IMPACT OF FLUCTUATIONS IN INVENTORY PRICES ON COST FLOW AND PRODUCT COSTING

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Abstract:

Efficient product costing is much emphasized in today's manufacturing environment because of their importance in management decisions. Product costs need to be as accurate as possible. If the costs are not accurate, pricing is not optimal. Product costing has direct and indirect effects on cash flows of companies. Volatile raw material prices bring challenges to reliability of product costing. The main contribution of this article is to investigate the effects of uncertain raw material prices in the context of product costing.

Keywords Inventory, Product, Costing, Weighted, Average, Market

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Introduction:

Product costing is an essential area in management accounting. Product costing is important in product pricing and profitability calculations. However, constantly changing and complex business environment brings a lot of challenges to product costing. In some industries the number of products can be hundreds, thousands, or even tens of thousands. These products may be situated at a number of warehouses. The products may also be manufactured from various raw materials. Thus it is impossible for a manager to evaluate even the operations of his own company without getting accurate information from products. Product costing has direct and indirect effects on cash flows of companies. The main direct effect is the effect on tax obligations. Product costing affect indirectly by distorting information and the distorted information makes difficult to make correct decisions. The focus of this article is to improve these direct and indirect effects. In this article section A contains Related Work, section B deals with cost flow and conclusion.

Section A

Related Work

Dominiak et al. have mentioned that product costing has major implications in running a business. Identifying cost drivers and developing activity-based costs is important for managerial purposes such as pricing and evaluating profitability of products and product lines [1].Ostwald et al. have argue that the most important objective of product costing is to determine appropriate sales prices. On the basis of product costs and sales price profit margin of product is calculated. Most profitable products are chosen, and thus product costing has major implications for product mix [2]. Johnson et al. have stated that the management accounting system often fails to provide accurate product cost information. Costs are usually distributed by simplistic and arbitrary measures that do not represent the use of company's resources. This failure to provide accurate costs for individual products may lead to misguided decisions about product pricing, product sourcing and product mix [3].Jianxin & Tseng have raised an important operational problem in product costing. These include lack of accountants' manufacturing excellence, dependence on detailed design description, lack of structured mapping between design and production and

contextual heterogeneity. These problems are especially relevant in design phase. In the design phase the product structure can be changed most easily, and thus it is very relevant that the product costing is evaluated starting from the design, or even before that [4]. Johnson et al. have mentioned that volatility of raw material prices is a challenge for management accounting. If raw material prices increase or decrease, reliability of management accounting is lowered. This makes it harder to take correct actions. Thus an efficient method of product costing needs to cope with fluctuating raw material prices [5]. Datar et al have said that the objective of product costing is to set costs as near as possible to real costs of products. Real costs itself is a theoretical concept. There are various errors associated with product costing. First, specification error arises when the method used to identify costs to products does not reflect demands placed on the resources by individual products. Aggregation errors occur when costs and units of a resource are aggregated over heterogeneous activities to derive a single cost allocation rate. Specification and aggregation errors increase demand for more refined costing systems. But there is a drawback in the modern accounting systems; the measurement costs are increased. So there is a tradeoff between exactness of product costing and costs of measurement [6]. Product costs can be divided into many dimensions. First of all, there are fixed and variable costs. Lukka et al have suggests that product costing should be based on variable costing, because it offers more usable and flexible information for decision-making than full costing [7].Miller et al. have said that full cost is the sum of allocated fixed costs and variable costs. Major weakness of the full costing is that full costs lead user department to evaluate the full cost and benefit rather than marginal cost and benefit. Variable costing has the desired property that operating departments are encouraged to expand their use until marginal cost exceeds marginal benefit [8]. Zimmerman et al have argues that variable costing may form delays and rationing costs on other users within the company. So, allocating also fixed costs according to actual usage may be desired since these allocated costs can serve as a useful estimation for opportunity costs, which are difficult to observe due to delay and rationing [9]. Bierman Jr. et al. have presents three methods to determine intra company transfer price, which can be considered as substitutes for product costing. The methods are based on marginal cost, market price and negotiated price [10]. The ways of calculating product cost structure include theory of constraints accounting and activity based costing (ABC). Kee et al have maintained that principle of TOC assumes that every organization has a constraint or bottleneck that restricts its performance. In TOC accounting

performance of the company is improved by efficiently organizing this bottleneck because TOC takes into account the use of constraints in forming product costs. Activity based costing system models causal relationship between products and resources used in their production. ABC identifies activities that compose overhead costs and charges each product for the quantity of each activity it consumed. The advantage of ABC is that it provides more accurate information of product costs for evaluating the profitability of the company's product lines and customer base. Traditional accounting system allocates overheads to product costs using volume-sensitive cost drivers, such as direct labor [11]. Fleischman et al. have said that traditional costing is seen to be inconsistent with today's manufacturing methods because traditional costing is not able to provide appropriate strategic signals for business enterprises and may encourage bulk purchasing which leads to high inventories [12]. Attiea marie et al. have discovered that standard costing is widely used by accounting & finance professional for valuation [13]. Kee et al have mentioned that there is no single method recommended to be used in all situations; on the contrary, the choice of method should depend on overall situation [11] Lea et al. have argue that TOC should be used for short-term planning and ABC for long-term planning [14].Campbell et al have recommended TOC for machine-intensive departments because costs of these departments are formed from creating and maintaining long-term capacity.In machine-intensive departments allocation of fixed costs to products is not appropriate because in managing constant resources time is a relevant measure, not money [15]. Kee et al have argue that relative performance of TOC and ABC accounting depend on the extent of management's control over labor and overhead. Traditional costing system can underestimate costs of low volume products that have many levels in bill-of-material and require many supporting activities. It can consequently allocate too large a percentage of overhead costs to a high volume product with a flat bill-of-material.

Section B

Cost Flow

The optimal product costing method depends basically on two variables: (1) how well information reflects company's performance, and (2) how accurate is product costing.

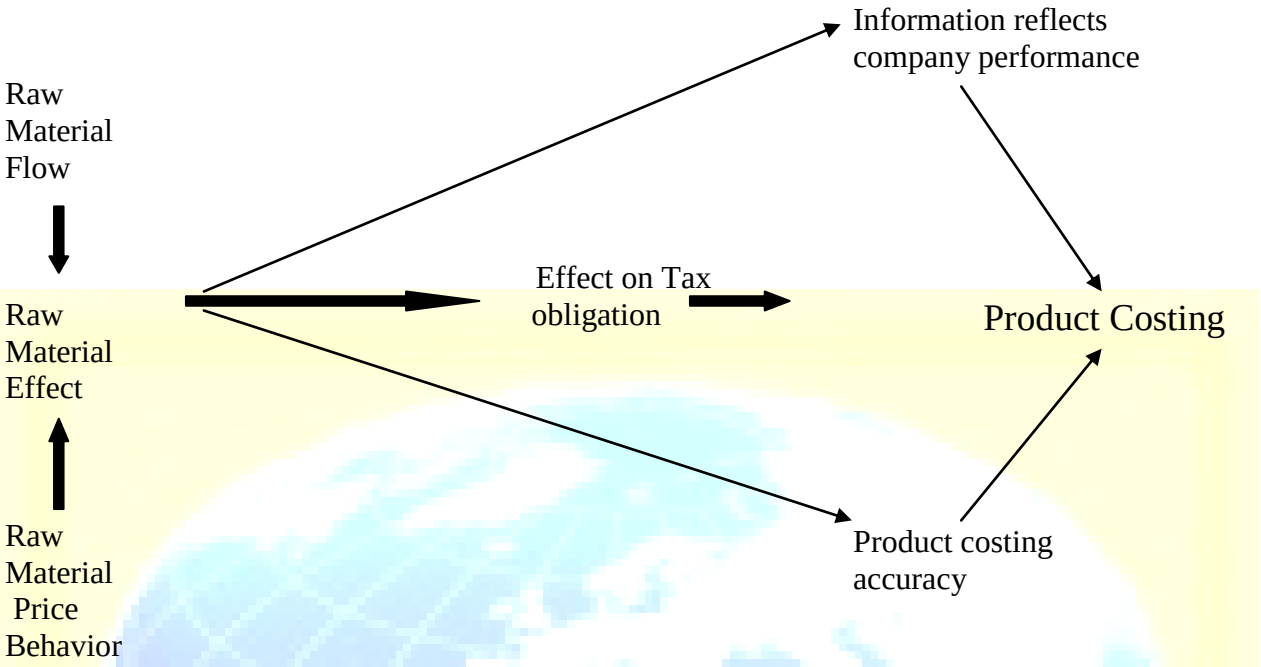

Figure: Cost Flow Diagram

The main objective of management accounting is to give information for decision-makers. The first variable (information reflects company performance) takes this into consideration. If the product costing policy give accurate information about the current situation and the recent success of the company, this information can be trusted and thus management can make reliable decisions based on the information. This information reliability affects all business levels. At product level, if the costs are allocated to the products incorrectly, it is impossible to compare profitability of these products. Because of these incorrectly calculated product costs, management might withdraw some profitable and leave some unprofitable products to the product line. Of course this decreases the profitability of the company.

Second, pricing is often based on product costs. Thus product costs need to be as accurate as possible. If the costs are not accurate, pricing is neither optimal. Because of inaccurate product costing company might sell goods that are priced too high or low, and thus lose customers or make loss. Products can include a lot of raw material, and when the price of the raw material changes, product costs should also change. If these product costs are seldom updated, they can be

far from real values. Even if the company updates raw material prices continuously, the prices are still not usually optimal. This is due to the fact that the raw material costs are allocated to the product when it is transferred from raw material inventory. Yet, the product is sold to a customer after it is produced and a customer has been found. Therefore there is a time lag between the moments when the cost of raw material is allocated to the product and when the product is sold. So, it is important that allocated costs reflect the market situation when the end-product is sold.Changes in Inventory prices affect product costing and pricing. When costs are set to a product these costs should reflect the market situation at the time when the end-product is priced and sold. If the product costs differ greatly from the market value, the costs of product are either too low or too high. That causes problems of either selling goods for too low price and making loss or trying to sell for too high price and losing sales. Thus the difference between costs of Inventory and market price of Inventory at the time of selling the end-product should be minimized.

Conclusion:

Material prices affects every objective of management accounting, which are supplying information for internal decision makers, facilitating their decision making, motivating their actions and behavior in a given direction and promoting efficiency of the organization. All previous objectives are heavily affected by this uncertainty, and thus it has a large impact on business performance.

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