next, as MainSG&A is decomposed into maintenance and investment components of SG&A following Eq. (1), I include the maintenance component (MaintenanceSG&A) and investment component (InvestmentSG&A) of SG&A in Eq (2). As a prime finding, Column (3) shows that a positive relation appears between the investment component of SG&A (InvestmentSG&A) and analysts' earnings forecast errors (AFE). Interestingly, I find a negative relation between the maintenance component of SG&A (MaintenanceSG&A) and analysts' earnings forecast errors (AFE). As the MainSG&A includes both the maintenance and investment components at once, the mixed effect from the positive relation between AFE and InvestmentSG&A and the negative relation between AFE and MaintenanceSG&A may explain no relation between AFE and MainSG&A of Column (2). This finding supports the argument by Enache and Srivastava (2017) that the investment component of SG&A should be reported separately from the maintenance component of SG&A. With dispersion in earnings forecasts (FD) as a dependent variable, results echo those in Columns (4), (5), and (6).

All in all, these results—diminished accuracy and increased dispersion—reflect that analysts' earnings forecasts try to capture the uncertain benefits from the investment component of SG&A, as they do for R&D.

Table 4: Main Results

	Forecast Errors			Forecast Dispersion		
Variable	Column (1)	Column (2)	Column (3)	Column (4)	Column (5)	Column (6)
SG&A	0.016** 0.03			0.006*** 0.00		
MainSG&A		0.006 0.42			0.002 0.36	
Maintenance SG&A			-0.023** 0.02			-0.006* 0.07
Investment SG&A			0.017* 0.08			0.005*** 0.00
R&D		0.074*** 0.00	0.061*** 0.00		0.031*** <.0001	0.027*** <.0001
ADV		0.050* 0.05	0.054** 0.04		0.017*** 0.00	0.018*** 0.00
SIZE	-0.005*** <.0001	-0.006*** <.0001	-0.006*** <.0001	-0.003*** <.0001	-0.003*** <.0001	-0.003*** <.0001
MB	-0.001* 0.09	-0.001* 0.07	-0.001 0.08	-0.000 0.33	-0.000 0.19	0.000 0.23
EI	0.000 0.57	0.000 0.55	0.000 0.54	-0.000 0.78	-0.000 0.84	0.000 0.87
LEV	0.056*** <.0001	0.056*** <.0001	0.055*** <.0001	0.013*** <.0001	0.013*** <.0001	0.013*** <.0001
AGE	-0.003** 0.01	-0.003** 0.03	-0.002 0.04	-0.001* 0.09	-0.000 0.25	0.000 0.32
Intercept	0.038** 0.02	0.038** 0.01	0.043*** <.0001	0.021*** <.0001	0.021*** <.0001	0.023*** <.0001
Industry/Year Fixed Effect	YES	YES	YES	YES	YES	YES
Adj.R^2	0.010	0.010	0.010	0.036	0.036	0.036
N	52,609					

4.2.2. Sub-sample analyses across industries

The implicit investment component of SG&A varies substantially across industries. Therefore, I reexamine the relations between the investment component of SG&A and analysts' earnings forecast errors and dispersion in the wholesale and retail industries which are top 2 industries with highest investment component of SG&A. Table 5 reports that there is no relation between the investment component of SG&A and analysts' earnings forecast errors and dispersion in the wholesale and retail industries only except for a weak relation between analysts' forecast dispersion and the investment component of SG&A in the retail industry. In Table 5, Panel C, I show qualitatively similar results if I include the wholesale, retail, and transportation industries at the same time as a whole distribution industry.

I note that these distribution industries spend less on R&D. Considering that analysts generally have industry-specific knowledge and experience, those who specialize in industries with low R&D likely ignore whether the investment component of SG&A affects future earnings. Next, I compare the relations between investment component of SG&A, earnings forecast errors, and forecast dispersion for industries with high versus low R&D. As a sub-sample

Table 5: Subsample analyses using wholesale, retail, and whole distribution Industries

Panel A: Wholesale Industry

	Forecast Errors			Forecast Dispersion		
Variable	Column (1)	Column (2)	Column (3)	Column (4)	Column (5)	Column (6)
SG&A	-0.015 0.18			-0.005 0.25		
MainSG&A		-0.015 0.21			-0.005 0.24	
Maintenance SG&A			-0.038 0.68			-0.041 0.05
Investment SG&A			-0.014 0.20			-0.004 0.32
R&D		0.027 0.62	0.017 0.79		0.038 0.24	0.023 0.50
ADV		-0.099 0.10	-0.103 0.11		0.008 0.81	0.001 0.98
Controls	YES	YES	YES	YES	YES	YES
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Adj.R^2	0.032	0.031	0.031	0.051	0.051	0.053
N	2,376					

Panel B: Retail Industry

	Forecast Errors			Forecast Dispersion		
Variable	Column (1)	Column (2)	Column (3)	Column (4)	Column (5)	Column (6)
SG&A	-0.009 0.34			0.001 0.63		
MainSG&A		-0.008 0.48			0.002 0.46	
Maintenance SG&A			-0.045 0.03			-0.005 0.15
Investment SG&A			0.008 0.49			0.005* 0.08
R&D		-0.019 0.82	-0.039 0.65		0.006 0.78	0.002 0.92
ADV		0.007 0.87	0.014 0.76		-0.003 0.71	-0.002 0.81
Controls	YES	YES	YES	YES	YES	YES
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Adj.R^2	0.037	0.036	0.037	0.068	0.068	0.069
N	4,261					

Panel C: Distribution Industry

	Forecast Errors			Forecast Dispersion		
Variable	Column (1)	Column (2)	Column (3)	Column (4)	Column (5)	Column (6)
SG&A	0.010* 0.06			0.003* 0.07		
MainSG&A		0.007 0.33			0.002 0.20	
Maintenance SG&A			0.002 0.88			0.001 0.66
Investment SG&A			0.010 0.16			0.003 0.14
R&D		0.007 0.88	0.001 0.99		0.022 0.29	0.020 0.32
ADV		0.065* 0.09	0.070* 0.09		0.009 0.19	0.010 0.18
Controls	YES	YES	YES	YES	YES	YES
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Adj.R^2	0.037	0.036	0.037	0.061	0.061	0.061
N	7,613					

of the former category, I select firms in the pharmaceutical products and computer industries, the two industries for which R&D is highest in Table 3. As a sub-sample of industries with low R&D, I select firms in restaurants et al., transportation, and coal, for which R&D investment is zero.

As expected, Table 6 shows no relation between the investment component of SG&A and forecast errors and dispersion in earnings forecasts of industries with low R&D. High R&D industries exhibit positive relations between the investment component of SG&A and analysts' earnings forecast errors and dispersion. I surmise that negligible R&D explains the absence of relation between the investment component of SG&A and analysts' earnings forecast errors and dispersion in the wholesale and retail industries.

Table 6: Subsample analyses using industries with high vs. low R&D

	Low R&D Industry		High R&D Industry	
Variable	Forecast Errors	Forecast Dispersion	Forecast Errors	Forecast Dispersion
InvestmentSG&A	0.006 0.42	0.005 0.19	0.021* 0.09	0.016*** 0.00
R&D	0.213* 0.08	0.193* 0.06	0.047** 0.02	0.027*** 0.00
ADV	-0.039 0.33	-0.027 0.38	-0.021 0.64	-0.017 0.40
Controls	YES	YES	YES	YES
Year Fixed Effect	YES	YES	YES	YES
Adj.R^2	0.098	0.064	0.046	0.059
N	2,429		4,834	

5. Conclusion

Using 52,609 U.S. firm-year observations from 1984 to 2016, this study investigates whether the intangible investment implicit in SG&A expenditures affects analysts' earnings forecasts. I first show that analysts consider the intangible investment derived from SG&A but their earnings forecasts are less accurate and more dispersed with the level of investment component of SG&A due to its uncertainty for future realization of benefits. I next document that, in cross-industry sub-sample analyses, the main findings are weakened in the wholesale and retail industries with highest investment component of SG&A. Sub-sample analyses suggest that the low level of R&D in those industries may be one of reasons for the absence of relation between the investment component of SG&A and analysts' earnings forecast errors and dispersion in the wholesale and retail industries.

This study contributes to extant literature on future benefits of SG&A by providing evidence that analysts consider future value from the investment component of SG&A to forecast future earnings. There is no research on whether financial analysts assess the investment nature implicit in SG&A even though their earnings forecasts are less accurate and more dispersed due to its uncertainty of future benefits. Furthermore, this study supports the argument for the separate reporting of the investment nature from the maintenance or other operating nature of MainSG&A. Enache and Srivastava (2017) claim that the predictability of earnings and stock returns improve when MainSG&A is decomposed into the investment and maintenance components because these components' characteristics differ. This study suggests that there are opposite effects of the investment and maintenance components on analysts' forecast errors and dispersion but no effect of MainSG&A on them. This finding implies that the characteristics of investment and maintenance components are different and hence should be reported separately. Finally, I underline the possibility that the investment nature of SG&A of firms in the low R&D industries would be neglected by analysts who may have more industry-level expertise than firm-level expertise. This study leaves for future research the analyst-specific characteristics relating to the components of SG&A and their future values.

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