The economic consequences of the retail inventory method

Gregory G. Kaufinger
Kutztown University of Pennsylvania

Chris Neuenschwander
Anderson University (SC)

Melanie Strow Peddicord
Anderson University (IN)

ABSTRACT

The purpose of this study is to evaluate whether the use of the retail method of accounting for merchandise inventory results in significantly different economic outcomes as measured by profits, cash conversions, and market returns. This paper employs a panel data of publicly traded retail firms which use either the retail inventory method or a traditional cost-based method. The hypothesis is tested using ANOVA and logistic regression. After controlling for firm size and various expense types affecting cost of goods sold, this study found that firms using the retail method had lower gross margins but shorter cash conversion cycles. Contrary to expectations, the relationship between stock returns and market returns was not significant. The findings suggest that the firms choosing the retail method may be willing to sacrifice their ability to effectively control inventory costs because they have better working capital management. In some sense, these findings are consistent with established literature that suggests that the choice of accounting method is a function of firm-specific characteristics.

Keywords: Retail Inventory Method, Inventory Valuation, Economic Consequences, Accounting Choice

INTRODUCTION

2015 year-end retail inventories in the US were approximately $579 billion (US Census Bureau, 2015). Determining the value of that inventory is a classic problem in accounting (Sunder, 1975; Kaplan, 1988; Wampler and Holt, 2013). Conventional inventory valuation methods include First-in, First-out (FIFO); Last-in, First-out (LIFO); and average cost (AC). A fourth valuation method that is generally accepted but unique to merchandisers is the retail inventory method (RIM). To value inventory and ultimately costs of sales, this convention approximates inventory cost by using a cost complement derived from current retail prices; as such, this approach deviates from traditional methods which use the actual cost of inventory for valuation (Kissire, 1996).

Values are necessary to make economic decisions (Mattessich, 2006), and within generally accepted accounting principles (GAAP), the choice of inventory valuation method is elective (FASB, ASC 330-10-30). However, accounting choices have economic consequences (Holthausen and Leftwich, 1983); individual valuation methods may chronicle the related underlying economic activity differently (Easton *et al.*, 2018). Accounting studies evaluating economic effects have traditionally considered cost-based methods like LIFO (Fields *et al.*, 2001). In contrast, empirical research using RIM is noticeably absent. Yet, examining the economic consequences of RIM is warranted for three reasons. First, RIM is known to be inaccurate (Most, 1967). It is an averaging technique that may distort inventory cost and produce inaccurate amounts, especially when the purchases mix does not match the ending inventory mix (Powers, 1971; Kissire, 1996). Second, RIM is used exclusively in one of the largest and most influential sectors in the United States. Retail's financial performance is frequently cited as a bellwether for overall economic activity and a harbinger for market movement (Hong *et al.*, 2007). And, unlike most sectors, inventory investment represents roughly one-third of retail's total assets (Gaur *et al.*, 2005) making its valuation all the more important. Third, heterogeneous valuation methods are believed to affect accounting comparability in capital markets as comparability is negatively associated with the cost of debt and equity (Fang *et al.*, 2012; Imhof *et al.*, 2017). Stressed retailers employing RIM, like JC Penney, Sears Holdings, or 99 Cents Only Stores (Linnane, 2017), and credit analysts may be particularly interested in understanding differential effects of inventory valuation before seeking or extending additional capital. Yet, potential asymmetric economic effects arising from RIM remain unsearched.

Therefore, the objective of this research is to explore the economic consequences of the voluntary use of the retail inventory method. Specifically, this study compared the profitability, cash conversion, and market returns for RIM and non-RIM publicly traded merchandisers during a 10-year period of significant industry turmoil. This research contributes to the literature by expanding our understanding of the use and financial effects of inventory valuation methods.

BACKGROUND

In retail accounting, the most common procedure used to value retail stock is the retail inventory method ("Overheard," 2013). Harvard professor Malcolm McNair is considered the father of RIM (Greer, 1985), and his convention was originally created to address valuation problems triggered by rapid price declines and stock obsolescence in fashion clothing in department and women's apparel stores in the early 1900s (Schmalz, 1934). The approach was designed to use selling prices and total sales because they were readily available to the merchant

(Switzer, 1994). While its purpose was to provide for pragmatic merchandise management and control (Lothman, 1934), its benefits were its simplicity to achieve valuation at any time without a physical count (Warfield *et al.*, 2008), its ability to control and report markdowns (Walsh and Jeacle, 2003), and its reduction in clerical costs (Most, 1967). By 1970, nearly all major department stores, chain stores, and large specialty stores had adopted the method (Powers, 1971).

RIM approximates inventory cost by using marked retail prices and a cost complement ratio to arrive at cost-basis values (McNair and Hersum, 1952; Switzer, 1994); it is considered a reversed mark-up procedure (FASB, ASC 330-10-30). A simplified example in Table 1 (Appendix), which excludes the impact of additional markups, permanent markdowns and promotional/clearance markdowns, highlights the method's derivation of ending book inventory and cost of sales. The method involves recording beginning inventories at both cost and retail prices ($500; $700); next, purchases at both cost and retail ($200; $300) are added to the beginning inventory values to determine stock available for sale ($700 at cost; $1,000 at retail). Next, a cost complement percent (70%) is derived from the available for sale balances; this ratio represents the relationship of cost ($700) to selling price ($1,000) (Kissire, 1996). Ending inventory at retail ($600) is calculated by subtracting sales ($400) from available stock at retail ($1,000); the cost complement percent (70%) is applied to ending inventory at retail ($600) to determine its associated cost-basis ($420). Finally, cost of sales ($280) is derived by subtracting ending inventory at cost ($420) from inventory available for sale at cost ($700). Note that "cost" under RIM is not the sum of vendor invoices, but rather an average cost adjusted for price changes as indicated in Table 1 (Appendix) (Powers, 1971).

RIM is generally accepted because it accomplishes the lower of cost or market (LCM) tenet in GAAP for the reason that current retail prices reflect markdowns and inventory depreciation (Lothman, 1934; Schmalz, 1934; McNair and Hersum, 1952). Yet, RIM's ability to achieve GAAP's conservative requirement relies on two considerations: (1) current prices reflect realizable market prices, and (2) deviations from a stock's average markup are insignificant (Powers, 1971). Practically speaking, to achieve LCM through RIM, merchandisers must both properly account for markdowns in the cost complement calculation and correctly value inventory at the department level where intradepartmental mark-ups do not vary widely (McNair and Hersum, 1952). Regarding the second matter, one contrarian (Lindbeck, 1966) was expressly concerned about large price variations within stock. He asserted that conventional RIM was not "essentially the same" as LCM because application of LCM to individual products when valuation is based on group averages was questionable; but, for the most part, his reservations were ignored.

RIM is not without limitations, however. Most agree that its primary weakness is its averaging effect on valuation (Kissire, 1996; Will, 1970); in certain situations, especially where the mix of high-markup and low-markup products significantly vary between beginning and ending inventories, RIM produces valuations 3% to 7% higher than "cost" (Powers, 1971). Proponents of RIM acknowledge the averaging effect, but generally discount the impact by noting that no valuation method is perfect and that **properly operated** [emphasis added], there is no fundamental weakness in the method (Schmalz, 1934). Secondary limitations include the method's inadequate support of vendor cost analysis (Smyth, 2015), and the convention's additional clerical requirements regarding the approach's Achilles heel: markdowns (McNair and Hersum, 1952).

Beyond these shortcomings, the retail method's relevance and reliability has been questioned at various points in time. For example, Larson (1991), Switzer (1994), and Rosenblum (2016) progressively cast doubt on RIM's antiquated approach to valuation in light of advances in technology such as POS systems and RFID. Fox-Simpson (2007) expressed concern over increasing occurrences of significant financial misstatements stemming from it use. But perhaps the most damning assessment of RIM's relevance in the modern era is from Walsh and Jeacle (2003) who emphatically declared that the method's raison d'etre ceased to exist. Yet, these critical voices and their concerns have been largely disregarded.

Today, the retail method of inventory remains entrenched in retail accounting. Some merchandisers, such as The Children's Place, Abercrombie & Fitch, and Cato Corporation have moved to cost-based methods in the last 10 years, but the majority continue to value inventory under RIM. Yet, to our knowledge, no study in the modern era has attempted to understand the economic implications of price-based inventory valuation; RIM's use in the retail sector provides a unique environment to study this concept. As such, this study attempts to fill a gap in the literature by investigating the economic consequences of RIM by comparing assorted financial metrics and market returns between RIM and non-RIM firms.

LITERATURE REVIEW

The retail method's widespread adoption among merchandisers was supported in the literature from the 1930s to the 1950s; the literature affirmed the technique's validity as an acceptable valuation methodology despite its known inaccuracies and its susceptibility to manipulation by buyers (Schmalz, 1934; McNair and Hersum, 1952). In fact, the literature was so sanctioning that discussion on RIM effectively died after the 1950s and most subsequent, substantive inquiry regarding inventory valuation moved on to either arguments over LIFO and its tax effects, or to investigations concerning determinants of cost-based inventory method choice.

Yet, despite the "conclusiveness" of the early RIM manuscripts, the literature from that period was not empirical in nature. Moreover, the paucity of inquiry since the 1950s contributes to perceptions that RIM is an accounting black box – ignored by standard setters, unchallenged by investigators, and barely taught in accounting texts (Walsh and Jeacle, 2003). Recent events might reinforce this paradigm because standard setting bodies continue to eschew RIM even though financial statement users are calling for more clarity on inventory valuation methods. As evidence, accounting standards update *ASU 2015-11 – Simplifying the Measurement of Inventory* excludes those firms using RIM from applying the update because the Financial Accounting Standards Board (FASB) was concerned that its application could increase transition costs, produce unintended outcomes, and provide limited benefits (Ernst & Young, 2015). Likewise, RIM is omitted from US GAAP and IFRS convergence (Penner *et al.*, 2016), undoubtedly the result of pushback from the retail sector and the National Retail Federation (see e.g., Kohut, 2009). In contrast, stakeholders are asking for more inventory disclosure (Ernst & Young, 2014; Katz, 2017), likely because inventory valuation is not comparable between firms using different valuation models (Penner *et al.*, 2016). In an interesting move, FASB is entertaining feedback on a 2017 proposal requiring firms to "provide qualitative and quantitative information about the critical assumptions they use to calculate inventory" (Ernst & Young, 2017, p. 2). Among the proposed disclosures is the cost complement ratio (Ernst & Young, 2017) which hits at the very

heart of the retail method of accounting. But, the end result of FASB's disclosure framework is not yet known at this time; it is entirely plausible that RIM will be sidestepped once again.

While the literature on RIM is limited and anecdotal, extant literature on cost-based inventory methods, and inventory valuation in general, is robust and empirical. Dialogue on method and valuation was primarily normative in the early half of the 20th century. But in the 1970s, conversations began to emerge around positive accounting and accounting methods, specifically the economic consequences of accounting. Economic consequences is defined as the impact of accounting reports on the decision making behavior of stakeholders (Zeff, 1978). The seminal work of Holthausen and Leftwich (HL) (1983) refined our understanding of an economic consequence hypothesis; they said that accounting method choices have economic consequences if changes in accounting standards alter a firm's cash flow or stakeholders' wealth. Hunt (1985) extended HL's economic consequences notion to inventory valuation, concluding that non-LIFO adopters were concerned with the negative impact that LIFO adoption had on personal wealth. Since Hunt, this line of inquiry was advanced through, among others, (a) Niehaus (1989) who found a direct relationship between the level of outside ownership and the use of LIFO, (b) Leong, Zaima, and Buchman (1991) who surmised that a switch in inventory method (to LIFO) signals confidence in future cash flow by manager-controlled firms, and (c) Neill, Pourciau, and Schaefer (1995) who linked conservative (LIFO)/liberal (FIFO) inventory method choices to IPO valuation. More recently, DeFond and Hung (2003) reported that analysts were more likely to forecast cash flow for firms with heterogeneous accounting methods relative to their peers. Their work suggests that asymmetrical accounting methods create earnings dissonance, and to accommodate for that noise, market participants behave differently by forecasting *both* cash flows and earnings. Of note, the literature cited here – and the entire inventory-related economic consequences stream of research for that matter – rests chiefly on choices between FIFO and LIFO. Noticeably absent is the use of a price-based inventory valuation method like RIM.

A corollary line of literature looked at the economic consequences of inventory method on firm profits, typically through the lens of taxes, where the choice of inventory method increases/decreases taxable income and ultimately the tax liability (see e.g., Sunder, 1976; Biddle, 1980; Cushing and LeClere, 1992). Again, this line of research focused predominantly on LIFO/FIFO (Fields *et al.*, 2001), concluding that firms select LIFO to lower their taxable income and tax liability. Remarkably, the retail method of accounting is again missing from the conversation.

In sum, extant literature established that a firm's choice of inventory method has economic consequences, especially in the context of cash flow, stakeholder wealth, and income. It should be evident from this review, however, that researchers have not used a price-based inventory valuation method when discovering these linkages. As such, the retail industry's use of RIM provides a unique environment through which to examine the economic consequences of inventory accounting method choice. Therefore, consistent with the economic consequences hypothesis, we theorize:

> *H_1:* There are differences in profitability, cash flow, and market return between merchandisers using RIM and merchandisers using a cost-based approach

RESEARCH METHOD

Procedure

The purpose of this study is to evaluate whether the use of the retail method of accounting for inventory results in significantly different economic outcomes as measured by profits, cash conversions, and market returns. This is accomplished by comparing specific financial performance ratios of those companies who employ the retail method of accounting with those who do not. The study considers both whether the ratios are significantly different between groups as well as the favorability indicated by those ratios.

The study begins by identifying publicly traded firms in the retail sector and the inventory valuation method used in the financial statements as indicated in their published annual report. Next, the research segments firms into two groups that use either RIM or another method consistent with GAAP and compiles ten years of data for various economic ratios measuring profits, cash conversion and market returns for each firm. Second, the study employs descriptive statistics comparing the means for each ratio using an ANOVA to indicate whether the two groups are significantly different suggesting that the choice of inventory method has an impact on financial performance of that ratio. Finally, the research concludes with the development of a logistic regression model that predicts whether a specific firm uses RIM or another technique. The model identifies all of the economic ratios demonstrating significance and indicates the magnitude of each variable on the determination of group membership as well as the favorability of each ratio. For example, the model may suggest that a given profit ratio behaves differently for firms that employ the retail method while also indicating that the profit ratio is lower for those firms as well.

Sample and Data Collection

The sample is a convenience sample of 22 publicly traded companies with SIC codes from across the retail industry which included areas such as catalog & mail order, clothing, appliance, drug & grocery, restaurants, and automotive. Firms within this industry carry inventories where RIM is appropriate for calculating the value of ending inventory. Once the sample was complete, the companies were divided into (a) firms that used RIM and (b) firms that used other GAAP methods such as average cost or FIFO. The method of inventory valuation was found in the firm's annual report taken from EDGAR.com. After the firms were selected, ratios commonly used in financial statement analysis and prior literature were selected to evaluate profitability, cash conversion and market returns. Profit ratios included the gross margin, current ratio, quick ratio, and inventory turns. The cash conversion cycle was used to evaluate cash flow, and market return was evaluated by looking at stock returns versus market returns. Ten years of data was collected for each of these ratios for each company using Morningstar.com which resulted in a sample of 220 records, or n = 220. Three additional binary variables were included in the analysis which indicated whether occupancy costs, warehouse distribution costs, and inbound/outbound freight costs were a component of cost of goods sold as indicated in each firm's annual report. Finally, the inclusion of market capitalization in the model as a proxy for firm size controls for exogenous firm characteristics. Table 2 (Appendix) presents descriptive statistics for the sample.

The study employed the ANOVA as the descriptive statistic to test whether the mean for each independent variable was statistically different between firms using RIM versus other GAAP methods. The results of the ANOVA as indicated in Table 3 (Appendix) indicated that all of the means for the independent variables were significantly different with the exception of inventory turns, stock returns vs. market returns, market capitalization, and occupancy.

RESULTS

There are significant differences in profitability and the cash conversion cycle between merchandisers using RIM and merchandisers using a cost-based approach.

The study employed a binomial logistic regression model in order to determine whether the independent variables above would be predictive in indicating whether a specific firm (a) used RIM or (b) another GAAP valuation methods. The statistic was chosen for the model since it is commonly used when the dependent variable is binary and requires less assumptions to be satisfied such as normality or homogeneity of variance.

$$\text{Log}\left(\frac{\text{P(retail)}}{\text{P(non}-\text{retail)}}\right)$$
$$= \beta_{\text{retail}} + \beta_{\text{retail.market\_capitalization}}X_{\text{market\_capitalization}} + \beta_{\text{retail.gross\_margin}}X_{\text{gross\_margin}}$$
$$+ \beta_{\text{retail.current ratio}}X_{\text{current\_ratio}} + \beta_{\text{retail.quick\_ratio}}X_{\text{iquick\_ratio}}$$
$$+ \beta_{\text{retail.cash\_conversion\_cycle}}X_{\text{cash\_conversion\_cycle}} + \beta_{\text{retail.inventory\_turns}}X_{\text{inveintory\_turns}}$$
$$+ \beta_{\text{retail.stock\_return\_v\_market}}X_{\text{stock\_return\_v\_market}} + \beta_{\text{retail.occupancy\_in\_COGS}}X_{\text{occupancy\_in}_{\text{COGS}}}$$
$$+ \beta_{\text{retail.warehouse\_distribution\_in\_COGS}}X_{\text{warehouse\_distirubion\_in\_COGS}} + \beta_{\text{retail.in-out\_freight\_in\_COGS}}X_{\text{in-out\_in\_COGS}}$$

After analyzing the 220 data points, the results indicated that the model was effective in predicting whether a firm chose to use RIM as the inventory valuation method versus other GAAP options. The overall model fit the data well as indicated by the significance of the likelihood ratio test at the .01 level (p=.000). In addition, the Hosmer and Lemeshow test of goodness-of-fit test indicated insignificance (p=.932) which demonstrates overall model fit. The explanatory power of the model was strong as indicated by the pseudo r-square (Cox and Snell R^2 = .476, Naglekerke R^2 = .636). The model clearly suggests that firms using RIM do experience some significantly different outcomes from non-RIM firms.

In addition, the classification table further supports overall model goodness-of-fit by accurately predicting whether each data point indicated the firm used RIM or another method. The model correctly predicted group membership of each record 79.1% of the time as indicated by the classification matrix in Table 4 (Appendix). Multicollinearity was assessed by reviewing Pearson correlation coefficients and the variance inflation factor (VIF) of each independent variable. While moderate collinearity exists on the Current Ratio variable, overall, multicollinearity is not an issue.

Next we examined the significance and explanatory power of each of the independent variables which is displayed in Table 5 (Appendix). The model indicated that three of the independent variables contributed to the explanatory power of the model including gross margin, cash conversion cycle, and market capitalization ($p < .05$). Notably, the pseudo r-square and classification matrix does not change much with the inclusion of the market capitalization control variable, suggesting that while it is significant, this latter variable does not offer much

explanatory power. The three binary variables, occupancy, warehouse & distribution, and in & out bound freight cost of goods sold were significant to overall model fit, but the individual variables did not contribute to the odds calculation as indicated by coefficients that were near zero relative to the other variables.

While the model indicated that the various ratios were different between groups, the signs varied by variable as indicated in Table 5 (Appendix). Specifically, firms that use RIM would have lower gross margins than firms using other inventory valuation methods. In contrast, the cash conversion cycle would be shorter for firms that employ RIM.

DISCUSSION

A large number of retail firms consistently use RIM to value ending inventory irrespective that technology has advanced to effectively track actual inventory costs on specific items sold to customers. This study suggests that retail firms using RIM do experience different outcomes in comparison to retail firms using other methods. Specifically, when controlling for occupancy, warehousing, and freight costs (which are frequently incorporated by a retailer into cost of goods sold) as well as firm size, the firms using RIM had lower gross margins but shorter cash conversion cycles. Lower gross margin was an expected finding because RIM is known to produce valuations higher than cost. In this study, RIM generated a 6% higher valuation than cost, resulting in lower profitability as measured by gross margin. A difference in cash conversion was also expected because prior research found that accounting methods may alter cash flow (Holthausen & Leftwich, 1983). Surprisingly, however, the sampled firms employing RIM had shorter cash conversion cycles; this means that the RIM firms tied up less capital in their procure-to-pay and order-to-cash business processes. It is conceivable that the types of retailers (e.g., Department Store or Consumer Electronics Store) used in the study contributed to this finding.

The economic implications of differences in gross margin and cash conversion suggests that while the use of RIM may result in less accurate inventory valuation, it may be favored by firms with shorter cash conversion cycles. In other words, firms that use RIM may be willing to sacrifice their ability to effectively control inventory costs because they have better working capital management. Another implication suggests that while the use of RIM is deeply entrenched in firms' operations and is assumed to provide an "appropriate" level of accuracy for inventory valuation, this assumption may be short-sighted. Based on the research results indicating that the RIM method negatively impacts profitability, managements would be compelled to further evaluate the use of the RIM method and strongly consider whether the adoption of another inventory method provides improved profitability to investors.

The results suggested that the inventory turnover ratio did not significantly contribute to the explanatory power of the model ($p > .05$). This result was not expected. Most likely, this variable was insignificant because the ratio's numerator (cost of goods sold) and denominator (average inventory) are both derived using the same valuation basis – that is, either estimated cost of goods compared to estimated inventory cost in the case of RIM firms or actual cost of goods compared to actual inventory cost in the case of non-RIM firms. While inventory valuation negatively impacts gross margin for RIM firms, it clearly does not impact the time to sell stock. In short, inventory turnover remains driven by the sales cycle, not the valuation methodology. Somewhat puzzling, however, is the paradoxical result between inventory turnover and cash conversion, especially since inventory turnover is part of cash conversion as it reflects a

firm's day's sales in inventory and the time it takes to sell stock and generate cash. There is no theoretical reason to believe that the other components of cash conversion – average collection period or average payment period – would deviate significantly between RIM and non-RIM firms, yet the results seem to suggest that this is a possibility. More investigation is necessary.

The current ratio (and its conservative cousin, the quick ratio) also did not support the hypothesis; this ratio was probably insignificant because it was not a good measure of profitability; in most research studies and financial texts, the current ratio is characterized as a liquidity ratio. Pointedly, in this case, a valuation method does not impact a firm's ability to pay its short-term debts.

Contrary to our expectation regarding stock returns, the study also suggests that markets may be unaware of the economic consequences of the RIM method which is indicated by the fact that the relationship between a stock's return and the market's return was not significant between firms using RIM and those employing other methods. If investors understood that other methods provided improved inventory accuracy and profitability, the stock return versus market return would be significantly higher for those firms choosing other methods. Further investigation is warranted by the accounting community to determine whether the elimination of RIM contributes to greater transparency to the investment community. At the very least, additional research should be conducted to conclusively establish whether the application of the RIM method results in inaccurate inventory valuation.

The results of this study may be limited by the sample size and the use of convenience sampling. The sampled firms may not be representative of the retail industry at large. In addition, it is possible that there are other exogenous variables beyond firm size that may shape the relationship between firms' inventory valuation methods and their financial results. Therefore, the results may not be generalizable to other retailers outside the sample.

CONCLUSION

Through a novel, industry-specific, price-based valuation method called the retail inventory method, this research expands our understanding of how the use of an inventory valuation method has economic consequences. The results imply that there are different economic outcomes for firms which use the retail inventory method. Here, our findings suggest that over a ten-year period, firms employing RIM underperformed their non-RIM rivals in the context of gross profits; yet, the firms employing RIM had shorter cash conversion cycles. It is plausible that firms electing to use RIM to value inventory may be willing to sacrifice their ability to effectively control inventory costs because they have better working capital management. In some sense, these findings are consistent with established literature that suggests that the choice of accounting method is a function of firm-specific characteristics. There is no evidence, however, that market-makers recognize these economic phenomenon. The results should be of interest to both market analysts and merchants who use the retail inventory method to value inventory.

REFERENCES

Biddle, G. (1980), "Accounting methods and management decisions: The case of inventory costing and inventory policy", *Journal of Accounting Research,* Vol 18, pp. 235-280.

Cushing, B. and LeClere, M. (1992), "Evidence on the determinants of inventory accounting policy choice", *The Accounting Review,* Vol 67 No. 2, pp. 355-366.

DeFond, M. L. and Hung, M. (2003), "An empirical analysis of analysts' cash flow forecasts", *Journal of Accounting and Economics*, Vol 35, pp. 73–100.

Easton, P. D., Halsey, R. F., McAnally, M. L., Hartgraves, A. L., and Morse, W. J. (2018), *Financial & Managerial Accounting for MBAs* (5th Ed.), Cambridge Business Publishers, Westmont, IL.

Ernst & Young (2014), *Disclosure effectiveness: What investors, company executives and other stakeholders are saying*, viewed 11 October 2017, http://www.ey.com/Publication/vwLUAssets/EY-disclosure-effectiveness-november-2014/$FILE/EY-disclosure-effectiveness-november-2014.pdf

Ernst & Young (2015), *To the point: FASB simplifies the subsequent measurement of inventory*, viewed 28 September 2017, http://www.ey.com/ul/en/accountinglink/publications-library-to-the-point

Ernst & Young (2017), *To the point: FASB proposed changes to inventory disclosure requirements (No. 2017-03)*, viewed 28 September 2017, www.ey.com/...inventory.../tothepoint_00156-171us_inventory_12january2017.pdf?

Fang, X., Li, Y., Xin, B., and Zhang, W. (2012), "Accounting comparability and bank loan contracting (SSRN Scholarly Paper No. ID 2138202)", Social Science Research Network, Rochester, NY.

Fields, T. D., Lys, T. Z., and Vincent, L. (2001), "Empirical research on accounting choice", *Journal of Accounting and Economics*, Vol 31 No. 1-3, pp. 255-307.

FASB (Financial Accounting Standards Board) n.d., *ASC 330-10-30*. Viewed 24 July 2017, FASB Accounting Standards Codification database.

Fox-Simpson, C. (2007), "Marking down RIM", *Retail Merchandiser,* Vol 47 No. 7, pp. 8-9.

Gaur, V., Fisher, M. L., and Raman, A. (2005), "An econometric analysis of inventory turnover performance in retail services", *Management Science,* Vol 51 No. 2, pp. 181–194.

Greer, W. (1985), "Malcolm Perrine McNair, 90, retailing expert at Harvard" *The New York Times,* 10 September.

Holthausen, R., and Leftwich, R. (1983), "The economic consequences of accounting choice: implications of costly contracting and monitoring", *Journal of Accounting and Economics*, Vol 5, pp. 77–117.

Hong, H., Torous, W., and Valkanov, R. (2007), "Do industries lead stock markets?", *Journal of Financial Economics,* Vol 83, pp. 367-396.

Hunt III, H. G. (1985), "Potential determinants of corporate inventory accounting decisions", *Journal of Accounting Research*, Vol 23 No. 2, pp. 448-467.

Imhof, M. J., Seavey, S. E., and Smith, D. B. (2017), "Comparability and cost of equity capital"' *Accounting Horizons*, Vol 31 No. 2, pp. 125-138.

Katz, D. M. (2017), *See why the FASB eyes big changes in inventory disclosure,* Viewed 18 August 2017, from http://ww2.cfo.com/financial-reporting-2/2017/02/fasb-changes-inventory-disclosure/

Kaplan, R. S. (1988), "One cost system isn't enough", *Harvard Business Review*, Vol 66 No. 1, pp. 61-66.

Kissire, D. J. (1996), "Retail inventory or cost method: Which is right for you?", *Chain Store Age*, *Vol 72 No. 5,* p. 7.

Kohut, C. (2009), *SEC Comment Letter,* Viewed 19 September 2017 from https://www.sec.gov/comments/s7-27-08/s72708-158.pdf

Larson, J.R. (1991), "Inventory accounting: The cost method makes slow but steady gains", *Retail Control,* Vol 59, pp. 13–18.

Leong, K. K., Zaima, J. K., and Buchman, T. (1991), "The effect of ownership control status on stock price reaction to the adoption of LIFO inventory", *Journal of Business Finance and Accounting,* Vol 18 No. 3, pp. 405-419.

Lindbeck, R. S. (1966), "Conventional retail--Lower than cost or market", *Accounting Review,* Vol 41 No. 2, pp. 335-338.

Linnane, C. (2017), *J.C. Penney, Gymboree and J. Crew at risk -- and it's not all Amazon's fault*. Viewed 26 July 2017, from http://www.marketwatch.com

Lothman, V. O. (1934), "The retail method of inventory", *Accounting Review,* Vol 9 No. 2, p. 175.

Mattessich, R. (2006), "The information economic perspective of accounting: Its coming of age", *Canadian Accounting Perspectives,* Vol 5 No. 2, pp. 209-236.

McNair, M. P. and Hersum, A. C. (1952), *The Retail Inventory Method and LIFO*. McGraw-Hill, New York, NY.

Most, K. (1967), "The value of inventories", *Journal of Accounting Research,* Vol 5 No. 1, pp. 39-50.

Neill, J. D., Pourciau, S. G., and Schaefer, T. F. (1995), "Accounting method choice and IPO valuation", *Accounting Horizons*, Vol 9 No. 3, pp. 68-80.

Niehaus, G. R. (1989), "Ownership structure and inventory method choice", *The Accounting Review*, Vol 64 No. 2, pp. 269–284.

"Overheard" (2013), *Wall Street Journal, Eastern Edition; New York, N.Y.*, 25 February, p. C6.

Penner, J., Kreuze, J., and Langsam, S. (2016), "Analysis of simplification of accounting initiative for inventory and update of other simplification proposals", *Journal of Corporate Accounting & Finance (Wiley),* Vol 27 No. 4, pp. 9-12.

Powers, J. T. (1971), *The retail inventory method made practical,* Financial Executives Division, National Retail Merchants Association, New York, NY.

Rosenblum, P. (2016), *The retail method of accounting is still a troublesome anachronism*, Viewed 21 July 2017, from http://www.rsrresearch.com/research/the-retail-method-of-accounting-is-still-a-troublesome-anachronism

Schmalz, C. N. (1934), "Some current problems in administering the retail inventory method", *Accounting Review,* Vol 9 No. 1, pp. 1-14.

Smyth, T. (2015), *Why the retail inventory method isn't obsolete*. Viewed 4 August 2017, from https://www.smythretail.com/general-retailing/retail-inventory-method-isnt-obsolete/

Sunder, S. (1975), "Stock price and risk related to accounting changes in inventory valuation", *The Accounting Review,* Vol 50 No. 2, pp. 305-315.

Sunder, S. (1976), "A note on estimating the economic impact of the LIFO method of inventory valuation", *Accounting Review*, Vol 51 No. 2, p. 287.

Switzer, G. J. (1994), "A modern approach to retail accounting", *Management Accounting,* Vol 75 No. 8, pp. 55-58.

U.S. Census Bureau (2015), *2015 Annual Retail Trade Survey*. Viewed 11 November 2017 from https://www.census.gov/retail/index.html.

Walsh, E. J., and Jeacle, I. (2003), "The taming of the buyer: The retail inventory method and the early twentieth century department store", *Accounting, Organizations & Society*, Vol 28 No. 7/8, p. 773.

Wampler, B., and Holt, T. (2013), "Valuing inventory at the lower of cost or market", *CPA Journal*, Vol 83 No. 1, pp. 34-39.

Warfield, T. D., Weygandt, J. J., and Kieso, D. E. (2008), *Intermediate Accounting: Principles and Analysis* (2nd Ed.), John Wiley & Sons, Inc., Hoboken, NJ.

Will, R. T. (1970), "Causation of gross margin percentage differences between intrafirm discount stores", *Journal of Retailing*, Vol 46 No. 1, p. 61.

Zeff, S. A. (1978), "The rise of economic consequences", *Journal of Accountancy,* Vol 146 No. 6, pp. 56-63.

APPENDIX

Table 1: Retail Inventory Method Example

	Cost	Retail
Beginning Inventory	$500	$700
Purchases	$200	$300
Inventory Available for Sale	$700	$1,000
Cost Complement % (Cost $ ÷ Retail $)	*70%*	
Sales		$400
Ending Inventory	$420	$600
Cost Complement % x Ending Inventory at Retail	*($600 x 70%)*	
Cost of Sales	$280	

Table 2: Descriptive Statistics

Variable	M	SD	Min	Mdn	Max	Skew.	Kurt.
Gross Margin							
Retail Method	33.3	7.3	12.3	34.7	48.0	-1.6	2.7
Other Method	38.9	12.0	17.3	39.0	67.0	0.5	-0.3
Current Ratio							
Retail Method	2.1	0.8	0.7	1.9	4.2	0.9	0.4
Other Method	2.5	1.1	1.0	2.3	5.6	0.8	-0.1
Quick Ratio							
Retail Method	0.8	0.6	0.1	0.6	2.7	0.9	0.2
Other Method	1.1	0.7	0.1	0.9	3.8	1.0	1.0
Cash Conversion Cycle							
Retail Method	53.3	27.6	0.0	54.1	118.3	0.1	-0.2
Other Method	80.9	106.0	-43.2	53.2	508.9	2.8	8.0
Inventory Turns							
Retail Method	4.8	2.6	2.4	3.8	12.8	2.0	3.2
Other Method	4.6	2.5	0.7	4.2	11.5	0.7	0.2
Stock Return vs. Market							
Retail Method	8.8	91.5	-86.0	2.0	833.7	6.5	54.8
Other Method	7.6	47.2	-88.2	0.1	209.9	1.5	3.4
Market Capitalization							
Retail Method	22.7	53.7	0.0	2.3	332.8	3.5	13.2
Other Method	41.7	124.9	0.1	3.8	845.5	4.7	24.3

Table 3: Analysis of Variance

Effect	F-stat	Sig.
Predictor Variables		
Gross Margin	21.00	.000
Current Ratio	11.56	.001
Quick Ratio	14.51	.000
Cash Conversion Cycle	7.99	.005
Inventory Turns	.33	.567
Stock Return vs. Market	.02	.888
Control Variables		
Market Capitalization	2.50	.115
Occupancy	1.60	.207
Warehouse Distribution	9.37	.002
In/Out Freight	19.85	.000

Table 4: Classification Matrix

Predicted	Other Method	Retail Method	Percentage Correct
Other Method	82	23	78.1
Retail Method	23	92	80.0
Overall Percentage			79.1

Table 5: Variables in the Equation

Effect	B	S.E.	Z-ratio	Significance
Intercept	-6.126	3,074.696	-0.002	.998
Predictor Variables				
Gross Margin	-0.221	0.048	-4.590	.000
Current Ratio	0.054	0.422	0.129	.898
Quick Ratio	-0.130	0.535	-0.244	.807
Cash Conversion Cycle	-0.034	0.016	-2.164	.030
Inventory Turns	0.195	0.227	0.860	.390
Stock Return vs. Market	-0.005	0.005	-0.998	.318
Control Variables				
Market Capitalization	-0.093	0.043	-2.149	.032
Occupancy	-48.093	1,474.077	-0.033	.974
Warehouse/Distribution	46.765	1,474.076	0.032	.975
In/Out Freight	16.223	3,074.695	0.005	.996