

THE PRICE OF PERCEPTION: MENTAL ACCOUNTING AND MARKET-LEVEL IMPACTS IN RETAIL

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ABSTRACT

Purpose – This paper examines the effects of mental accounting bias on decision-making within supply chains, focusing on suppliers, retailers, and end consumers. It investigates how mental accounting influences ordering behavior, pricing decisions, and interactions among supply chain participants, and explores the resulting market-level implications.

Body of knowledge – A narrative literature review was conducted to synthesize prior research on mental accounting in supply chain contexts. The analysis classified the evidence into three categories: reference point effects, risk aversion effects, and payment scheme effects. The reviewed studies indicate that mental accounting can lead retailers and consumers to deviate from optimal decision-making, particularly in online purchasing environments, inventory ordering, contract selection, and pricing behavior. The findings also highlight how behavioral biases propagate through supply chain relationships, creating ripple effects that influence overall supply chain performance.

Implications – The findings suggest that mental accounting may contribute to suboptimal inventory decisions, altered pricing strategies, and reduced profitability across supply chain actors. Retailers may order quantities that differ from optimal levels due to reference-dependent judgments and risk considerations, while payment schemes and digital purchasing channels may encourage increased spending and ordering behavior. These behavioral distortions can affect supply chain coordination and potentially influence market prices and aggregate supply.

Originality/Value – This study integrates evidence from behavioral economics and supply chain management to provide a structured classification of mental accounting effects within supply chains. By conceptualizing these effects as cognitive disruptions and examining their interconnected impacts on suppliers, retailers, and consumers, the paper offers a broader perspective on how behavioral biases influence supply chain outcomes and market dynamics.

Keywords: Mental accounting, Reference point, Risk aversion, Supply chain

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INTRODUCTION

Economics assumes that people make logical decisions and behave rationally. However, psychological science does not always support this assumption. Depending on various behavioral factors, individuals may exhibit both rational and irrational behavior. The rationality emphasized in psychology is procedural, whereas the rationality assumed in economics is substantive (Simon, 1986). According to traditional economic theory, individuals make decisions based on the alternatives they believe will generate the most favorable outcomes given their preferences and circumstances. In *The Principles of Economics*, Marshall (1890) argued that consumers perceive a purchase as worthwhile when the satisfaction derived from it is at least equal to its cost. Similarly, firms are generally assumed to seek profit maximization. Friedman (1970) argued that the primary responsibility of businesses is to maximize profits while operating within legal and

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ethical boundaries. In supply chain settings, decision-makers are therefore expected to make choices that support this objective. However, the relationships among suppliers, retailers, and consumers have become increasingly complex and interdependent. Moreover, technological developments have expanded the range of available options, making decision-making more challenging and increasing the likelihood that behavioral factors may influence choices.

One of the many biases that individuals exhibit when choosing a course of action is mental accounting bias, which refers to the set of cognitive processes that people and households use to organize, evaluate, and monitor financial activities (Thaler, 1999). The financial benefit that consumers and businesses expect to gain from selecting one option over several alternatives is often the primary driver behind seemingly irrational decisions (Qiao et al., 2022). Aside from the well-known disruptions that numerous studies have demonstrated, the biases that supply chain participants occasionally commit could be considered anomalies. So, this paper referred to these cases of irrational behaviors as “cognitive disruptions”. One irrational decision can have adverse effects on other actors in the chain, leading to a total loss.

This paper, therefore, aims to analyze how concepts associated with mental accounting affect the decisions made by the key actors in the supply chain, which include suppliers, manufacturers, retailers, and end consumers, and discover the types of cognitive disruptions that the members face. Moreover, it will explain how one actor's decision in an irrational way can affect other actors in this chain. This study will discuss the most important theories in this aspect as well. Narrative literature review research will be made depending on the previous studies and experiments and descriptive analysis will be conducted. The behavioral theories and concepts associated with mental accounting will be discussed in the upcoming section (Section 2). The subsequent section (Section 3) will elucidate the concepts of the supply chain, along with theories and models related to inventory. Moving on to (Section 4), the discussion and analysis will revolve around the findings of the literature review concerning cognitive disruptions in the supply chain. Finally, the final section (Section 5) will conclude the paper, offering a comprehensive summary and recommendations.

MENTAL ACCOUNTING BIAS

In 1985, Richard Thaler developed the mental accounting model as a novel theory of consumer behavior, integrating cognitive psychology and microeconomics to better understand purchase decisions. The model introduces the concept of transaction utility and incorporates the value function from prospect theory, originally proposed by Kahneman and Tversky (1979), to explain how individuals mentally code gains and losses. By incorporating the household budgeting process, Thaler's model provides a thorough understanding of consumer decision-making. To clarify, Thaler mentioned four instances where the economic theories are broken because of mental accounting : when money is allocated or labeled in a way that influences people's behavior, the fungibility principle is broken. Furthermore, accounts that symbolize mental classifications or resource distributions can demonstrate both temporal and topic specificity. People's financial decision-making can be influenced by their perceptions of self-control as well as outside variables like banking supervision. This can result in a departure from the fungibility principle. People also deviate from microeconomic norms when giving gifts, putting emotional value and thoughtfulness ahead of strict economic considerations (Thaler, 1985).

Prospect theory

According to Kahneman and Tversky (1979), prospect theory is an alternative approach to the utility model that considers risk when making decisions intended to maximize utility. It explains how people react or respond to uncertain events. So, the value function replaces the utility function and comes across several unique features, such as:

- Unlike conventional utility theory, where utility depends on final wealth or consumption levels, Prospect Theory assumes that value is derived from perceived gains and losses relative to a reference point.
- The loss function is steeper than the gain function, indicating that people are more sensitive to losses than to gains. For gains, it is concave, and for losses, it is convex.

- Decision weights tend to be lower than the associated probabilities, except when dealing with low probabilities. The tendency to give higher decision weights to low-probability events may be a factor in the appeal of both insurance and gambling

Their ideas align well with the endowment effect described by Thaler (1980), which shows that people typically demand more money to sell an item they own than they are willing to pay to buy the same item.

Moreover, Kahneman and Tversky (1979) provided further clarification to the theory by defining two categories of effects: The first is known as the certainty effect, which asserts that people tend to overestimate outcomes that are certain to occur as opposed to those that have a slim chance of happening. That is when faced with uncertainty, people start to avoid taking risks and instead choose small but guaranteed gains. The second is known as the isolation effect, which states that individuals pay attention to one feature and ignore all other features in the available options. Inconsistent preferences are the result when the same option is presented differently.

Kahneman and Tversky (1979) describe a two-step decision-making process: editing and evaluation. During the editing phase, people assess and simplify prospects by organizing and reformulating them. The edited prospects are then evaluated during the evaluation phase, and the one perceived to have the highest value is ultimately chosen.

- Coding: when making decisions, people often view the results concerning a reference point rather than as absolute gains or losses. This point of reference is frequently determined by the assets or circumstances of the individual.

- Combination: integrating the probabilities for the same outcome can sometimes simplify prospects.

- Segregation: people separate or distinguish the riskless component from the risky one when evaluating potential outcomes.

- Cancellation: people in this case disregarded the first step and assessed the prospects in light of the outcomes of the second stage. (Kahneman & Tversky, 1979).

SUPPLY CHAIN

In the early 1990s, large corporations began exploring ways to improve efficiency beyond their organizational boundaries due to increasing competition (Irfan et al., 2008). As a result, a complex network—referred to as the supply chain—was established among these businesses. According to the Supply Chain Council (SCC), the supply chain comprises the processes that coordinate and execute the procurement of resources, the transformation of those resources into marketable products, and the delivery and return of goods to fulfill customer orders. Consequently, Supply Chain Management (SCM) has emerged as a critical area of focus for businesses, particularly in optimizing inventory management.

Suppliers, manufacturers, retailers, and end consumers make up the majority of the supply chain. The expansion of trade, information, and technology are some of the factors that contribute to the size and complexity of this chain. In broad terms, this chain is susceptible to disruptions, which are considered supply chain risks. Regarding the subject at hand, Ke et al. (2023) synthesized the risks discussed in the studies by Kinra et al. (2020) and El Baz and Ruel (2021) into two categories: the operational risk which is the disturbance caused by the unpredictability of day-to-day activities, such as variations in demand, equipment breakdowns, supply disruptions, and product quality, and the disruption risk, that is caused by unforeseen occurrences that have a significant impact on the supply chain, such as natural disasters, wars, and policy changes. According to Commercial Risk Europe (2018) survey, more than half of the participating companies in this survey experienced a disruption in their supply chain within the last year. However, This chain's expansion gave rise to the expression "The ripple effect," which Kinra et al. (2020) defined as the way a disruption spreads throughout the supply chain and the ensuing effects. Still, the risk stems from the potential reactions and to what extent it will go are significant issues known as supply chain resilience which is defined by Falasca et al. (2008) as the capacity of a supply chain system to shorten the time it takes to return to normal performance, as well as the likelihood and impact of disruptions.

Supply chain models

Many economists have developed various theories and models to enhance supply chain performance. One of the most widely recognized is the Supply Chain Operations Reference (SCOR) model, introduced in 1996 by the Supply Chain Council, which provides a standardized framework for supply chain design and analysis. According to Irfan et al. (2008), there are four levels in SCOR: the main goals of level 1 are to define the model's overall scope and comprehend how the supply chain's setup affects the accomplishment of competing performance goals. At this stage, the five fundamental elements of the supply chain—the plan, source, make, deliver, and return—that the SCC outlined primarily came out. At level 2 of the SCOR model, there are about 30 basic process classifications, which act as the cornerstones or essential elements of a business's supply chain. Businesses can put together and organize these fundamental process categories in a way that best suits their unique goals, plans, and requirements. Level 3, then, entails defining key performance metrics, outlining information regarding inputs and outcomes, defining individual process components, and determining the most effective methods. By applying particular SCM techniques to boost competitiveness in their targeted markets, businesses utilize this information to optimize their operations strategy. Lastly, level 4 outlines strategies for gaining a competitive edge and adjusting to a changing business environment.

In addition to that, the “triple-A supply chain” is another model developed by Lee (2004). In his theory, Lee argues that three key characteristics give businesses like Wal-Mart, Dell, and Amazon a sustainable competitive advantage: agility, or the capacity to respond quickly to shifts in supply and demand; adaptability, which refers to their ability to adjust as market structures and strategies evolve; and alignment, which ensures that all businesses in the supply network have shared goals. When businesses are aligned and pursue common objectives, the supply chain performs at its best.

Inventory theory

Economists began to become interested in and knowledgeable about inventory management in the middle of the 20th century. The complexity and importance of inventory management increased with advancements in manufacturing techniques, globalization, and technology. Scarf (2002), for instance, has defined the inventory theory in its most basic form as a theory that tells us how much of a single nondurable item to purchase when demand is inconsistent. In addition, Arrow et al. (1951) described the optimal inventory policy in their study. The research entails switching from a straightforward model with known demand to more practical models that take demand uncertainty into account. After that, the best inventory policy is created by taking into account the probability of demand and adding elements like order costs and stock-out costs. The resultant policy attempts to balance keeping enough inventory on hand to satisfy demand with limiting related expenses.

As a result, numerous models have been created to accomplish the goal of inventory optimization which is known as the “newsvendor problem” or the “single period problem (SPP)”. This problem is a fundamental concept in inventory management and supply chain optimization. According to Khouja (1999), this model aims to determine the best quantity to purchase for a product in a given time frame while considering the product's unsure and probability-distributed demand. Considering the probability of the demand, the goal is to maximize the expected profit. D'Urso et al. (2017) has explained a dilemma that the newsvendor problem came from. Without precise knowledge of how many copies will be sold, the newsvendor must decide each morning how many pieces of a newspaper to purchase from his supplier to meet the daily demand. If actual demand is lower than expected, there will be extra stock and potential losses from unsold goods. But if demand is higher than expected, some sales might be missed due to insufficient inventory. However, this model was based on a single product, which is not realistic. Thus, the Multi-Product Newsvendor Problem (MPNP), originally developed by Hadley and Whitin (1963), addresses how decision-makers determine the order quantities of multiple products to maximize overall profit under specific demand distributions and product constraints (as cited in Qiao et al., 2022).

Types of contracts in the supply chain

One of the most effective ways to achieve the optimization goal is through supply chain contracts, which serve as instruments used by supply chain members to support decision-making and

enable channel coordination (Giannoccaro & Pontrandolfo, 2004). As a result, businesses should learn how to cooperate with others and make logical decisions when selecting a kind of contract. In light of Cachon (2003), optimal performance will be achieved when the firms work together through contracts that allow each firm's goal to become aligned with the supply chain's goal instead of by achieving personal goals.

Among many contracts, the following contracts were discussed extensively in studies:

- Wholesale price contract:

An agreement where businesses purchase goods at a specific price from suppliers and then resell them to customers at a different price. These contracts are used heavily in the traditional supply chain (Lu et al., 2019). However, the development in this chain led the members to evolve new types of these contracts. According to Cachon (2004), wholesale price contracts can be divided into:

Push contracts: contracts that require the retailer to reserve inventory in advance and limit the supplier's production to the retailer's reserved quantity at a set wholesale price. So, all the risks will be held by the retailer.

1. Pull contracts: in these contracts, the retailer takes the ordered quantity from the supplier directly at a given wholesale price. And here the supplier holds all the inventory risks.

2. Advanced purchase discount contracts: by offering two prices, this contract combines pull and push types. Push style pricing is less expensive than pull style pricing, allowing the retailer to place an advance order and assume all risk alone.

- Revenue share contracts:

Contracts known as revenue-sharing agreements (RSCs) outline how supply chain participants split profits and losses (Bart et al., 2021). In these contracts, for every item bought, a retailer gives a supplier the price at wholesale in addition to a portion of the sales the retailer makes (Cachon & Lariviere, 2005). Over the past twenty years, RSCs have grown in popularity. Notably, when working with developers to sell their apps on major distribution platforms like Google Play and the Apple App Store, uniform RSCs are used (Bart et al., 2021).

New concepts in the supply chain

As this chain grows with technological advances and globalization, new ideas and notions emerge, including:

- Supply chain management (SCM)

With the goals of generating value, establishing a competitive environment, utilizing global logistics, matching supply and demand, and tracking performance internationally, SCM involves the design, planning, execution, control, and supervision of supply chain activities (Supply Chain Manager – Careers | ASCM, *n.d.*).

- Supply chain outsourcing:

Outsourcing is when one company hires another to perform tasks that would otherwise be carried out by its employees. In contemporary supply chain systems, third-party providers are integral, delivering outsourced services that include back-office operations, debt collection, customer service, warehousing, and transportation (Millar, 2015).

- Supply chain offshoring

Transferring tasks and jobs from one nation to another is known as offshoring. This frequently entails the transfer of work from nations with high labor wages to nations with significantly lower labor costs. Offshoring is primarily done to benefit from cost savings related to lower wages in the country of destination (Population Reference Bureau, 2008).

- Supply chain visibility:

Businesses now take into account the awareness level of their customers, who know each step of the product creation process due to “supply chain visibility,” which is defined by Millar (2015) as knowing every stage of the supply chain ecosystem and having the capacity to react to potential scenarios using the knowledge they have from this visibility. Cooperation consequently became extremely important.

- Supply chain sustainability:

Functioning, controlling, and overseeing each function in a sustainable supply chain entails taking an ongoing approach to improvement to use energy more efficiently and minimize the business's negative ecological effects and carbon footprint (Millar, 2015). The supply chain contributes to the advancement of human rights, moral work standards, environmental preservation, and fights against corruption. The main obstacle to improving sustainability performance remains supply chain procedures. Considering the size and complexity of numerous supply chains, the challenge is apparent (Supply Chain Sustainability | UN Global Compact, n.d.).

COGNITIVE DISRUPTIONS IN THE SUPPLY CHAIN (DESCRIPTIVE ANALYSIS)

Each member of this network possesses the ability to make decisions that, occasionally, and as numerous studies have shown, are influenced by psychological segmentation and cognitive bias. The behaviors that supply chain participants engaged in will be compiled in this section and categorized into various mental accounting cases. Such cases will be referred to as “cognitive disruptions” in this paper.

Payment scheme disruption

In the context of the different payment methods that are in place today, numerous experiments and earlier research have shown that supply chain participants occasionally behave irrationally when making decisions based on prospect analysis and mental accounting, as in the following cases:

- When to pay

The timing of payments affects supply chain participants' decisions and encourages mental accounting. Customers who use prepaid plans sometimes experience better and less pain because they will have future consumption. However, if payment is made after consumption, the pleasure of consumption today will be diminished by the thought of payment in the future (Bi & Liu, 2014). So, some customers irrationally forget or disregard concerns about future consumption when they have to pay more over time. As a result, they abandon the deposit they paid in advance. This practice influences newsvendors' decisions as well because, despite the best supplier price, newsvendors place orders based on the customer's final payment (Nan et al., 2023). Furthermore, newsvendors display illogical behavior in the quantities they order. In an experimental study, Chen et al. (2013) showed that when required to pay upfront and before the realization of demand, some irrational newsvendors placed smaller orders. However, when they had other options, like waiting for the customers to pay and assessing their demand or getting the supplier's inventory before making a payment, they placed larger orders.

- Online services impact

Many people find that making payments online is simpler, which influences their purchasing decisions (Hou et al., 2021). Since making payments online facilitates cash flow and aids in purchase planning, consumers' use of digital payments attracts and encourages them to make more purchases, which facilitates intentional modifications to their mental accounts and increases impulsive spending. Depending on the 2017 China Household Finance Survey (CHFS) data, consumers of online payments spent 20.63% more than those using other channels. Furthermore, online channels are less restricted. According to Saltzman (2021), peer-to-peer digital payment systems like PayPal, Venmo, and Zelle reduce barriers to consumption, encourage more spending, and readily induce mental accounting biases. But occasionally, this depends on how aware customers are of online services. Customers respond positively to the online direct channels made by the suppliers when they are highly aware and this gives the suppliers the confidence to make these channels with customers (Song et al., 2018). Indeed, certain manufacturers have monopoly power over retailers due to their control of direct online channels and stronger engagement with customers (Yan et al., 2023). However, when consumers lack awareness of the direct selling channels offered by suppliers—where products are sold directly instead of through retailers—suppliers tend to stick with conventional channels. This is often to

avoid the retailer's unreasonable actions, especially when suppliers perceive unfairness. Such perceptions of injustice can reduce the combined profit of both the supplier and the retailer (Song et al., 2018). Moreover, since consumers categorize online luxury goods into premium mental accounts when they provide psychological comfort and fulfillment, the profit margin of the online retailer is more variable than that of the traditional retailer (Yan et al., 2023). The newsvendors are also impacted by the ease of online trade when they encounter issues like inventory shortages, as they can easily switch to a substitute product and their mental accounting drives up order quantities through e-commerce. As a result, the total order quantity will increase at a high cost, which will result in reduced profit (Qiao et al., 2022).

Reference point disruption

Sometimes experiences and knowledge can act as obstacles, causing people to make irrational decisions based on these points of reference. According to Kahneman and Tversky (1979), the reference point acts as a starting point for assessing gains and losses and is frequently associated with an individual's current asset or financial status. However, this benchmark is flexible and subject to the decision maker's expectations as well as the way options are presented. Plenty of research in the supply chain field has noted this. According to Yun and Suk (2022), consumers generally prefer to pay a single, fixed fee or subscription rather than paying each time they use, even if it is more economical to do so. The comparison point (reference point) that consumers use to assess pay-per-use plans, however, changes when businesses redefine and modify the per-use payment scheme. This influences what consumers think are the advantages or drawbacks of the price plan and leads to an increased preference for the modified pay-per-use option. In addition, Baucells and Hwang (2017) noted that, in mental accounting, consumers utilize the prices they have saved for the products they purchase as reference points. They compare the current price to the reference price they have saved. Becker-Peth and Thonemann (2016) noticed this bias in the behavior of the newsvendors as well. In the case of the "revenue-sharing contracts (RSC)", the authors of these contracts exhibit bias in that they rely on a point of reference during the creation process. Their inventory decisions therefore differ from traditional standard predictions. Furthermore, according to Han et al. (2020), people's experiences can serve as a reference point; individuals with less experience tend to order the best because they don't have a benchmark to use when making decisions. Additionally, they discovered that overconfidence and mental accounting can occasionally be combined to produce an ordered inventory quantity that is not optimal. In the context of contracts, Davis (2015) found that the retailer performed better in decisions made once the reference points were under control. When compared to wholesale prices, the coordinating contracts show less systematic bias.

Risk aversion disruption

Individuals can broadly be categorized as either risk-takers or risk-averse. Similarly, in the business context, the degree and nature of risk that companies are willing to accept is referred to as risk appetite, as outlined in Standard Deviations: A Risk Practitioner's Guide to ISO 31000 (Institute of Risk Management, n.d.), which summarizes ISO 31000's definition of risk criteria. Multiple investigations have demonstrated the relationship between the supply chain's level of risk aversion and the ideal order quantity. According to Song et al. (2020), the ideal order quantity falls as supply chain risk aversion rises. Gu and Zhang (2020) described this relationship's direction in terms of a phenomenon that newsvendors frequently engage in called the pull-to-center effect. This phenomenon states that when newsvendors avoid the risk of placing an order before the realization of demand, they place larger orders to prevent the anticipated shortage, regardless of the order's cost. Thus, they make less profitable orders. Similar findings were reached in a study by Yueli et al. (2022), which showed that a rise in risk aversion correlates with an increase in order quantity and influences revenue sharing contracts' ratio. Moreover, Xu et al. (2017) demonstrated how businesses act irrationally when it comes to customers' risk aversion. The dual scheme allows customers to pay after receiving the item as they choose, so the online seller should charge more. However, in reality, they lower prices because customers who choose pay-on-delivery in the dual scheme behave in a loss-averse manner. Moreover, companies behave

irrationally in terms of inventory allocation as well. According to Hofstra and Spiliotopoulou (2022) when faced with large profit differences between channels, most people tend to be cautious and allocate less inventory to the riskier, more profitable channel. However, those with a stronger risk appetite go against this trend, being more willing to take on the associated risks and allocating larger quantities to the channel with higher potential profits. This suggests that individual risk preferences play a significant role in inventory allocation decisions, influencing the balance between risk and reward. Overall, a Nash equilibrium, according to Biswas et al. (2020), is achieved in the entire supply chain when all retailers, regardless of their risk mindsets, abstain from taking on risk.

Other types of cognitive disruptions in the supply chain

In addition to the previous evidence, few studies showed mental accounting in their behaviors. For example, competition may lead to biased decisions. Individuals with lower profits seem to respond to their competitors' actions more quickly based on their mental accounting (Zhao & Zhao, 2016). Besides this, mental accounting sometimes leads people to justify illegal behaviors such as fraud. According to Garnefeld et al. (2019), based on mental accounting theory, customers may be motivated to settle perceived financial imbalances overtime after a payment, and some people may turn to fraudulent activity when their legal options are limited. Another observation was noticed by Zhang, et al. (2019), the retailer's decision is mentally influenced by the type of customer. The retailer becomes more irrational in their ordering when the percentage of strategic customers grows, especially when costs are high they order more than when costs are low.

CONCLUSIONS

This study looked at how mental accounting bias affects the decisions made by suppliers, retailers, and end users in the supply chain. It was based on several previous related studies. This was accomplished by classifying the mental accounting case analysis into three categories: impacts of payment plans, risk aversion, and reference points. According to the studies, first, newsvendors order higher quantities at higher prices rather than the ideal quantities at the best price when they are fearful of a shortage because they act irrationally and exhibit risk aversion (Qiao et al., 2022; Becker-Peth & Thonemann, 2016; Gu & Zhang, 2020). Nevertheless, additional research revealed that newsvendors order less than normal and less than the ideal quantity when risk aversion is associated with unknown demand and paying in advance (Song et al., 2020); (Hofstra & Spiliotopoulou, 2022). And this can explain the certainty effect (Kahneman & Tversky, 1979). Newsvendors make less profit overall than is ideal because of the mental accounting they have, and irrationality exists among other supply chain actors. Second, retailers and final consumers also responded sensitively to the payment schemes, placing more orders than the optimal quantity with online channels because they perceived them as less restrictive and easier to use (Hou et al., 2021; Saltzman, 2021). Also, this was greatly dependent upon the degree of consumer awareness of the online schemes (Song et al., 2018; Yan et al., 2023). Third, based on a mental reference point they preserve, both consumers and retaliators act unreasonably. Experience can occasionally serve as a point of reference that causes overconfidence when making decisions (Han et al., 2020). Companies placed orders for less than the optimal quantities as a result of reference points and selected the expensive wholesale price as their benchmark, which is well-known to them (Davis, 2015).

Finally, how do each member's actions impact other members (the ripple effect)? Retailers order at higher prices and sometimes postpone ordering until demand is met when customers or final consumers' mental accounting causes them to act irrationally, such as abandoning deposits they pay in advance, being risk averse, and preferring to pay on delivery. This, in my opinion, has a significant effect on the final prices of the products that are determined by mental accounting as opposed to logic. Retailers will raise the final price to boost their profits when they order in smaller quantities or at higher costs. Thus, it is possible that mental accounting contributes to market price increase. Furthermore, suppliers neglect to create direct channels that could boost their earnings because retaliators' sense of unfairness can reduce both parties' total revenue. Some retailers and suppliers chose the revenue sharing ratio in contracts according to reference

prices affecting both sides' revenues. Here, it has been observed how the irrational reactions by retailers affect suppliers' decisions, which impact the chain's overall profit. Moreover, retailers in this chain may also be rivals and observe one another. Thus, occasionally, they all exhibit risk aversion and create a market equilibrium known as the Nash equilibrium (Biswas et al., 2020). I think this can determine the total quantity of supply in the market (the equilibrium point).

Recommendations for Future Research

Further research can be conducted in the following areas:

1. Investigating how competition influences the use of mental accounting and the potential harm this may cause to supply chain efficiency and decision-making.
2. Examining the role of online payment systems in facilitating fraudulent and illicit customer behavior, and how such behaviors may compromise the optimization goals of other supply chain actors.
3. Exploring the psychological effects of client type or status on suppliers and dealers, even when ideal behavior is expected. This also includes studying business and consumer behavior across a broader range of contexts to enable comparative analysis between industries at both local and global levels.

CONFLICTS OF INTEREST

The author declares that no conflicts of interest are found in this research.

REFERENCES

- Arrow, K. J., Harris, T., & Marschak, J. (1951). *Optimal Inventory Policy*. *Econometrica*, 19(3), 250-272. <https://doi.org/10.2307/1906813>
- ASCM. (n.d.). *Supply Chain Manager*. <https://www.ascm.org/membership-community/career-resources/supply-chain-manager/>
- Bart, N., Chernonog, T., & Avinadav, T. (2021). Revenue-sharing contracts in supply chains: a comprehensive literature review. *International Journal of Production Research*, 59(21), 6633-6658. <https://doi.org/10.1080/00207543.2020.1821929>
- Baucells, M., & Hwang, W. (2017). A model of mental accounting and reference price adaptation. *Management Science*, 63(12), 4201-4218. <https://doi.org/10.1287/mnsc.2016.2569>
- Becker-Peth, M., & Thonemann, U. W. (2016). Reference points in revenue sharing contracts—How to design optimal supply chain contracts. *European Journal of Operational Research*, 249(3), 1033-1049. <https://doi.org/10.1016/j.ejor.2015.06.007>
- Bi, W., & Liu, M. (2014). Product demand forecasting and dynamic pricing considering consumers' mental accounting and peak-end reference effects. *Journal of Applied Mathematics*, 1-10. <https://doi.org/10.1155/2014/139030>
- Biswas, I., Adhikari, A., & Biswas, B. (2020). Channel coordination of a risk-averse supply chain: a mean-variance approach. *Decision (0304-0941)*, 47(4), 415-429. <https://doi.org/10.1007/s40622-020-00267-1>
- Cachon, G. P. (2003). Supply Chain Coordination with Contracts. *Handbooks in Operations Research and Management Science*, 11, 227-339. [https://doi.org/10.1016/S0927-0507\(03\)11006-7](https://doi.org/10.1016/S0927-0507(03)11006-7)
- Cachon, G. P. (2004). The Allocation of Inventory Risk in a Supply Chain: Push, Pull, and Advance-Purchase Discount Contracts. *Management Science*, 50(2), 222-238. <https://doi.org/10.1287/mnsc.1030.0190>
- Cachon, G. P., & Lariviere, M. A. (2005). Supply Chain Coordination with Revenue-Sharing Contracts: Strengths and Limitations. *Management Science*, 51(1), 30-44. <https://doi.org/10.1287/mnsc.1040.0215>
- Chen, L., Kök, A. G., & Tong, J. D. (2013). The effect of payment schemes on inventory decisions: The role of mental accounting. *Management Science*, 59(2), 436-451. <https://doi.org/10.1287/mnsc.1120.1638>
- Commercial Risk Europe. (2018). *Commercial Risk Europe's Captive Survey 2018: Growing Role for Captives*. *Commercial Risk Europe*. <https://www.commercialriskonline.com/wp-content/uploads/2018/11/Captives-Survey-2018.pdf>

- D'Urso, D., Mauro, C. D., Chiacchio, F., & Compagno, L. (2017). A behavioural analysis of the newsvendor game: Anchoring and adjustment with and without demand information. *Computers & Industrial Engineering*, 111, 552-562. <https://doi.org/10.1016/j.cie.2017.03.009>
- Davis, A. M. (2015). An experimental investigation of pull contracts in supply chains. *Production & Operations Management*, 24(2), 325-340. <https://doi.org/10.1111/poms.12224>
- El Baz, J., & Ruel, S. (2021). Can supply chain risk management practices mitigate the disruption impacts on supply chains' resilience and robustness? Evidence from an empirical survey in a COVID-19 outbreak era. *International Journal of Production Economics*, 233, 107972. <https://doi.org/10.1016/j.ijpe.2020.107972>
- Falasca, M., Zobel, C. W., & Cook, D. (2008). A Decision Support Framework to Assess Supply Chain Resilience. In *Proceedings of the 5th International ISCRAM Conference* (pp. 596-605). Washington, DC, USA.
- Friedman, M. (1970, September 13). *A Friedman doctrine- The Social Responsibility of Business Is to Increase Its Profits*. The New York Times. [https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html%20\(Accessed:%204%20January%202024\)](https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html%20(Accessed:%204%20January%202024))
- Garnefeld, I., Eggert, A., Husemann-Kopetzky, M., & Böhm, E. (2019). Exploring the link between payment schemes and customer fraud: a mental accounting perspective. *Journal of the Academy of Marketing Science*, 47(4), 595-616. <https://doi.org/10.1007/s11747-019-00653-x>
- Giannoccaro, I., & Pontrandolfo, P. (2004). Supply chain coordination by revenue sharing contracts. *International Journal of Production Economics*, 89(2), 131-139. [https://doi.org/10.1016/S0925-5273\(03\)00047-1](https://doi.org/10.1016/S0925-5273(03)00047-1)
- Gu, B., & Zhang, X. (2020). Prospect theory and the newsvendor problem with mental accounting. *Journal of Systems Science and Systems Engineering*, 29(5), 525-536. <https://doi.org/10.1007/s11518-019-5445-5>
- Hadley, G., & Whitin, T. M. (1963). *Analysis of Inventory Systems*. Prentice-Hall.
- Han, X., Bian, Y., & Shang, J. (2020). Impact of decision style on newsvendor ordering behaviors: mean anchoring, demand chasing and overconfidence. *Soft Computing*, 24(9), 6197-6212. <https://doi.org/10.1007/s00500-018-03676-8>
- Hofstra, N., & Spiliotopoulou, E. (2022). Behavior in rationing inventory across retail channels. *European Journal of Operational Research*, 299(1), 208-222. <https://doi.org/10.1016/j.ejor.2021.08.020>
- Hou, L., Hsueh, S. C., & Zhang, S. (2021). Digital payments and households' consumption: A mental accounting interpretation. *Emerging Markets Finance and Trade*, 57(7), 2079-2093. <https://doi.org/10.1080/1540496X.2021.1887727>
- Institute of Risk Management. (n.d.). *Standard Deviations: A Risk Practitioner Guide to ISO 31000*. <https://www.theirm.org/news/standard-deviations-a-risk-practitioner-guide-to-iso-31000/>
- Irfan, D., Xu, X., Deng, S., & He, Z. (2008). A SCOR reference model of the supply chain management system in an enterprise. *The International Arab Journal of Information Technology*, 5(3), 288-295.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-292. <https://doi.org/10.2307/1914185>
- Ke, Y., Lu, L., & Luo, X. (2023). Identification and formation mechanism of key elements of supply chain resilience: Exploration based on grounded theory and verification of SEM. *PLoS ONE*, 18(11), 1-30. <https://doi.org/10.1371/journal.pone.0293741>
- Khouja, M. (1999). The single-period (news-vendor) problem: literature review and suggestions for future research. *Omega*, 27(5), 537-553. [https://doi.org/10.1016/S0305-0483\(99\)00017-1](https://doi.org/10.1016/S0305-0483(99)00017-1)
- Kinra, A., Ivanov, D., Das, A., & Dolgui, A. (2020). Ripple effect quantification by supplier risk exposure assessment. *International Journal of Production Research*, 58(18), 5559-5578. <https://doi.org/10.1080/00207543.2019.1675919>
- Lee, H. L. (2004). *The Triple-A Supply Chain*. Harvard Business Review [Preprint].

- Lu, F., Zhang, J., & Tang, W. (2019). Wholesale price contract versus consignment contract in a supply chain considering dynamic advertising. *International Transactions in Operational Research*, 26(5), 1977-2003. <https://doi.org/10.1111/itor.12388>
- Marshall, A. (1890). *Principles of Economics*. Macmillan
- Millar, M. (2015). *Global Supply Chain Ecosystems: Strategies for Competitive Advantage in a Complex, Connected World*. Kogan Page Publishers.
- Nan, Y., Chen, Y., & Nie, T. (2023). Supply chain optimization considering consumers' mental accounting by time dimension in advance selling. *JUSTC*, 53(8), 0801. <https://doi.org/10.52396/JUSTC-2023-0007>
- Nash, J. (1951). Non-Cooperative Games. *Annals of Mathematics*, 54(2), 286-295. <https://doi.org/10.2307/1969529>
- Population Reference Bureau. (2008). *Offshoring U.S. Labor Increasing*. <https://www.prb.org/resources/offshoring-u-s-labor-increasing/>
- Qiao, Y., Yang, W., & Sun, Z. (2022). A Multi-product Newsvendor Problem Model Based on Demand Transfer and Mental Accounting in the Context of E-Commerce. In *Proceedings of the 2022 3rd International Conference on E-commerce and Internet Technology* (pp. 97-108). Zhangjiajie, China. https://doi.org/10.2991/978-94-6463-005-3_11
- Saltzman, J. (2021). *Not From My Wallet: Mental Accounting For Peer-To-Peer Digital-Payments* [Senior Thesis]. Scholarship@claremont. https://scholarship.claremont.edu/cmc_theses/2668
- Scarf, H. E. (2002). Inventory Theory. *Operations Research*, 50(1), 186-191. <https://doi.org/10.1287/opre.50.1.186.17773>
- Simon, H. A. (1986). Rationality in Psychology and Economics. *The Journal of Business*, 59(4), S209-S224.
- Song, S., Zhang, M., & Hu, S. (2020). Coordination of time-varying price supply chain with risk-averse members under random order response time. *Mathematical Problems in Engineering*, 1, 1-9. <https://doi.org/10.1155/2020/4013215>
- Song, Y., Chen, J., Yang, Y., Jia, C., & Su, J. (2018). A dual-channel supply chain model considering supplier's mental accounting and retailer's fairness concerns. *Procedia Computer Science*, 139, 347-355. <https://doi.org/10.1016/j.procs.2018.10.280>
- Thaler, R. (1980). Toward a positive theory of consumer choice. *Journal of Economic Behavior & Organization*, 1(1), 39-60. [https://doi.org/10.1016/0167-2681\(80\)90051-7](https://doi.org/10.1016/0167-2681(80)90051-7)
- Thaler, R. (1985). Mental Accounting and Consumer Choice. *Marketing Science*, 4(3), 199-214.
- Thaler, R. H. (1999). Mental accounting matters. *Journal of Behavioral Decision Making*, 12(3), 183-206. [https://doi.org/10.1002/\(SICI\)1099-0771\(199909\)12:3<183::AID-BDM318>3.0.CO;2-F](https://doi.org/10.1002/(SICI)1099-0771(199909)12:3<183::AID-BDM318>3.0.CO;2-F)
- United Nations Global Compact. (n.d.). *Supply Chain Sustainability*. <https://unglobalcompact.org/engage-locally/manage/engagement/supply-chain-sustainability>
- Xu, N., Bai, S., & Wan, X. (2017). Adding pay-on-delivery to pay-to-order: The value of two payment schemes to online sellers. *Electronic Commerce Research and Applications*, 21, 27-37. <https://doi.org/10.1016/j.eierap.2016.12.001>
- Yan, L., Gao, J., Wang, S., Mou, S., Xu, G., & Wang, H. (2023). Product quality matching strategy in a dual-channel supply chain: A perspective from mental accounting theory in behavioral finance. *Sage Open*, 13(2). <https://doi.org/10.1177/21582440231174853>
- Yueli, L., Lu, S., & Xueyun, Z. (2022). Supply chain coordination with capital-constrained and loss aversion retailer under stochastic demand and supply. *Mathematical Problems in Engineering*, 1, 1-12. <https://doi.org/10.1155/2022/8926199>
- Yun, S., & Suk, K. (2022). Consumer preference for pay-per-use service tariffs: the roles of mental accounting. *Journal of the Academy of Marketing Science*, 50(5), 1111-1124. <https://doi.org/10.1007/s11747-022-00853-y>
- Zhang, Y., Mantin, B., & Wu, Y. (2019). Inventory Decisions in the Presence of Strategic Customers: Theory and Behavioral Evidence. *Production and Operations Management*, 28(2), 374-392. <https://doi.org/10.1111/poms.12926>
- Zhao, Y., & Zhao, X. (2016). How a competing environment influences newsvendor ordering decisions. *International Journal of Production Research*, 54(1), 204-214. <https://doi.org/10.1080/00207543.2015.1034330>