

German Cost Accounting

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Introduction

Managerial accounting is not dead, but some believe it is no longer relevant because so many manufacturing operations have become automated. This paper will show that not only is managerial accounting relevant, but that the cost accounting methods popular in German speaking countries can improve profits and efficiency.

According to most financial accounting textbooks the purpose of accounting is to provide financial information to stakeholders for them to make economic decisions. Financial accounting's role is to prepare financial statements to show an entity's results of operation, financial position, and cash flows; whereas managerial accounting's role is to furnish management with accounting data related to the firm's operations (Easton, 2008). The goal is that the information be relevant (useful to the decision maker) and reliable (accurate). The problem is that no one system is both relevant and reliable to all stakeholders/decision makers at all times. Absorption costing (sales – cost of goods sold = gross margin – selling and administrative expenses = net income) will indicate a higher net income if inventories increase and a lower net income if inventories decrease, and such inventory change may only be the result of how the inventories are being valued, e.g. LIFO or FIFO. Variable costing (sales – variable cost of goods sold, variable selling expenses, and variable administrative expenses = contribution margin – fixed manufacturing costs, fixed selling expenses, and fixed administrative expenses = net income) has its problems too. Inventory, for example, may be valued differently depending upon how fixed costs are allocated (Jiambalvo, 2007).

Inherent to the precedingly mentioned lack of consistency is an additional problem. Accounting information is historical, or it perhaps may use replacement costs. It typically reports what has already happened, and although we may try to extrapolate what already has happened to make future decisions, we do not use it as a part of the manufacturing process. That is, we do use it artfully, the same as any other tool on the production line, such as a wrench/spanner, to decrease costs and improve quality.

In contrast, "German cost accounting was designed with the explicit objective of supporting management decision making about which products or services to offer, how to price them, and how to plan and control operations" (P. A. Sharman, 2003). German Cost Accounting does not conform to absorption accounting as used in the US, nor does it conform to variable costing also as used in the US, but it does provide information that may decrease product costs and improve product quality, and it provides the information concurrently as part of the manufacturing process. It is not used to determine the cost of inventory, but it is used to control the cost of inventory. If US manufactures were to adopt these methods, could they decrease costs and improve quality? This is not to say that US manufactures are inefficient, it only poses possible improvements, and addresses the question of why it is not used.

The German system which may possibly decrease product costs and improve product quality does have costs. Sometimes workers become so focused on their own tasks that they fail to consider how what they do affects everything else. Like a player in a game, they may become more concerned with how they personally are perceived (scoring) rather than if the team is winning the game. Sharman (P. A. Sharman, 2003)

noted that, "So intricate is the scoring process that some players become distracted and concentrate on keeping score rather than playing the game (Enron, WorldCom). In those instances, the analysts (unintentionally perhaps) create business performance criteria based on scorekeeping intricacies rather than actual playing ability". This leads us to the objective of this paper.

Objective

The objective of this paper is to examine whether the benefits of German Cost Accounting as herein defined exceed its costs, or whether its usage is just a cultural preference of the German Speaking countries.

Literature Review

There are many forms of Cost Accounting used in German. They include:

- *Grenzplankostenrechnung* (GPK) (P. A. Sharman, 2003)
(English translation: Marginal Planned Cost Accounting or Flexible Analytic Cost Planning and Accounting)
- Flexible Analytic Cost Planning and Accounting (P. A. Sharman, 2003)
- *Prozesskostenrechnung* (PK) (P. A. Sharman, 2003)
(English translation: Activity Based Costing)
- German Standard Costing (van der Merwe, 2004)
- Flexible *Plankostenrechnung und Deckungsbeitragsrechnung* (van der Merwe, 2004)
(English translation: Flexible Plan Cost Accounting and Contribution Margin Accounting)
- *Einzelkostenrechnung* (Gaiser, 1997a)
(English translation: Single Costing Method)
- Resource Consumption Accounting (RCA) (MacArthur, 2008)

This paper will concentrate on those German Cost Accounting methods which decrease product cost or improve product quality, but to understand these methods we need to understand the culture in which they operate.

How History and Culture Affect Accounting

"Cultural factors are a part of the cost-benefit considerations that should underlie all management accounting choices" (MacArthur, 2006). "[Germany's] strong anti-inflation attitudes are the result of the ravages of two debilitating inflationary periods it went through in the 20th century" (Choi, 2008). Following World War I (1914 to 1918) and until World War II (1939 to 1945) Germany experienced massive hyperinflation. In 1923, a person would have to pay 1,000,000,000,000 Marks to buy the same things 1 (one) Mark would purchase in 1918. In 1936, H. Rolf Fritzsche in *Die Wirtschaft in Deutschland, Hanseatische Verlagsanstalt, Hamburg*, wrote "The more cheaply a business operates, the more it saves for the entire nation" (Matz, 1940). In

general German companies were and still are very cautious and conservative, as are its investors.

“Traditionally the primary source of finance for German companies [has been] bank loans, rather than equity raised through the capital market” as has been done in the United States (Doupnik, 2009). German stakeholders included more lenders whereas the US stakeholders included more stockholders. The emphasis was and still is to protect the lenders. “Conservative balance sheet valuations were central to creditor protection. ... [N]o distinction was made between financial statements prepared for tax purposes and those published in financial statements. ... Before 1998 ... legal requirements were absolutely supreme” (Choi, 2008). “Creditor protection [was] a fundamental concern of German accounting as embodied in the Commercial Code. At [the end of World War II], business accounting emphasized national and sectional charts of account (as in France). The Commercial Code stipulated principles of ‘orderly bookkeeping’ [to protect creditors].” “Independent auditing barely survived the war.” (Underlining added for emphasis.) However, “The German accounting environment has changed continuously and remarkably since the end of World War II.” “The new German accounting standard-setting system is broadly similar to the systems in the United Kingdom ... and the United States. ..., [but] Germany still is one of the world’s staunches adherents to the historical cost principle.”

The Lack of Convergence in Accounting Methods

Some attribute the usage differences between Germany and the US to language and academic differences. Could there be a language barrier? [O]nly nineteen articles from 1998 to 2004 were published by authors from German-speaking countries in leading international journals as opposed to over 220 in German-language journals over the same time period (Horvath, 2009). Further, the direction of the transfer of concepts has occurred mostly from English-speaking countries and their scientific outlets to other countries. The reverse direction has only recently become fashionable: for example, Japanese management accounting and German cost accounting. To a great extent, the mainly one-way transfer of knowledge is due to the pervasive use of English as the “common language” in accounting research (Christensen, 1997). However, regardless of the reason why the attitude toward cost accounting is different in Germany than in the US, there does appear to be a difference. What can the US learn from Germany?

German versus US Accounting/Manufacturing Methods

As accounting is needs driven, the information is tailored to the user. Accordingly, the informational needs of the stakeholders in those countries which use debt financing (e.g. Germany) are different than those supplied to the stakeholders in countries which use equity financing (e.g. United States)(Choi, 2008; Doupnik, 2009). “German companies emphasize management accounting more, and U.S. companies place their accounting emphasis on financial reporting” (K. Krumwiede, & Suessmair, A., 2007). “A clear conceptual distinction is drawn between information needs as well as demands for external reporting purposes and those for internal use by management. The demand for financial information is deeply entrenched in U.S. organizations; the German approach takes into consideration this demand, but formally recognizes the

fallacy of this information for running a company” (D. E. v. d. M. Keys, A., 1999). US companies are not interested in the cost accounting methods used in Germany. They are unsure the benefits will exceed the cost and the US companies are more interested in the capital markets (K. R. Krumwiede, 2005). However, despite US emphasis on financial reporting for stockholders versus the German emphasis on managerial reporting for internal use, as well as the German bias of protecting lenders, there are several studies that provide evidence finding that the dividend payout level is significantly higher in Germany than in the US (Leuz, 2003). Considering the possibility of lower production costs, higher quality, and more dividends, could US manufacturers obtain these improvements if they adopted German Cost Accounting methods?

What is German Cost Accounting?

As a precursor we should not confuse German target costing with Japanese target costing (P. A. Sharman, 2003), nor should we ignore the contribution of Japanese target costing. German target costing is a target cost, a benchmark based on past experience (Offenbacher, 2004), whereas Japanese target costing is a method of determining the cost of a product or service based on the price (target price) that customers are willing to pay and then designing or engineering the product or service to those specifications for a cost (target cost) so that the manufacturer can make a profit (Mowen, 2008). (Author comment: Although the literature seems to be pigeonholing the two costing methods, they seem complimentary and should be considered together.) So, what aspects of German cost accounting should we consider to decrease costs and improve quality?

German controlling emphasizes a team effort between controllers and managers and includes: (a) a strong focus on strategy and planning, (b) detailed and specific accounting information, and (c) intensive academic research (Horvath, 2009). It includes Activity-based Management: (a) it assigns costs to the year the costs produce the associated benefits, (b) it assigns costs to activities, and (c) it assigns the costs of the activities to products or systems (D. E. Keys, 1994), and it includes – “the idea that managers should be held responsible for costs they have control over” (K. R. Krumwiede, 2005). This, it is believed, can be accomplished with cost centers.

Cost centers can be primary, far from the manufacturing process (such as plant managers), or final, closely connected to the manufacturing process (such as direct material or direct labor) (Friedl, 2005). Centers should be “cost-pull” rather than “cost-push” (“Grenzplankostenrechnung Costing,” 2009). The cost center needs to be structured as a cost-pull, not cost-push. “In a cost-pull system, cost assignment begins with output quantity, and costs are assigned on the basis of predetermined unit quantities of demand. Each cost center passes back its requirements until the support department’s output requirements are determined and resource requirement and costs calculated.” In contrast, “in a cost-push system, cost allocations are a function of historical levels of spending, and costs are simply passed from support department to primary departments without giving consideration to whether resources were actually consumed by the receiving department” (P. A. Sharman, 2003).

The cost centers are most effective in manufacturing or service organizations that are highly routinized and repetitive (P. A. Sharman, 2003). Cost centers should be

simple – not complex (P. A. Sharman, ACMA, & Vikas, K., 2004). Cost centers do not monitor all costs, only marginal costs ("Grenzplankostenrechnung Costing," 2009). Cost centers should be designed so that each center is only monitoring a single activity which could be a cost or a quality aspect, but managers may be responsible for many different cost centers (P. A. Sharman, 2003). The cost centers should incorporate benchmarking, just-in-time inventory management, transfer pricing policies, strategic planning, activity based costing (ABC), and target costing (German and Japanese) (K. Krumwiede, & Suessmair, A., 2008).

Target costs or benchmarks are necessary for cost managers to strive toward (Offenbacher, 2004). Cost centers can include qualitative characteristics, such as customer satisfaction (Kim, 1994). Cost centers should assign expenses directly to cost objects (Gaiser, 1997a). Fixed costs are not charged to products (Friedl, 2005). Labor might not be treated as a direct cost because of laws or contracts (K. R. Krumwiede, 2005). Emphasis is on direct or proportional costs (P. A. Sharman, ACMA, & Vikas, K., 2004). Decision support should be defined in terms of avoidable/ unavoidable rather than fixed/variable (Clinton, 2008). Cost centers should assign expenses directly to cost objects (Gaiser, 1997a). Standards need to be stable throughout time periods (P. A. Sharman, ACMA, & Vikas, K., 2004). The cost center output needs to be measurable in a number of units or an activity (P. A. Sharman, 2003). Replacement cost should take precedence over historical cost (MacArthur, 2008).

Process costing (ABC) is not used in evaluating cost centers per se, but is used for verification and as a means of identifying cost centers (Offenbacher, 2004). ABC and German cost accounting are complementary (P. A. Sharman, 2003). (Author comment: We need to remember that ABC is typically used to allocate those cost not within the purview the cost center manager, e.g. indirect costs and other factory overhead.) ABC and German Cost Accounting need to complement each other (Friedl, 2005).

German Cost Accounting should, "Establish conditions under which workers can actively participate in improving manufacturing systems" (Limprecht, 1982). It is important to monitor quality including customer satisfaction and hidden qualities (unrecorded costs) (Albright, 1992). Quality should be designed into products rather than being inspected into them (Anderson, 1998). It is costly to produce poor quality products (Albright, 1992). That is, make products to specification rather than fixing them after production. "Separating fixed and proportional costs is crucial for deciding how to use or whether to eliminate capacity" (K. R. Krumwiede, 2005).

Mitigating Observations

"Many U.S. management accountants say their companies aren't interested in GPK for a variety of reasons," including whether the benefits exceed the costs (K. R. Krumwiede, 2005). "German research and development have basically 2 problems: 1. German companies have not entered big new markets such as multimedia and genetic engineering because of risk aversion, farsightedness and political barriers. 2. In existing markets such as machinery and car industries, German companies have lost market share to competitors who were better able to meet customer needs in terms of product quality, functionality, and price"(Gaiser, 1997b). Again, "So intricate is the scoring

process that some players become distracted and concentrate on keeping score rather than playing the game (Enron, WorldCom)” (P. A. Sharman, 2003).

Literature Summary

Summarizing the literature, German Cost Accounting tries to use accounting to currently minimize costs rather than using it to make decisions about historical costs. That is, it uses information before or during the process, rather to judge what has already happened. Managers are placed in charge of cost centers. The cost centers only monitor those costs over which management has control, those costs which could potentially be avoided. Frequently avoidable costs are the same as variable costs, but not always. The cost center structure should be simple so that only one activity or cost is being monitored by a manager, but a manager may be responsible for several costs centers. The cost centers could be at the manufacturing/service level, or they could be at plant level. Intuitively it would seem reasonable that if management could be motivated to increase output quantity and/or quality without increasing costs that company profits should increase. However, German Costs Accounting does have its costs. The accounting system is intricate and costly to setup, but it would seem that once the system were established that it's per unit cost would decrease as production quantities increased.

The literature to date has been descriptive. No one has determined whether German Cost Accounting is more effective quantitatively and/or qualitatively. This may be because there are too many different factors that cannot be controlled when trying to compare the results of operation between companies of different countries, or some things may not translate or may not even exist in both countries. Therefore, this paper will address the objective question experimentally.

The Question

Past research has primarily and extensively defined German Cost Accounting. This paper will only examine that portion of German Cost Accounting which has the potential to increase quality and/or reduce costs. More specifically, it will examine whether cost centers can be used to increase quality and reduce costs.

If we assume there are only two costs in the herein defined German Cost Accounting system, a setup cost and a maintenance cost, and if we assume that the maintenance cost is relatively insignificant compared to that of the set up cost then we need only be concerned with the setup cost to determine a cost benefit relationship. Further, the setup cost per unit will decrease as the number of units of product increase, and if the total number of units produced is sufficiently large, then this setup cost per unit will also be insignificant. The logic for the preceding is that the information for the system would be maintained on computers and the cost to maintain the system would be relatively insignificant compared to the initial setup cost, which would decrease per unit as quantities produced increased. Accordingly, we only need to show that the herein defined German Cost Accounting does in fact increase quality and/or decrease costs to show that the benefits exceed the costs.

If we can show that output can be increased quantitatively and qualitatively without changing input (or perhaps only insignificantly), then we have shown that management can influence output, and that quantity and/or quality can be increased. That is, setup an experiment and show an increase in output without increasing input.

Hypothesizes

We want to show that managers can increase output without increasing input, and that the cost to do so is insignificant. This leads to the following hypothesizes.

H1: Management can increase output without increasing input using cost centers.

H2: Total costs have not increased significantly.

Methodology

I intend to use the same procedures as used in “Investor Reaction to Derivative Use and Outcomes” (Koonce, 2008). I will take groups of students and ask them to perform a task. I will then ask these students to perform the same task and obtain more output quantitatively and qualitatively with the same input, both with and without additional compensation. The results could then be analyzed using ANOVA.

More specifically, divide an MBA class into two groups with each having a team leader. Explain to them that as a part of their class grade each group will be required to fill as many containers as they can with water within ten minutes. Next, they are to do the same task, but this time the team leader of the group which can fill the most bottles will receive \$20 with the following stipulation: only bottles filled to a certain level will be counted. Finally, perform the same task as in the second experiment, except this time both teams will receive a free dinner; the winning team gets steak and the losing team gets beans. It is important that the students are not aware of the succeeding experiments. The result will be 12 2x2 matrices which can be analyzed using ANOVA.

Summary, Implications, and Outcome

I anticipate that we will find that German Cost Accounting is more efficient than non-German Cost Accounting in quantity and quality.

References

- Albright, T. L. R., H. (1992). The Measurement of Quality Costs: An Alternative Paradigm. *Accounting Horizons*, 6(2), 13.
- Anderson, S. W. S., K. (1998). Designing quality into Products: The Use of Accounting Data in New Product Development. 12(3), 21.

- Choi, F. D. S., & Meek, G. K. (2008) Tilte. In & (6 ed., pp. 65 - 70). Upper Saddle River: Pearson Prentice Hall.
- Christensen, J., & Wagenhofer, A (1997). Special Section: German cost Accounting Traditions. *Management Accounting Research*, 8(3), 5.
- Clinton, B. D., & Van Der Merwe, A. (2008). Understanding Resources Consumption and Cost Behavior. *Journal of Cost Management*, 22(4), 14.
- Douppnik, T., & Perera, H. (2009). *International Accounting* (2 ed.): McGraw-Hill Irwin.
- Easton, P. D., Wild, J. J., Halsey, R. F., & McAnally, M. L. (2008). *Financial Accounting for MBAs* (3 ed.): Cambridge Business Publishers.
- Friedl, G., Kupper, H., & Pedell, B. (2005). Relevance Added: Combining ABC with German Cost Accounting. *Strategic Finance*, 86(12), 8.
- Gaiser, B. (1997a). German Cost Management Systems - Part 1. *Journal of Cost Management*, 11(5).
- Gaiser, B. (1997b). German Cost Management systems (Part 2). *Journal of Cost Management*, 11(6), 41.
- Grenzplankostenrechnung Costing. (2009). *The KAIZEN Lean & Green™ Solution*. Retrieved from http://www.leanadvisors.com/index.php/what/glossary_defn/grenzplankostenrechnung_costing/
- Horvath, P. (2009). What is German controlling? *Journal of Cost Management*, 23(2), 4.
- Jiambalvo, J. (2007). *Managerial Accounting* (3 ed.). Hoboken: John Wiley & Sons, Inc.
- Keys, D. E. (1994). Tracing costs in the Three stages of Activity-based Management. *Journal of Cost Management*, 7(4), 30.
- Keys, D. E. v. d. M., A. (1999). German vs. United States Cost Management. *Management Accounting Quarterly*, 1(1), 9.
- Kim, M. W. L., W. M. (1994). Estimating hidden Quality Costs with Qulaity Loss Functions. *Accounting Horizons*, 8(1), 11.
- Koonce, L., Lipe, M. G., McAnally, M. L. (2008). Investor Reaction to Derivative Use and Outcomes. *Review of Accounting studies*(13), 571 - 597.
- Krumwiede, K., & Suessmair, A. (2007). Comparing U. S. and German Cost Accounting Methods. *Management Accounting Quarterly*, 8(3), 10.
- Krumwiede, K., & Suessmair, A. (2008). A closer Look at German Cost Accounting. *Management Accounting Quarterly*, 10(1), 15.
- Krumwiede, K. R. (2005). Rewards and Realities of German Cost Accounting. *Strategic Finance*, 86(10), 8.
- Leuz, C. a. W., J. (2003). The Role od Accounting in the German Financial System. *Center for Financial Studies an der Johann Wolfgang Goethe-Universitat*, 16, 1-49.
- Limprecht, J. A., & Hayes, Robert H. (1982). Germany's world-class manufacturers. *Harvard Business Review*, Novemebr - December, 9.
- MacArthur, J. B. (2006). Cultural Influences on German versus U.S. Management Accounting. *Management Accounting Quarterly*, 7(2), 6.
- MacArthur, J. B. (2008). Practical Guidelines for Replacement Cost Depreciation in RCA. *Journal of Cost Management*, 22(1), 29.

- Matz, A. (1940). Accounting as a Tool for Economy in German Business. *The Accounting Review*, 15(2), 9.
- Mowen, M. M., & Hansen, D. R. (2008). *Cornerstones of Managerial Accounting* (2 ed.). Mason: Thomson Higher Education.
- Offenbacker, S. (2004). 0 Introduction: Marginal Costing as a Management Accounting Tool. *Management Accounting Quarterly*, 5(2), 22.
- Sharman, P. A. (2003). Bring on German Cost Accounting. *Strategic Finance*, December, 30-38.
- Sharman, P. A., ACMA, & Vikas, K. (2004). Lessons from German Cost Accounting. *Strategic Finance*, 86(6), 8.
- van der Merwe, A. (2004). Chapter Zero in Perspective. *Management Accounting Quarterly*, 5(2), 7.