Raw Materials Inventories with Cost Economics Theory

RenuBala
Chartered Accountant, Faridabad, Haryana.

ABSTRACT
This paper proposes raw materials inventories based on cost economics theory. Raw materials inventories affect the company's transaction costs and the lower its storage related production and management costs. Historical cost does not generally reflect current market valuation. Alternative measurement bases to the historical cost measurement basis, which may be applied for some types of assets for which market values are readily available, require that the carrying value of an asset (or liability) be updated to the market price or some other estimate of value that better approximates the real value. Factors that affect these costs are the company's vulnerability to opportunism, whether the input becomes more or less costly to store and manage as it moves through the supply chain, payment terms and the company's power in relation to its supplier.

Keywords— Inventories, Transaction, Costs, Management

I.  INTRODUCTION

Raw material inventory is a major determinant of net income for trading & manufacturing companies. Inventory constitutes a significant asset on the balance sheet of these companies. Raw materials inventories are larger the higher a company’s transaction costs and the lower its storage related production and management costs. Factors that affect these costs are the company’s vulnerability to opportunism, whether the input becomes more or less costly to store and manage as it moves through the supply chain, payment terms and the company’s power in relation to its supplier. Transaction cost economies theory recognizes that companies incur production and governance costs whether they make or buy the parts and services they need. Production costs are the costs of the inputs themselves while governance costs are the costs of negotiating, implementing and revising the contracts under which the company obtains its inputs.

Transaction cost economics theory maintains that companies acquire the ownership rights to factors of production to reduce the cost of transacting in the marketplace there are three reasons storing raw materials is a common and effective way to manage the costs of external supply. First, the parts in storage can used without delay and without any compromise in form or function regardless of how specialized they are or how specialized the customer and the supplier are to each other. Second, a raw materials inventory is a low cost form of self-insurance against supply risk because the customer can store the part in the same form and, except for economies of scale, at the same cost as its supplier or place the part in production to store it at a lower cost. Third, possessing a raw materials inventory is a deterrent to opportunism. It is important for supply chain partners to share information to ensure tasks are performed by the partner with the lower cost. This is apparent from the fact it is the difference between their respective storage-related production costs, storage-related management costs, financial opportunity costs and power that affect the location of inventory.

In this paper, Section A describes the related work and section B describes the storage related production and management costs, transaction costs and storage, payment terms and storage costs, power and storage costs and concludes paper.

II. SECTION-A

Related Work
Fisher et al. have suggested that different types of products require different types of supply chains. He claimed that functional goods require physically efficient processes that minimize the cost of supplying predictable demand by limiting internal production capacity and inventories while innovative goods require market-responsive processes that permit effective reactions to unpredictable demand via buffer production capacity and stocks of parts or finished goods [1]. Dyer and Singh et al. described how cooperation can overcome the potential problems of external supply and create and sustain relational rents that accrue to the parties to the transaction [2]. Anderson and Schmittlein et al. tested the TCE explanation for vertical integration by examining companies’ decisions to forward integrate into distribution by using their own sales forces or trucking fleets [3]. Weber et al. examined decisions to backward integrate into supply [4]. Ellram et al. described the advantages and
disadvantages of industrial organization and supply chain management approaches to contracting between firms and discussed how TCE can serve as the basis for a theory of supply chain management [5]. Loader et al. suggested the use of TCE theory to examine inter-firm relationships and integration and illustrated the problems of measuring transaction costs in an agricultural marketing [6]. Adelman’s et al. uses inventory-to-sales ratio to measure vertical integration. A TCE explanation for backward vertical integration is developed by delineating an inventory’s affect on transaction costs and storage-related production and management costs [7]. Scherer and Ross that operational excellence in inventory performance is essential to appropriate financial benefits from implementing structural decisions such as IT investments [8]. Kohli and Devaraj concluded that the impact of IT investment is most likely to be detected in manufacturing industries [9]. Mukhopadhyay et al. find that an increase in IT investment results in higher inventory turns and lower inventory holding costs [10].

III. SECTION-B

Storage Related Production and Management Costs

A company can obtain the inputs it needs for production directly from its supplier by deferring delivery until production begins or from its own inventory by requiring delivery in advance of production. The inputs come from the supplier’s finished goods inventory in the first case and from the customer’s raw materials inventory in the second case. Within a context of increasing competitive pressure, high-demanding customer requirements and encouraging challenges arising from globalization, it is imperative to prevent loss, to reduce costs and unproductive waiting times, and to increase service levels. Early detection of competitive advantages in all links of supply chain implies to efficiently manage inventory and Warehouses, to optimize logistic processes and routes and to reduce time to customers. Anticipate future customers demand and adjust production volume, in order to deplete fixed assets and get rid of expired and outdated products. Optimize resources, minimize transportation costs and cut inventory levels. The Challenge in flow production-storage-consumption are given below-

- Reduction of time to customers.
- Loss prevention and costs and waiting times cut.
- Increase of quality and customer service.
- Optimization of logistic processes and routes.

The proposed solutions are given below:

- Put predictive techniques into practice to anticipate customers demand and adjust production volume
- Obtain immediate business insights into all links of supply chain: customer satisfaction, inventory levels, warehouse management, resources vs real needs, expired and obsolete products, sales results, etc.

Integrating storage to reduce transaction costs also comes at the expense of storage-related management costs which include losses due to theft and the costs of management coordination and shirking and shirking deserve elaboration. A company that maintains a raw materials inventory must coordinate two channels of communication rather than one: supplier-to-materials management and materials management to-production instead of supplier-to-production. The extra communication channel is costly and risks the loss of important information about product design, product quality and production scheduling that is valuable to the customer and its supplier. Managers are inclined to neglect their duties when their effort is not observable Integrating storage increases the likelihood of shirking because inventory masks managers’ effort by permitting production to continue even when the managers are inactive. A customer that partially integrates into its supplier’s business by acquiring the supplier’s finished goods inventory substitutes its own storage-related management costs for the supplier’s. Acquiring the supplier’s inventory shifts but may not change the amounts of coordination and shirking costs because the same managerial tasks are performed whether the supplier or its customer holds the inventory. Integrating storage may affect the cost of theft, however, because an input’s vulnerability to theft changes as it moves through the production process.

Modern day inventory is managed by sophisticated system applications that are designed to manage complex inventory plans and to a large extent contain processes that initiate and streamline the operations and inventory management. In the wake of improvements in the communication technology, companies are deploying one single ERP system across all factories, offices, departments and locations, thereby ensuring seamless transactions, visibility and controls. Inventory in the earlier days used to be managed by a system known as cardex system. Bin cards were printed and kept in every bin location. Whenever inventory was put into the bin or removed, the card had to be updated. Apart from the bin cards, books or registers were maintained to note down the transactions and reports were prepared manually. The system was basic and did not provide flexibility to manage warehouse locations as dynamic locations. The operations being manual were time consuming.

Transaction Costs and Storage

The primary benefit of vertical integration is the reduction of transaction costs according to TCE theory. Unacceptable variations in quality and interruptions in the supply of a key part produce what are arguably the most important of these costs. When these disruptions occur, the customer must replace the defective, damaged or missing parts on short notice under unfavorable conditions or delay the production and sale of its own product. These effects are magnified if the supplier opportunistically uses or creates a disruption in supply to obtain the quasi-rents, customers incur other transaction costs to negotiate,
implement and revise their contracts to reduce the incidence and severity of these disruptions. All transaction costs attributable to a disruption in supply are higher the more difficult it is to find replacement parts. The disturbance to operations is more severe, the quasi-rents at stake are larger and the customer is justified spending more to negotiate and revise its sales contract to limit these costs. Companies vertically integrate to reduce these transaction costs. However, it may not be economical for a customer to acquire all its supplier’s capabilities because companies cannot be easily and quickly limited, when information is costly Acquiring a supplier’s finished goods inventory and holding it as raw materials reduces transaction costs by providing the customer an alternative “supplier” it can turn to when its actual supplier disrupts or threatens to disrupt trade. Importantly, this alternative supplier is an immediate source of inputs that have exactly the characteristics the company requires no matter how specialized the inputs are. Integrating storage provides other transaction cost benefits in addition to creating an alternative supplier. First, holding a raw materials inventory reduces the supplier’s incentive to withhold parts to expropriate quasi-rents and the customer’s inclination to acquiesce. Second, the inventory improves the customer’s ability to monitor the supplier’s performance because it can inspect parts that are temporarily stored before being placed in production. Third, integrating storage improves the customer’s ability to enforce the contract because the customer can credibly threaten to terminate its relationship with the supplier when a dispute arises. Storage-related production costs

Payment Terms and Storage Costs
Most suppliers allow their credit-worthy customers to defer payment for their purchases. A 30-day payment period is common although different payment periods are used in different industries. Any payment period greater than zero provides both storage-related production cost and transaction costs savings to the customer. Deferred payment reduces storage-related production costs by shifting the financial opportunity cost of storage from the customer to the supplier. Deferred payment also reduces transaction costs by enabling the customer to verify that the parts conform to the terms of the contract before paying for them.

Power and Storage Costs
There is a popular belief that powerful customers, such as Walmart, dictate logistics policies to their suppliers that permit the customers to hold smaller inventories. There are two cases to consider when the practice is placed in this paper’s framework. First, the customer may use its power to deter supplier opportunism, which reduces its transaction costs and permits it to hold a smaller raw materials inventory without a corresponding increase in the supplier’s finished goods inventory. This reduces the supplier’s ability to seek quasi-rents and improves economic efficiency. Second, the customer may use its power to shift inventory to its supplier even though the channel’s storage related production and management costs are lower if the customer holds the inventory. This is detrimental to the supplier and reduces economic efficiency because the inventory is no longer held at the cost-minimizing location in the supply chain.

IV. CONCLUSION

Inventories are necessary factors of production and raw materials inventories in particular are factors that can be owned by the customer or its supplier. Furthermore, inventory policy makers should consider this fundamental determinant of an input’s specificity when assessing their company’s exposure to transaction costs. Customer industry’s power has a consistently significant negative effect on the level of raw materials inventories. Confirm a role for payment policy that reduces rather than increases the demand for raw materials inventory. It is well known that suppliers offer their customers delayed payment terms to reduce the financial opportunity cost of storage which increases the customers’ demand for inventory.

REFERENCES

3